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1.1 libjpeg 6b

1.1.1 Notifications :

This software is based in part on the work of the Independent JPEG Group.

1.1.2 Available under license :

The Independent JPEG Group's JPEG software

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README for release 6b of 27-Mar-1998

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Serious users of this software (particularly those incorporating it into larger programs) should contact IJG at jpeg-info@uunet.uu.net to be added to our electronic mailing list. Mailing list members are notified of updates and have a chance to participate in technical discussions, etc.

This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

IJG is not affiliated with the official ISO JPEG standards committee.

DOCUMENTATION

ROADMAP

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This file contains the following sections:

- OVERVIEW General description of JPEG and the IJG software.
- LEGAL ISSUES Copyright, lack of warranty, terms of distribution.
- REFERENCES Where to learn more about JPEG.
- ARCHIVE LOCATIONS Where to find newer versions of this software.
- RELATED SOFTWARE Other stuff you should get.
- FILE FORMAT WARS Software *not* to get.
- TO DO Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

- install.doc How to configure and install the IJG software.
- usage.doc Usage instructions for cjpeg, djpeg, jpegtran, rdjpgcom, and wrjpgcom.
- *.1 Unix-style man pages for programs (same info as usage.doc).
- wizard.doc Advanced usage instructions for JPEG wizards only.
- change.log Version-to-version change highlights.

Programmer and internal documentation:

- libjpeg.doc How to use the JPEG library in your own programs.
- example.c Sample code for calling the JPEG library.
- structure.doc Overview of the JPEG library's internal structure.
- filelist.doc Road map of IJG files.
- coderrules.doc Coding style rules --- please read if you contribute code.

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

OVERVIEW

=====

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images.

JPEG is intended for compressing "real-world" scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

We welcome the use of this software as a component of commercial products. No royalty is required, but we do ask for an acknowledgement in product documentation, as described under LEGAL ISSUES.

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The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

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REFERENCES

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We

highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44. (Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at <ftp://ftp.uu.net/graphics/jpeg/wallace.ps.gz>. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C

code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2). This is by far the most complete exposition of JPEG in existence, and we highly recommend it.

The

JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.) In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging \$95 for Part 1 and \$47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department
C-Cube Microsystems, Inc.
1778 McCarthy Blvd.
Milpitas, CA 95035
phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at <ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz>. There is also a plain text version at <ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz>, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from <ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz>. The JPEG incorporation

scheme

found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from [ftp.sgi.com](ftp://ftp.sgi.com) or from <ftp://ftp.uu.net/graphics/jpeg/>. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from <ftp://ftp.sgi.com/graphics/tiff/>.

ARCHIVE LOCATIONS

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The "official" archive site for this software is <ftp.uu.net> (Internet address 192.48.96.9). The most recent released version can always be found there in directory [graphics/jpeg](ftp://ftp.uu.net/graphics/jpeg/). This particular version will be archived as <ftp://ftp.uu.net/graphics/jpeg/jpegsrc.v6b.tar.gz>. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact help@uunet.uu.net for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only <ftp.uu.net> is guaranteed to have the latest official version.

You can also obtain this software in DOS-compatible "zip" archive format from the SimTel archives (<ftp://ftp.simtel.net/pub/simtelnet/msdos/graphics/>), or on CompuServe in the Graphics Support forum (GO CIS:GRAPHSUP), library 12 "JPEG Tools". Again, these versions may sometimes lag behind the <ftp.uu.net> release.

The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups [comp.graphics.misc](news:comp.graphics.misc), [news.answers](news:news.answers), and other groups. It is available on the World Wide Web at <http://www.faqs.org/faqs/jpeg-faq/> and other [news.answers](news:news.answers) archive sites, including the official [news.answers](news:news.answers) archive at [rtfm.mit.edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/](ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/). If you don't have Web or FTP access, send e-mail to mail-server@rtfm.mit.edu with body
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RELATED SOFTWARE

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Numerous viewing and image manipulation programs now support JPEG. (Quite a few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet.

If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites,

notably <ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/>.

Unfortunately PBPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from <ftp://havefun.stanford.edu/pub/jpeg/>. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

FILE FORMAT WARS

=====

Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read.

(For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)

The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation. We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.

The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear

whether

SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)

Various proprietary file formats incorporating JPEG compression also exist. We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format!

TO DO

=====

The major thrust for v7 will probably be improvement of visual quality. The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.

In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions --- principally, variable quantization and the SPIFF file format.

As always, speeding things up is of great interest.

Please send bug reports, offers of help, etc. to jpeg-info@uunet.uu.net.

1.2 javax-inject 1

1.2.1 Available under license :

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1.4 slf4j 1.6.6

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1.5 javax-json 1.0.4

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jar/org/intellij/lang/annotations/Pattern.java
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jar/org/intellij/lang/annotations/Language.java
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1.13 ncurses 5.9-14.20130511.e17_4

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1.14 jboss-logging 3.3.2.Final

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1.15 reflections 0.9.11

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Manifest-Version: 1.0

Bundle-Description: Reflections - a Java runtime metadata analysis
Bundle-License: <http://www.wtfpl.net/>, <http://www.opensource.org/licenses/bsd-license.html>
Bundle-SymbolicName: org.reflections
Archiver-Version: Plexus Archiver
Built-By: ron
Bnd-LastModified: 1490358733199
Bundle-ManifestVersion: 2
Import-Package: com.google.common.base;version="[20.0,21)",com.google.common.collect;version="[20.0,21)",com.google.common.io;version="[20.0,21)",com.google.common.util.concurrent;version="[20.0,21)",com.google.gson;resolution:=optional,javassist;version="[3.21,4)",javassist.bytecode;version="[3.21,4)",javassist.bytecode.annotation;version="[3.21,4)",javassist.expr;version="[3.21,4)",javax.annotation;version="[3.0,4)",javax.servlet;resolution:=optional,org.dom4j;resolution:=optional,org.dom4j.io;resolution:=optional,org.reflections,org.reflections.adapters,org.reflections.scanners,org.reflections.serializers,org.reflections.util,org.reflections.vfs,org.slf4j;version="[1.7,2)";resolution:=optional
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"
Tool: Bnd-3.2.0.201605172007
Export-Package: org.reflections;uses:="com.google.common.base,com.google.common.collect,javax.annotation,org.reflections.adapters,org.reflections.scanners,org.reflections.serializers,org.slf4j";version="0.9.11",org.reflections.adapters;uses:="javassist.bytecode,javax.annotation,org.reflections.vfs";version="0.9.11",org.reflections.scanners;uses:="com.google.common.base,com.google.common.collect,javax.annotation,org.reflections,org.reflections.adapters,org.reflections.vfs";version="0.9.11",org.reflections.serializers;uses:="org.reflections";version="0.9.11",org.reflections.util;uses:="com.google.common.base,javax.annotation,javax.servlet,org.reflections,org.reflections.adapters,org.reflections.scanners,org.reflections.serializers,org.slf4j";version="0.9.11",org.reflections.vfs;uses:="com.google.common.base,javax.annotation";version="0.9.11"
Bundle-Name: Reflections
Bundle-Version: 0.9.11
Created-By: Apache Maven Bundle Plugin
Build-Jdk: 1.8.0_101

Found in path(s):

* /opt/cola/permits/183118678_1695334482.2038553/0/reflections-0-9-11-jar/META-INF/MANIFEST.MF

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* /opt/cola/permits/183118678_1695334482.2038553/0/reflections-0-9-11-jar/META-

INF/maven/org.reflections/reflections/pom.xml

1.16 gnupg 2.0.22-5.el7_5

1.16.1 Available under license :

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/opt/cola/permits/183657586_1695337116.0137277/0/gnupg2-2-0-22-5-el7-5-x86-64-rpm-tar-gz/gnupg2-2.0.22-5.el7_5.x86_64.rpm: binary file matches

Found in path(s):

* /bin/grep

1.17 httpasyncclient 4.1.4

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1.18 abego-treelayout-core 1.0.3

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1.19 failureaccess 1.0.1

1.20 gobject-introspection 1.56.1-1.e17

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1.21 gpgme 1.3.2-5.el7

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1.24 latencyutils 2.0.3

1.25 swagger-jaxrs2 2.0.7

1.26 commons-pool 2.6.2

1.27 javax-ws-rs-api 2.1.1

1.28 bzip2 1.0.8

1.29 j2objc-annotations 1.3

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1.32 jsr311-api 1.1.1

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The initial code for shuffling an array (originally in class "org.apache.commons.math3.random.RandomDataGenerator", now replaced by a method in class "org.apache.commons.math3.util.MathArrays") was inspired from the algorithm description provided in "Algorithms", by Ian Craw and John Pulham (University of Aberdeen 1999).

The textbook (containing a proof that the shuffle is uniformly random) is available here:

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jar/com/lmax/disruptor/EventFactory.java

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 jar/com/lmax/disruptor/ProcessingSequenceBarrier.java
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 jar/com/lmax/disruptor/LifecycleAware.java
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 * /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-
 jar/com/lmax/disruptor/SequenceGroup.java
 * /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-
 jar/com/lmax/disruptor/EventTranslatorVararg.java

* /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-jar/com/lmax/disruptor/YieldingWaitStrategy.java
* /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-jar/com/lmax/disruptor/dsl/ConsumerRepository.java
* /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-jar/com/lmax/disruptor/EventHandler.java
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* /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-jar/com/lmax/disruptor/EventTranslator.java
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* /opt/cola/permits/1005594541_1646171709.07/0/disruptor-3-4-2-sources-jar/com/lmax/disruptor/WorkProcessor.java
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```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
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```
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```

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```
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```

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1.47 geoipupdate 2.5.0-1.el7

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```

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```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
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1.48 python-chardet 2.2.1-3.el7

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Version 2.1, February 1999

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1.52 giflib 5.2.1

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1.53 zstd 1.4.0

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1.54 audit-lib 2.8.5-4.e17

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Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: *

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1.56 lz4 1.9.2

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Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

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1.57 kmod 20-28.el7

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1.59 passwd 0.79-6.el7

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1.61 setup 2.8.71-11.el7

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1.62 shared-mime-info 1.8-5.el7

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```

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1.66 pam 1.1.8-23.el7

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* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Param.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/QueryMap.java
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jar/feign/codec/DecodeException.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Util.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/auth/BasicAuthRequestInterceptor.java
*
/opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/MethodMetadata.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/codec/EncodeException.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/FeignException.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Contract.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/RetryableException.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Feign.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/codec/ErrorDecoder.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Client.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Response.java
*
/opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/RequestTemplate.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/auth/Base64.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Request.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/ReflectiveFeign.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/codec/StringDecoder.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Logger.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Retryer.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/Target.java
* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/RequestInterceptor.java
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* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/InvocationHandlerFactory.java

* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/SynchronousMethodHandler.java

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* /opt/ws_local/PERMITS_SQL/1041742352_1590954355.62/0/feign-core-8-18-0-sources-jar/feign/codec/Decoder.java

1.70 feign-jackson 8.18.0

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- * /opt/ws_local/PERMITS_SQL/1041746349_1590960627.05/0/feign-jackson-8-18-0-sources-jar/feign/jackson/JacksonDecoder.java
- * /opt/ws_local/PERMITS_SQL/1041746349_1590960627.05/0/feign-jackson-8-18-0-sources-jar/feign/jackson/JacksonEncoder.java

1.71 feign-jaxrs 8.18.0

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- * /opt/ws_local/PERMITS_SQL/1041740744_1590954450.45/0/feign-jaxrs-8-18-0-sources-jar/feign/jaxrs/JAXRSContract.java

1.72 jedis 3.3.0

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* /opt/ws_local/PERMITS_SQL/1047560748_1590497249.67/0/jedis-3-3-0-sources-
jar/redis/clients/jedis/util/RedisInputStream.java

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jar/redis/clients/jedis/util/MurmurHash.java

1.73 error_prone_annotations 2.3.4

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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/ForOverride.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/Var.java
*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/SuppressPackageLocation.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/IncompatibleModifiers.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CompileTimeConstant.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/LazyInit.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/RequiredModifiers.java
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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java
*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java

* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CheckReturnValue.java

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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/NoAllocation.java

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/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/LockMethod.java

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jar/com/google/errorprone/annotations/FormatString.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-
jar/com/google/errorprone/annotations/DoNotMock.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-
jar/com/google/errorprone/annotations/CompatibleWith.java
*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-
jar/com/google/errorprone/annotations/RestrictedApi.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-
jar/com/google/errorprone/annotations/MustBeClosed.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-
jar/com/google/errorprone/annotations/FormatMethod.java
```

1.74 fdisk 2.23.2

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```

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

```
#1:   32   7648 0x83
#2:  7680   8704 0xa5
#5:  7936   4864 0x7 (freebsd)
#6: 12544   3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System

Create 1st primary partition
ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux

Create 2st primary partition
1bebf87248e05d6e4e62b749da65d023
bsd.img
Set 2nd partition type
2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux
__ts_dev__2		4096	20479	8192	a5	FreeBSD

Create default BSD
2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

```
#  start  end  size  fstype  [fsize bsize  cpg]
c: 4096 20479 16384  unused  0 0
d: 0
   16064 16065  unused  0 0
```

BSD disklabel command (m for help):

Command (m for help):

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

```
#  start  end  size  fstype  [fsize bsize  cpg]
a: 4096 6144 2049 4.2BSD  0 0 0
c: 4096 20479 16384  unused  0 0
d: 0 16064 16065  unused  0 0
```

BSD disklabel command (m for help):

Command (m for help):

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

```
0 unused 5 4.1BSD 9 4.4LFS d boot
1 swap
   6 Eighth Edition a unknown e ADOS
2 Version 6 7 4.2BSD b HPFS f HFS
3 Version 7 8 MS-DOS c ISO-9660 10 AdvFS
4 System V
```

BSD disklabel command (m for help):

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*/

1.75 yum-utils 1.1.31-54.el7_8

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Found in path(s):

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/flow/FlowControlHandler.java

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Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/rxtx/RxtxChannelOption.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/rxtx/RxtxDeviceAddress.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/oio/OioByteStreamChannel.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/sctp/SctpChannelOption.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/rxtx/DefaultRxtxChannelConfig.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/rxtx/package-info.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/rxtx/RxtxChannel.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/UdtServerChannel.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/rxtx/RxtxChannelConfig.java

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- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/DefaultHeadersImpl.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/InboundHttp2ToHttpAdapterBuilder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DecoratingHttp2ConnectionDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/WeightedFairQueueByteDistributor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/StreamByteDistributor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/MathUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/ByteProcessor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2PromisedRequestVerifier.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/ValueConverter.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DecoratingHttp2ConnectionEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/CharSequenceValueConverter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2StreamVisitor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/CoalescingBufferQueue.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/AbstractInboundHttp2ToHttpAdapterBuilder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/UniformStreamByteDistributor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/StreamBufferingEncoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DecoratingHttp2FrameWriter.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/Library.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/SSL.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/SSLContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/Buffer.java

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- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2FrameReader.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2ConnectionDecoder.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FrameTypes.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/ShortObjectMap.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2Connection.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2DataWriter.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2Connection.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/ShortObjectHashMap.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2EventAdapter.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2ServerUpgradeCodec.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/ObjectUtil.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/CharObjectHashMap.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/package-info.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2Error.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttQoS.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FrameWriter.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/LongObjectMap.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2ConnectionHandler.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2LocalFlowController.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2ConnectionAdapter.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FrameListener.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/EmptyHeaders.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2HeadersDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2NoMoreStreamIdsException.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http2/helloworld/client/Http2SettingsHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http2/helloworld/server/Http2OrHttpHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/EmptyHttp2Headers.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/CompressorHttp2ConnectionEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HttpToHttp2ConnectionHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2LifecycleManager.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpServerUpgradeHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2RemoteFlowController.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2CodecUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2Flags.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2FrameReader.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/collection/LongCollections.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/InboundHttp2ToHttpAdapter.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2RemoteFlowController.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2ConnectionEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2ConnectionEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/collection/CharCollections.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http2/helloworld/client/Http2Client.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/collection/ByteObjectHashMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/collection/ShortCollections.java
*

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/Headers.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/client/Http2ClientInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2FrameWriter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/Http2ExampleUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/client/HttpResponseHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/CharObjectMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/DefaultHeaders.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2ClientUpgradeCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2Settings.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/IntObjectHashMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/ByteObjectMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FrameSizePolicy.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FrameAdapter.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/server/HelloWorldHttp2Handler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2HeadersDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2HeadersEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2HeadersEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/ByteCollections.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FlowController.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2Headers.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/collection/IntObjectMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/http2/Http2Exception.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DelegatingDecompressorFrameListener.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2FrameListenerDecorator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2ConnectionDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2LocalFlowController.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/collection/IntCollections.java

*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2Stream.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/collection/LongObjectHashMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpClientUpgradeHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2Headers.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/search/AhoCorasicSearchProcessorFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/search/MultiSearchProcessorFactory.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/search/AbstractMultiSearchProcessorFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http2/helloworld/frame/client/Http2ClientStreamFrameResponseHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/frame/client/Http2FrameClient.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/frame/client/Http2ClientFrameInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/search/BitapSearchProcessorFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/search/MultiSearchProcessor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/search/AbstractSearchProcessorFactory.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/search/KmpSearchProcessorFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/search/SearchProcessor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/search/SearchProcessorFactory.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SslHandshakeCompletionEvent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/DefaultAddressedEnvelope.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeadersFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/binary/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheClientCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/memcache/AbstractMemcacheObjectDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/memcache/binary/FullBinaryMemcacheRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/WebSocketFrameAggregator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 jar/io/netty/util/concurrent/ImmediateEventExecutor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthStatus.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/rxtx/RxtxClient.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/rxtx/RxtxClientHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/DefaultChannelId.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socksx/v5/Socks5AuthMethod.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/memcache/binary/AbstractBinaryMemcacheDecoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/spdy/SpdySessionHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/ChannelId.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/WebSocketClientProtocolHandshakeHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/xml/XmlFrameDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheResponseEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/spdy/DefaultSpdyHeaders.java
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 jar/io/netty/util/ConstantPool.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/group/ChannelMatchers.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/NoOpTypeParameterMatcher.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/FullHttpRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socks/SocksAuthScheme.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/Recycler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/ImmediateExecutor.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksResponseType.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ConnectTimeoutException.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyGoAwayFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/DefaultMemcacheContent.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/Promise.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockJZlibEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/DefaultThreadFactory.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/AbstractEventExecutor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/AbstractReferenceCountedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/SimpleLeakAwareByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/DefaultFullHttpRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelProgressivePromise.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/DefaultChannelProgressivePromise.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/UdtServerChannelConfig.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/FullHttpRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/DefaultFullHttpResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdySynStreamFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/LastMemcacheContent.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/UnreleasableByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyDataFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/handler/codec/http/FullHttpResponse.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/v5/Socks5AddressType.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DefaultMessageSizeEstimator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyHttpDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/DefaultByteBufHolder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/AbstractMemcacheObjectAggregator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/DefaultProgressivePromise.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/FullMemcacheMessage.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/MessageSizeEstimator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/AbstractMemcacheObject.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheServerCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/EmptyByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/DefaultBinaryMemcacheResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/ResourceLeakException.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/DefaultSpdyGoAwayFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/Crc32c.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/oio/OioSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/GenericProgressiveFutureListener.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheRequestEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/DefaultSpdyHeadersFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheResponseDecoder.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheOpCodes.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaders.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksVersion.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/SimpleChannelInboundHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelOutboundBuffer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/group/ChannelGroupException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/Native.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/PlatformDependent0.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/AbstractFuture.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/worldclock/WorldClockProtocol.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/helloworld/HttpHelloWorldServerInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/FutureListener.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdySynReplyFrame.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheRequestDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHttpCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketFrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockZlibEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/UdtChannelOption.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/AddressedEnvelope.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/DefaultPromise.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyVersion.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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jar/io/netty/util/internal/ReadOnlyIterator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/WrappedByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ReadOnlyByteBufferBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/FullBinaryMemcacheResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/DefaultSpdyStreamFrame.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/helloworld/HttpHelloWorldServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketProtocolHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/AppendableCharSequence.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/ScheduledFutureTask.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/GenericFutureListener.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ByteBufProcessor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5CommandType.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/AbstractEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/RecyclableArrayList.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksCmdStatus.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/AbstractEventExecutorGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksAuthStatus.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/oio/DefaultOioServerSocketChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketFrameEncoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/ComposedLastHttpContent.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelProgressiveFuture.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheResponseStatus.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/Future.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/DefaultUdtServerChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/ConcurrentSet.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/ReferenceCountUtil.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/CompleteFuture.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/oio/OioServerSocketChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdySessionStatus.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/group/ChannelGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksMessageType.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/DefaultFutureListeners.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/PromiseTask.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/logging/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyRstStreamFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-


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jar/io/netty/channel/group/ChannelMatcher.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyWindowUpdateFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/AbstractBinaryMemcacheMessage.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/MemcacheContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/DefaultLastMemcacheContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyRstStreamFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ReadOnlyUnsafeDirectByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/ProgressiveFuture.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyCodecUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/cors/package-info.java
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jar/io/netty/handler/codec/spdy/SpdyStreamFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/Version.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksSubnegotiationVersion.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/BinaryMemcacheResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksCmdType.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/ReferenceCounted.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/bootstrap/ChannelFactory.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/AbstractMemcacheObjectEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/PendingWrite.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/TypeParameterMatcher.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/DefaultSpdySynReplyFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ByteBufHolder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyStreamStatus.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/ProgressivePromise.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/DefaultFullBinaryMemcacheResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyPingFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/ScheduledFuture.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/AbstractReferenceCounted.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/ResourceLeak.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/group/DefaultChannelGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/ResourceLeakDetector.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksAddressType.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/AbstractDerivedByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelHandlerAdapter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/ThreadPoolExecutor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/nio/SelectedSelectionKeySet.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/oio/DefaultOioSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/DefaultSpdyWindowUpdateFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/JdkZlibDecoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/PooledUnsafeDirectByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/v5/Socks5CommandStatus.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/EmptyArrays.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/memcache/binary/DefaultBinaryMemcacheRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdySettingsFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelProgressiveFutureListener.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/handler/codec/socks/SocksRequestType.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/memcache/binary/AbstractBinaryMemcacheEncoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/util/concurrent/package-info.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/memcache/MemcacheObject.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/spdy/SpdySynStreamFrame.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/channel/ChannelFlushPromiseNotifier.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/channel/SingleThreadEventLoop.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/example/udt/echo/message/MsgEchoClientHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/example/factorial/FactorialClientInitializer.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/util/internal/logging/JdkLoggerFactory.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/udt/echo/rendezvousBytes/ByteEchoPeerBase.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/timeout/WriteTimeoutException.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/upload/HttpUploadClient.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/CompleteChannelFuture.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/package-info.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/BlockingOperationException.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/local/LocalEventLoopGroup.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/package-info.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/snoop/HttpSnoopClientHandler.java

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*

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/FailedChannelFuture.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/CodecException.java

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jar/io/netty/handler/ssl/NotSslRecordException.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/LastHttpContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/CharsetUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/DefaultHttpRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/HttpPostMultipartRequestDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v4/DefaultSocks4CommandRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/marshalling/MarshallerProvider.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/rtsp/RtspObjectEncoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/websocketx/server/WebSocketServerIndexPage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/proxy/HexDumpProxyFrontendHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/HttpData.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdySession.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v4/Socks4ServerDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpContentDecompressor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/MemoryAttribute.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/FixedRecvByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/sctp/SctpEchoServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/echo/EchoServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/channel/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/uptime/UptimeClient.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/stream/ChunkedNioStream.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/factorial/FactorialClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/serialization/ClassResolvers.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/bootstrap/Bootstrap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/logging/CommonsLoggerFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpResponseEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/group/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/timeout/WriteTimeoutHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/nio/NioEventLoop.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/bytes/ByteEchoServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/TextWebSocketFrame.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/EventExecutorGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/PoolChunkList.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/udt/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker13.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelPromise.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/factorial/FactorialClient.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/QueryStringEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/worldclock/WorldClockServerInitializer.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/stream/ChunkedNioFile.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/UnknownSocksResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/PooledByteBufAllocator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/multipart/HttpPostRequestEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/rtsp/RtspResponseStatuses.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/udt/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/PooledDirectByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/udt/echo/bytes/ByteEchoClientHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/SocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/VoidChannelPromise.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/oio/AbstractOioMessageChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/NetUtil.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/factorial/NumberEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHttpHeaders.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker00.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/ServerSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/SlicedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelOutboundHandlerAdapter.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/PongWebSocketFrame.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/UnpooledHeapByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/udt/echo/bytes/ByteEchoServerHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/multipart/HttpPostRequestDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/util/concurrent/EventExecutor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/oio/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/qotm/QuoteOfTheMomentClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/worldclock/WorldClockServerHandler.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/socksproxy/SocksServerInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/logging/InternalLogLevel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/qotm/QuoteOfTheMomentClient.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/rtsp/RtspVersions.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/DefaultHttpObject.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/serialization/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/qotm/QuoteOfTheMomentServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/ByteToMessageDecoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyHttpEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpObjectEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/logging/InternalLoggerFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/telnet/TelnetServerInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/rtsp/RtspRequestEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/package-info.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/LengthFieldPrepender.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/telnet/TelnetServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/upload/HttpUploadServerHandler.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/serialization/ClassResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/securechat/SecureChatClient.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/DefaultChannelPromise.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/MessageAggregator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/ContinuationWebSocketFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/socket/oio/OioServerSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/HttpResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/discard/DiscardClientHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socks/SocksResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/Signal.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/HttpContentDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/udt/echo/message/MsgEchoServerHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/ByteBufAllocator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/JZlibEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/MultithreadEventLoopGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http/snoop/HttpSnoopClientInitializer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/HttpHeaderDateFormat.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/socket/DatagramChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/CorruptedFrameException.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/serialization/SoftReferenceMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/AbstractChannelHandlerContext.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/concurrent/SingleThreadEventExecutor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/channel/socket/oio/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/rendezvous/MsgEchoPeerOne.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/telnet/TelnetClient.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/UnpooledUnsafeDirectByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/AbstractByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DefaultEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/AbstractByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpRequestEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/SucceededChannelFuture.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/oio/AbstractOioByteChannel.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/group/CombinedIterator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ByteBufUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v4/Socks4CommandResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/bootstrap/ServerBootstrap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/websocketx/server/WebSocketServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/worldclock/WorldClockServer.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/sctp/SctpOutboundByteStreamHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/serialization/ReferenceMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/CompressionException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/rendezvous/Config.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/group/DefaultChannelGroupFuture.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksAuthResponseDecoder.java

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*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/IllegalReferenceCountException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v5/DefaultSocks5CommandRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/InternetProtocolFamily.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/AbstractServerChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/group/ChannelGroupFutureListener.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/snoop/HttpSnoopServerInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/EventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ServerChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/DiskFileUpload.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/ZlibEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/message/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/rtsp/RtspObjectDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/EventLoop.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/AttributeMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/Attribute.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/udt/DefaultUdtChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/logging/LogLevel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5InitialResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/timeout/ReadTimeoutException.java
*

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/stream/ChunkedStream.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/MultithreadEventExecutorGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/PoolArena.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/securechat/SecureChatClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/cors/HttpCorsServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SslHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/FixedLengthFrameDecoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksInitResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/PrematureChannelClosureException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4CommandRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/multipart/HttpPostBodyUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/upload/HttpUploadServerInitializer.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/marshalling/LimitingByteInput.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/websocketx/server/WebSocketIndexPageHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocket00FrameEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/DefaultEventExecutor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksCommonUtils.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/bootstrap/AbstractBootstrap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/nio/NioDatagramChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/AttributeKey.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DefaultChannelPipeline.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelMetadata.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/DefaultHttpDataFactory.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/embedded/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/DefaultCookie.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/embedded/EmbeddedChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/telnet/TelnetClientInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelPipelineException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksInitResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/nio/NioDatagramChannelConfig.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/AbstractConstant.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/DecoderException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/securechat/SecureChatServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/securechat/SecureChatClientInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpObject.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/ZlibCodecFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/EventLoopException.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/stream/ChunkedWriteHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/logging/AbstractInternalLogger.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/snoop/HttpSnoopClient.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/ReplayingDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/HttpObjectDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/SwappedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/TimerTask.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/multipart/HttpDataFactory.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/JZlibDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/DefaultSocks5CommandResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/bootstrap/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/factorial/BigIntegerDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker07.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5InitialRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/echo/EchoClientHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/factorial/FactorialServerHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/MessageToMessageEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/DuplicatedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/sctp/oio/OioSctpServerChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker08.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/logging/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/ZlibDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/http/multipart/MixedAttribute.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/DiskAttribute.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelFuture.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/v5/DefaultSocks5PasswordAuthRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/stream/ChunkedFile.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpVersion.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/UnpooledDirectByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/DefaultHttpMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/websocketx/server/WebSocketFrameHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/SocksRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socks/v5/Socks5CommandRequest.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/socksproxy/RelayHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/oio/AbstractOioChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelOption.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/ByteToMessageCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/SocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/upload/HttpUploadClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/timeout/IdleStateHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/package-info.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4CommandType.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/local/LocalAddress.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/Timer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksAuthResponse.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/upload/HttpUploadClientInitializer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/string/StringDecoder.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelOutboundHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/UdtMessage.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksAuthRequest.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/StringUtil.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/BinaryWebSocketFrame.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/socksproxy/SocksServer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/discard/DiscardServer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/stream/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/websocketx/server/WebSocketServerInitializer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/handler/codec/serialization/CachingClassResolver.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/echo/EchoServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/worldclock/WorldClockClientInitializer.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/portunification/PortUnificationServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/uptime/UptimeClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/DefaultHttpContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DefaultEventLoop.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/HashedWheelTimer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/telnet/TelnetClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/EncoderException.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/marshalling/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/nio/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/message/MsgEchoClient.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DefaultFileRegion.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ThreadPerChannelEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/AbstractHttpData.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/timeout/IdleStateEvent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/file/FileServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/DefaultAttributeMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/QueryStringDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelFutureListener.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/embedded/EmbeddedEventLoop.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/qotm/QuoteOfTheMomentServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/UnpooledByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/CookieDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/AbstractDiskHttpData.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpHeaders.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/MessageToMessageDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/timeout/IdleState.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/MessageToMessageCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/AbstractMemoryHttpData.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketVersion.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/local/LocalChannelRegistry.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/PoolChunk.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/sctp/SctpEchoServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/logging/LoggingHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/rendezvousBytes/ByteEchoPeerTwo.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/udt/nio/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/base64/Base64Encoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/socksproxy/SocksServerHandler.java
*

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socks/SocksCmdRequestDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/serialization/WeakReferenceMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/sctp/nio/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/portunification/PortUnificationServer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/socket/oio/OioDatagramChannel.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/bytes/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/RecvByteBufAllocator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/socket/DatagramPacket.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/UnsupportedMessageTypeException.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/AbstractChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/multipart/InterfaceHttpPostRequestDecoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/SystemPropertyUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/concurrent/SucceededFuture.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/udt/echo/rendezvous/MsgEchoPeerBase.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http/upload/HttpUploadServer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/WebSocketHandshakeException.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/rtsp/RtspResponseDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/nio/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/channel/embedded/EmbeddedSocketAddress.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/multipart/InternalAttribute.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/rtsp/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/oio/OioEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelPromiseNotifier.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/objectecho/ObjectEchoServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/nio/AbstractNioChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/udt/echo/rendezvous/MsgEchoPeerTwo.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/string/package-info.java
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jar/io/netty/handler/codec/http/Cookie.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/DefaultEventExecutorGroup.java
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jar/io/netty/channel/ChannelPipeline.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/PoolThreadCache.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/oio/OioSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ByteBufInputStream.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpContentEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/proxy/HexDumpProxyInitializer.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/multipart/InterfaceHttpData.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/DefaultChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/proxy/HexDumpProxy.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/file/HttpStaticFileServerInitializer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/nio/NioSocketChannel.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksCmdResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksMessageEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socks/SocksCmdRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/base64/Base64Decoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollDatagramChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/HttpClientCodec.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/multipart/MemoryFileUpload.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/rtsp/RtspResponseEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/stream/ChunkedInput.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/helloworld/HttpHelloWorldServer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/util/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/ZlibWrapper.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/local/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/CompositeByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/group/ChannelGroupFuture.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/compression/ZlibUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/rtsp/RtspHeaders.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshakerFactory.java
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Found in path(s):

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
jar/io/netty/util/DomainWildcardMappingBuilder.java  
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
jar/io/netty/example/stomp/websocket/StompVersion.java  
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jar/io/netty/handler/ssl/SslHandshakeTimeoutException.java  
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
jar/io/netty/buffer/search/package-info.java  
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
jar/io/netty/example/haproxy/HAProxyHandler.java  
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-  
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jar/io/netty/example/haproxy/HAProxyServer.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/stomp/websocket/StompWebSocketProtocolCodec.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/address/ResolveAddressHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/haproxy/HAProxyMessageEncoder.java
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No license file was found, but licenses were detected in source scan.

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*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerFrameDeflateDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/stomp/package-info.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsServerAddresses.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttIdentifierRejectedException.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/spdy/client/SpdyClientInitializer.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/Lz4Constants.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyFrameCodec.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/proxy/ProxyConnectException.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SniHandler.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/haproxy/package-info.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsQueryContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtensionHandshaker.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttSubscribeMessage.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttConnectMessage.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/Bzip2Decoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/AbstractSocksMessage.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/spdy/client/SpdyFrameLogger.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/unix/IovArray.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4ServerEncoder.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockZlibDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/xml/XmlContent.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/dns/DnsNameResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslEngine.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/proxy/Socks5ProxyHandler.java
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 jar/io/netty/channel/unix/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/Java7SslParametersUtils.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Bzip2BitReader.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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 jar/io/netty/resolver/NoopAddressResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/stomp/StompSubframeAggregator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/InternalThreadLocalMap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/SimpleNameResolver.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlComment.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/websocketx/benchmarkserver/WebSocketServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpHeaderNames.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2FrameLogger.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ipfilter/RuleBasedIpFilter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlElement.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlNamespace.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/stomp/StompSubframe.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/extensions/compression/WebSocketServerCompressionHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/JdkAlpnApplicationProtocolNegotiator.java
*

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtensionHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/CipherSuiteConverter.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttPublishVariableHeader.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/JdkDefaultApplicationProtocolNegotiator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateFrameServerExtensionHandshaker.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/LzfDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtension.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/spdy/client/SpdyClient.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttConnectVariableHeader.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Bzip2BlockCompressor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/AddressResolverGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Bzip2Rand.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/Mapping.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/xml/XMLProcessingInstruction.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/EpollTcpInfo.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslX509Certificate.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ipfilter/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socksx/v4/Socks4Message.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ipfilter/IpFilterRule.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/JdkSslContext.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/handler/codec/http/ServerCookieEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Lz4FrameEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socksx/v4/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/ApplicationProtocolUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/stomp/StompConstants.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttConnAckMessage.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttSubAckMessage.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Bzip2BlockDecompressor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttConnectReturnCode.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/JettyNpnSslEngine.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/haproxy/HAProxyConstants.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/xml/XmlElementStart.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttUnsubscribePayload.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttUnsubscribeMessage.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/compression/WebSocketClientCompressionHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/rtsp/RtspHeaderNames.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/xml/XmlElementEnd.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketServerExtensionHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslEngineMap.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/JdkSslEngine.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/xml/XmlCharacters.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/DecoderResultProvider.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Lz4FrameDecoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http/websocketx/benchmarkserver/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/FastThreadLocal.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/PromiseAggregator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitWriter.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockRawDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/NameResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/memcache/binary/MemcacheClient.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5CommandRequestDecoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SslUtils.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/stomp/StompFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateClientExtensionHandshaker.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslServerSessionContext.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttFixedHeader.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5InitialRequestDecoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/xml/XMLAttribute.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/JdkSslServerContext.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/stomp/StompSubframeEncoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/NativeDatagramPacketArray.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5InitialResponseDecoder.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/package-info.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2OutboundFrameLogger.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/HttpChunkedInput.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/package-info.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/xml/XmlEntityReference.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/Bzip2HuffmanStageDecoder.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslSessionStats.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/JdkSslClientContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttPubAckMessage.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/proxy/Socks4ProxyHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateDecoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/server/Http2Server.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslNpnApplicationProtocolNegotiator.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/FastLzFrameEncoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateServerExtensionHandshaker.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/PromiseNotifier.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/AsciiHeadersEncoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/CipherSuiteFilter.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/MessageAggregationException.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlCdata.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/AbstractEventLoop.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/spdy/server/SpdyServerHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlDocumentStart.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/mqtt/MqttTopicSubscription.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/stomp/StompClient.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5CommandResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/stomp/DefaultStompHeaders.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsAddressResolverGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SslProvider.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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jar/io/netty/handler/ssl/OpenSslServerContext.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/NoopAddressResolverGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/mqtt/MqttUnsubAckMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/epoll/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyFrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SslContext.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/stomp/StompCommand.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/stomp/LastStompContentSubframe.java
*

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketServerExtensionHandshaker.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/proxy/HttpProxyHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/json/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/compression/Bzip2MTFAndRLE2StageEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/IntegerHolder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/proxy/ProxyConnectionEvent.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslDefaultApplicationProtocolNegotiator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttMessageFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/haproxy/HAProxyCommand.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/ReflectiveChannelFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/util/BouncyCastleSelfSignedCertGenerator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttCodecUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/stomp/DefaultStompContentSubframe.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/ApplicationProtocolConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/mqtt/MqttSubAckPayload.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/stomp/StompClientHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/helloworld/server/HelloWorldHttp1Handler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socksx/v4/AbstractSocks4Message.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/UnpaddedInternalThreadLocalMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtension.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/stomp/StompHeaders.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/ResourceLeakHint.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/channel/epoll/AbstractEpollChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/stomp/DefaultStompHeadersSubframe.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http/websocketx/benchmarkserver/WebSocketServerInitializer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/unix/UnixChannelOption.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/epoll/Epoll.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/embedded/EmbeddedChannelId.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/mqtt/MqttUnacceptableProtocolVersionException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/haproxy/HAProxyProtocolException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateFrameClientExtensionHandshaker.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/PemReader.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/proxy/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/xml/XmlDTD.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/JettyAlpnSslEngine.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanAllocator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpHeadersEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/NativeLibraryLoader.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/spdy/SpdyProtocolException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ipfilter/UniqueIpFilter.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/stomp/DefaultStompFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/spdy/client/HttpResponseClientHandler.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/stomp/StompHeadersSubframe.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollChannelOption.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttVersion.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttPublishMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/spdy/server/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/AbstractSocks5Message.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/FastLz.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthRequestDecoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/ClientCookieEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/spdy/client/SpdyClientStreamIdHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/mqtt/MqttDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/JdkNpnApplicationProtocolNegotiator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/HttpStatusClass.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedDecoder.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/PooledHeapByteBuf.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/FastThreadLocalThread.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/DefaultChannelHandlerContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/UnsafeHeapSwappedByteBuf.java

*

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/UnsafeDirectSwappedByteBuf.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/CleanerJava6.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/svm/CleanerJava6Substitution.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker00.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2MultiplexHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/mqtt/heartBeat/MqttHeartBeatBroker.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/internal/tcnative/CertificateVerifierTask.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/CloseWebSocketFrame.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/svm/UnsafeRefArrayAccessSubstitution.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/mqtt/heartBeat/MqttHeartBeatClientHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/DnsResponseDecoder.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/macos/DnsResolver.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/ThreadExecutorMap.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/macos/MacOSDnsServerAddressStreamProvider.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/DnsCodecUtil.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/internal/tcnative/SSLTask.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelHandlerMask.java

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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SslMasterKeyHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/address/DynamicAddressConnectHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/CorruptedWebSocketFrameException.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshakerFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/internal/tcnative/SSLPrivateKeyMethodDecryptTask.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/address/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocket00FrameDecoder.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/MaxCapacityQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/compression/Lz4XXHash32.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/Hidden.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/EventLoopTaskQueueFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionFilter.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/KeyManagerFactoryWrapper.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/TcpDnsQueryEncoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/PseudoRandomFunction.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker13.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/svm/PlatformDependentSubstitution.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/PreferredAddressTypeComparator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/util/SimpleKeyManagerFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/ObjectPool.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/DefaultHttp2SettingsAckFrame.java
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*/
/**
* Enumeration of supported Base64 dialects.
* <p>
* The internal lookup tables in this class has been derived from
* Robert
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*/

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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/helloworld/frame/server/Http2Server.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/smtp/SmtpResponse.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http2/DefaultHttp2SettingsFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/NativeStaticallyReferencedJniMethods.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/dns/RoundRobinDnsAddressResolverGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/bootstrap/ServerBootstrapConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/smtp/SmtpRequestEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslCertificateException.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http2/Http2DataFrame.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/kqueue/KQueueEventLoop.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/string/LineSeparator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/concurrent/NonStickyEventExecutorGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http2/AbstractHttp2StreamFrame.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/WriteBufferWaterMark.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/smtp/DefaultSmtpRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/kqueue/KQueueServerChannelConfig.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/logging/Log4J2LoggerFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsOptPseudoRecord.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/ConstantTimeUtils.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/kqueue/KQueueDomainSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/kqueue/KQueueServerDomainSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/DuplexChannel.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/kqueue/KQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/AbstractPooledDerivedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/Http2FrameStreamVisitor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http2/InboundHttpToHttp2Adapter.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/smtp/SmtpRequest.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/kqueue/KQueueRecvByteAllocatorHandle.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/PromiseNotificationUtil.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/DefaultSelectStrategy.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/NativeLibraryUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/unix/SocketWritableByteChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/kqueue/KQueueEventArray.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/multiplex/server/Http2Server.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/smtp/SmtpContent.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/kqueue/KQueueDatagramChannel.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/CodecOutputList.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/PemValue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/smtp/SmtpResponseDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/kqueue/Native.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslContext.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

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jar/io/netty/resolver/dns/NoopDnsCache.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/AcceptFilter.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/PromiseCombiner.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/KQueueChannelOption.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/unix/ErrorsStaticallyReferencedJniMethods.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/compression/ByteBufChecksum.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/AdvancedLeakAwareCompositeByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/util/X509TrustManagerWrapper.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/logging/Log4J2Logger.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/DomainNameMappingBuilder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/unix/PeerCredentials.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/KQueueServerSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2FrameStreamException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DnsPtrRecord.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/ChannelOutboundInvoker.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/KQueueDomainSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/IntSupplier.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DefaultDnsCache.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/haproxy/HAProxySSLTLV.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/BsdSocket.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/Java8SslUtils.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DnsOptEcsRecord.java

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*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/unix/LimitsStaticallyReferencedJniMethods.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2HeadersFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/RejectedExecutionHandlers.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2ChannelDuplexHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/concurrent/UnorderedThreadPoolEventExecutor.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/PreferHeapByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/KQueueServerSocketChannelConfig.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2PingFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2HeadersFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DefaultDnsPtrRecord.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/smtp/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2GoAwayFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/DelegatingSslContext.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/AbstractUnpooledSlicedByteBuf.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/kqueue/KQueueEventLoopGroup.java
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*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/logging/CommonsLogger.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/logging/Log4JLogger.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/logging/InternalLogger.java

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*/

/**

* Utility class for { @link ByteBuffer } that encodes and decodes to and from
* [Base64](http://en.wikipedia.org/wiki/Base64) notation.

* <p>

*

The encoding and decoding algorithm in this class has been derived from

* [Robert Harder's Public Domain](http://iharder.sourceforge.net/current/java/base64/)
* Base64 Encoder/Decoder.

*/

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/base64/Base64.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket13FrameEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket07FrameEncoder.java
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*/
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* Adaptation of <http://bjoern.hoehrmann.de/utf-8/decoder/dfa/>
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SpscUnboundedArrayQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/InternalAPI.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingSetInt.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SupportsIterator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseSpscLinkedAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/BaseMpscLinkedArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/LinkedQueueAtomicNode.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/ConcurrentAutoTable.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/BaseSpscLinkedArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpscUnboundedAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscChunkedArrayQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingIdentityHashMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SpscLinkedQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/IndexedQueueSizeUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscLinkedQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java
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 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpscChunkedAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/spec/ConcurrentQueueSpec.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeRefArrayAccess.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/ConcurrentCircularArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/QueueFactory.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/AbstractEntry.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/spec/Ordering.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscCompoundQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedXaddChunk.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpscLinkedAtomicQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscBlockingConsumerArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MessagePassingQueueUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/Pow2.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingHashMapLong.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeLongArrayAccess.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingHashSet.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SpmcArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SpscGrowableArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedXaddArrayQueue.java
 *

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeJvmInfo.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingHashMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpmcAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/RangeUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeAccess.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCGrowbleAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpscGrowbleArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/spec/Preference.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/BaseLinkedQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/AtomicQueueFactory.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MessagePassingQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/LinkedQueueNode.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCChunkedArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcUnboundedXaddChunk.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/shaded/org/jctools/util/PortableJvmInfo.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/CleanerJava9.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/Cleaner.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/concurrent/FastThreadLocalRunnable.java

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Stomp Over WebSocket <http://www.jmesnil.net/stomp-websocket/doc/> | Apache License V2.0

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/stomp/websocket/stomp.js

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* under the License.
*/
/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/epoll/EpollServerSocketChannelConfig.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/AbstractCoalescingBufferQueue.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2ConnectionPrefaceAndSettingsFrameWrittenEvent.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/META-INF/maven/io.netty/netty-all/pom.xml

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/ByteBufAllocatorMetricProvider.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/TraceDnsQueryLifeCycleObserverFactory.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/PriorityQueue.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/bootstrap/FailedChannel.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/ReadOnlyHttpHeaders.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/LongAdderCounter.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownException.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/uptime/UptimeServerHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/resolver/dns/MultiDnsServerAddressStreamProvider.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/ocsp/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/Conscrypt.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/NoopDnsQueryLifecycleObserver.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2UnknownFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/UncheckedBooleanSupplier.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/TraceDnsQueryLifecycleObserver.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/BiDnsQueryLifecycleObserver.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/oio/OioDatagramChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/ObjectCleaner.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/HostsFileEntries.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/internal/ChannelUtils.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SniCompletionEvent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2StreamChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/ByteBufAllocatorMetric.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/ConscryptAlpnSslEngine.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/ChannelInputShutdownReadComplete.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2FrameCodecBuilder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/OptionalSslHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpServerExpectContinueHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2StreamChannelBootstrap.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/NoopDnsQueryLifecycleObserverFactory.java

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*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/ReflectionUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/BiDnsQueryLifecycleObserverFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/EmptyPriorityQueue.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsServerAddressStreamProviders.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsServerAddressStreamProvider.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/oio/DefaultOioDatagramChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketScheme.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/PendingBytesTracker.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/internal/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/PooledByteBufAllocatorMetric.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DefaultDnsServerAddressStreamProvider.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsQueryLifecycleObserver.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/SuppressForbidden.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/JdkAlpnSslUtils.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/mqtt/MqttMessageBuilders.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/socket/ChannelOutputShutdownEvent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SslCompletionEvent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/UnixResolverDnsServerAddressStreamProvider.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2FrameStreamEvent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SslClientHelloHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/SslCloseCompletionEvent.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/SequentialDnsServerAddressStreamProvider.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/ResolvedAddressTypes.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsCacheEntry.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2StreamChannelId.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/SniHostNameMatcher.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsNameResolverTimeoutException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/UniSequentialDnsServerAddressStreamProvider.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/unix/UnixChannelUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/Http2MultiplexCodecBuilder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DelegatingChannelPromiseNotifier.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/AbstractSniHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsQueryLifecycleObserverFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/NettyRuntime.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/SingletonDnsServerAddressStreamProvider.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/DefaultHttp2UnknownFrame.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/uptime/UptimeServer.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/nio/SelectedSelectionKeySetSelector.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/CleartextHttp2ServerUpgradeHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/JdkAlpnSslEngine.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/logging/LocationAwareSlf4JLogger.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/NativeStaticallyReferencedJniMethods.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/RedisMessageType.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/IntegerRedisMessage.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/DefaultLastBulkStringRedisContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/RedisCodecUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/AbstractStringRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/ErrorRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/RedisMessagePool.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/redis/RedisClient.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/LastBulkStringRedisContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/BulkStringRedisContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http2/helloworld/frame/server/HelloWorldHttp2Handler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/RedisCodecException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/FullBulkStringRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/SimpleStringRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/redis/RedisDecoder.java
*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/RedisBulkStringAggregator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/frame/server/Http2OrHttpHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/multiplex/server/Http2OrHttpHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/BulkStringHeaderRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/FixedRedisMessagePool.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/DefaultBulkStringRedisContent.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/RedisArrayAggregator.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/ArrayRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/RedisConstants.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/ArrayHeaderRedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/RedisMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/redis/RedisEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/multiplex/server/HelloWorldHttp2Handler.java
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jar/io/netty/example/ocsp/OcspClientExample.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/ocsp/Digester.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/ocsp/OcspServerExample.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/ocsp/OcspRequestBuilder.java
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*

/* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/util/internal/logging/MessageFormatter.java

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jar/io/netty/channel/sctp/nio/NioSctpServerChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/SctpMessage.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/SctpChannel.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/SctpNotificationHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/traffic/AbstractTrafficShapingHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/SctpServerChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/worldclock/WorldClockProtocol.proto
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/DefaultSctpChannelConfig.java
```



```
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/SctpChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/SctpServerChannel.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/sctp/nio/NioSctpChannel.java
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```

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```

```
*/
```

```
/**
```

```
* Handles an I/O event or intercepts an I/O operation, and forwards it to its next handler in
* its { @link ChannelPipeline }.
```

```
*
```

```
* <h3>Sub-types</h3>
```

```
* <p>
```

```
* { @link ChannelHandler } itself does not provide many methods, but you usually have to implement one of its
subtypes:
```

```
* <ul>
```

```
* <li>{ @link
```

```
ChannelInboundHandler } to handle inbound I/O events, and</li>
```

```
* <li>{ @link ChannelOutboundHandler } to handle outbound I/O operations.</li>
```

```
* </ul>
```

```
* </p>
```

```
* <p>
```

```
* Alternatively, the following adapter classes are provided for your convenience:
```

```
* <ul>
```

```
* <li>{ @link ChannelInboundHandlerAdapter } to handle inbound I/O events,</li>
```

```
* <li>{ @link ChannelOutboundHandlerAdapter } to handle outbound I/O operations, and</li>
```

```
* <li>{ @link ChannelDuplexHandler } to handle both inbound and outbound events</li>
```

```
* </ul>
```

```
* </p>
```

```
* <p>
```

```
* For more information, please refer to the documentation of each subtype.
```

```

* </p>
*
* <h3>The context object</h3>
* <p>
* A { @link ChannelHandler } is provided with a { @link ChannelHandlerContext }
* object. A { @link ChannelHandler } is supposed to interact with the
* { @link ChannelPipeline } it belongs to via a context object. Using the
* context object, the { @link ChannelHandler } can pass events upstream or
* downstream, modify the pipeline dynamically,
* or store the information
* (using { @link AttributeKey }s) which is specific to the handler.
*
* <h3>State management</h3>
*
* A { @link ChannelHandler } often needs to store some stateful information.
* The simplest and recommended approach is to use member variables:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* public class DataServerHandler extends { @link SimpleChannelInboundHandler } &lt; Message &gt; {
*
*     <b>private boolean loggedIn;</b>
*
*     { @code @Override }
*     public void channelRead0({ @link ChannelHandlerContext } ctx, Message message) {
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) message);
*             <b>loggedIn = true;</b>
*         } else (message instanceof GetDataMessage) {
*             if (<b>loggedIn</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) message));
*             } else {
*                 fail();
*             }
*         }
*     }
* }
* ...
* }
* </pre>
*
* Because the handler instance has a state variable which is dedicated to
* one connection, you have to create a new handler instance for each new
* channel to avoid a race condition where a unauthenticated client can get
* the confidential information:
* <pre>
* // Create a new handler instance per channel.
* // See { @link ChannelInitializer#initChannel(Channel) }.

```

```

* public class DataServerInitializer extends { @link ChannelInitializer}&lt;&gt;{ @link Channel}&gt; {
*     { @code @Override}
*     public void initChannel({ @link Channel} channel) {
*         channel.pipeline().addLast("handler", <b>new DataServerHandler()</b>);
*     }
* }
*
* </pre>
*
* <h4>Using { @link AttributeKey}s</h4>
*
* Although it's recommended to use member variables to store the state of a
* handler, for some reason you might not want to create many handler instances.
* In such a case, you can use { @link AttributeKey}s which is provided by
* { @link ChannelHandlerContext}:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* { @code @Sharable}
* public class DataServerHandler extends { @link SimpleChannelInboundHandler}&lt;&gt;Message&gt; {
*     private final { @link AttributeKey}&lt;&gt;{ @link Boolean}&gt; auth =
*         { @link AttributeKey#valueOf(String) AttributeKey.valueOf("auth")};
*
*     { @code @Override}
*     public void channelRead({ @link ChannelHandlerContext} ctx, Message message) {
*         { @link Attribute}&lt;&gt;{ @link Boolean}&gt; attr = ctx.attr(auth);
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) o);
*             <b>attr.set(true)</b>;
*         } else (message instanceof GetDataMessage) {
*             if (<b>Boolean.TRUE.equals(attr.get())</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) o));
*             } else {
*                 fail();
*             }
*         }
*     }
* }
* ...
* </pre>
*
* Now that the state
* of the handler is attached to the { @link ChannelHandlerContext}, you can add the
* same handler instance to different pipelines:
* <pre>
* public class DataServerInitializer extends { @link ChannelInitializer}&lt;&gt;{ @link Channel}&gt; {
*

```

```

* private static final DataServerHandler <b>SHARED</b> = new DataServerHandler();
*
* { @code @Override }
* public void initChannel({ @link Channel } channel) {
*     channel.pipeline().addLast("handler", <b>SHARED</b>);
* }
* }
* </pre>

```

* <h4>The { @code @Sharable } annotation</h4>

* <p>

* In the example above which used an { @link AttributeKey },
 * you might have noticed the { @code @Sharable } annotation.

* <p>

* If a { @link ChannelHandler } is annotated with the { @code @Sharable }
 * annotation, it means you can create an instance of the handler just once and
 * add it to one or more { @link ChannelPipeline }s multiple times without
 * a race condition.

* <p>

* If this annotation is not specified, you have to create
 a new handler
 * instance every time you add it to a pipeline because it has unshared state
 * such as member variables.

* <p>

* This annotation is provided for documentation purpose, just like
 * the JCIP annotations.

*

* <h3>Additional resources worth reading</h3>

* <p>

* Please refer to the { @link ChannelHandler }, and
 * { @link ChannelPipeline } to find out more about inbound and outbound operations,
 * what fundamental differences they have, how they flow in a pipeline, and how to handle
 * the operation in your application.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/ChannelHandler.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/internal/ResourcesUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codecs/redis/InlineCommandRedisMessage.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/util/ByteProcessorUtils.java
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jar/io/netty/handler/codecs/http/websocketx/WebSocket08FrameDecoder.java
```

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocket07FrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocket13FrameDecoder.java
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- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/cookie/ClientCookieEncoder.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolAccessor.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/HttpScheme.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/HeadersUtils.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/ShuffledDnsServerAddressStream.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/AddressResolver.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/DnsSection.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/HostsFileParser.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/SingletonDnsServerAddresses.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollMode.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsServerAddressStream.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufVarint32LengthFieldPrepender.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/AbstractDnsRecord.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/DefaultDnsRawRecord.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/ProtocolDetectionState.java
- *
- /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslSessionTicketKey.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/rtsp/RtspDecoder.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/SocksPortUnificationServerHandler.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/InetAddressResolver.java
- * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/buffer/HeapByteBufUtil.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5AddressDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollDomainSocketChannelConfig.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/cookie/ServerCookieEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/pool/AbstractChannelPoolMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/cookie/CookieHeaderNames.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/unix/FileDescriptor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollServerChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/DefaultMaxBytesRecvByteBufAllocator.java
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 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufVarint32FrameDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/ProtocolDetectionResult.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/DefaultAddressResolverGroup.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/SequentialDnsServerAddressStream.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/dns/DnsRecordEncoder.java
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 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/pool/ChannelPoolHandler.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/unix/UnixChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/helloworld/server/HelloWorldHttp2HandlerBuilder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/cookie/CookieUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/http/cookie/ClientCookieDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/example/http2/tiles/Launcher.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SslContextBuilder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-


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jar/io/netty/channel/pool/ChannelPool.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/pool/AbstractChannelPoolHandler.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorStreamingHandle.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/HttpExpectationFailedEvent.java
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jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/DefaultMaxMessagesRecvByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http/cookie/ServerCookieDecoder.java
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/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DnsResponse.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/UnpooledUnsafeHeapByteBuf.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DnsRecordType.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/epoll/TcpMd5Util.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
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jar/io/netty/handler/codec/dns/DatagramDnsQuery.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/buffer/UnsafeByteBufUtil.java
*
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jar/io/netty/util/concurrent/ThreadProperties.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/example/http2/tiles/ImageCache.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DnsResponseCode.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/DefaultNameResolver.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/dns/DnsMessageUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DnsNameResolverException.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/ClientAuth.java
*

```

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/pool/ChannelHealthChecker.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/UnpooledDuplicatedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/AbstractEpollStreamChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/cookie/DefaultCookie.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/tiles/Html.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/ServerDomainSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DatagramDnsResponseEncoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/protobuf/ProtobufDecoderNano.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/PoolSubpageMetric.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/AbstractUnsafeSwappedByteBuf.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/sctp/multihoming/SctpMultiHomingEchoClient.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsQuery.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/EpollEventArray.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/PriorityQueueNode.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/PooledUnsafeHeapByteBuf.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/concurrent/AbstractScheduledEventExecutor.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/dns/DnsNameResolverBuilder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DefaultDnsQuestion.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DatagramDnsResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http2/AbstractHttp2ConnectionHandlerBuilder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DatagramDnsResponseDecoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DefaultDnsRecordEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/channel/MaxMessagesRecvByteBufAllocator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/tiles/FallbackRequestHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/cookie/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/HashingStrategy.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/cookie/Cookie.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/DomainSocketAddress.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsRawRecord.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/DomainSocketChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/CombinedHttpHeaders.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/InetSocketAddressResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/tiles/Http1RequestHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/AbstractEpollServerChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/pool/SimpleChannelPool.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/MaxBytesRecvByteBufAllocator.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/EpollServerDomainSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/EmptyHttpHeaders.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/DomainSocketReadMode.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DefaultDnsQuery.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/PoolArenaMetric.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsQuestion.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/DomainSocketChannel.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/HostsFileEntriesResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/Errors.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/rtsp/RtspEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/pool/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/CookieUtil.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DefaultDnsResponse.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/ApplicationProtocolNames.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsOpCode.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/AsyncMapping.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DefaultDnsRecordDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/OpenSslJavaxX509Certificate.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/pool/ChannelPoolMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/tiles/Http2Server.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/AbstractAddressResolver.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/AbstractDnsMessage.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/LongCounter.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DatagramDnsQueryDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/DatagramSocketAddress.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/Http2ConnectionHandlerBuilder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/dns/DnsQueryContextManager.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/dns/RotationalDnsServerAddresses.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/EpollDomainSocketChannel.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

jar/io/netty/buffer/PoolChunkMetric.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/package-info.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/NativeInetAddress.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/DomainMappingBuilder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DatagramDnsQueryEncoder.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/EpollRecvByteAllocatorHandle.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/buffer/PoolChunkListMetric.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/pool/FixedChannelPool.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/ssl/ApplicationProtocolNegotiationHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/sctp/multihoming/SctpMultiHomingEchoServer.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/unix/Socket.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/util/internal/DefaultPriorityQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/socksx/v5/Socks5AddressEncoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsRecordDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsRecord.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/dns/DefaultDnsServerAddresses.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/channel/epoll/EpollChannelConfig.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/example/http2/tiles/Http2RequestHandler.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/resolver/CompositeNameResolver.java
 *
 /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http2/CharSequenceMap.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/HttpUtil.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/http/cookie/CookieDecoder.java
 * /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
 jar/io/netty/handler/codec/dns/DnsMessage.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/UnsupportedValueConverter.java

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*/

/**

* Set the { @code TCP_MD5SIG } option on the socket. See { @code linux/tcp.h } for more details.
* Keys can only be set on, not read to prevent a potential leak, as they are confidential.
* Allowing them being read would mean anyone with access to the channel could get them.

*/

/**

* Set the { @code TCP_QUICKACK } option on the socket. See TCP_QUICKACK
* for more details.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/epoll/EpollSocketChannelConfig.java

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*/

// <https://tools.ietf.org/html/rfc7540#section-8.1.2.2> makes a special exception for TE

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HttpConversionUtil.java

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*/

/**

* A decoder that splits the received { @link ByteBuf}s dynamically by the
* value of the length field in the message. It is particularly useful when you
* decode a binary message which has an integer header field that represents the
* length of the message body or the whole message.

*

<p>

* { @link LengthFieldBasedFrameDecoder } has many configuration parameters so
* that it can decode any message with a length field, which is often seen in
* proprietary client-server protocols. Here are some example that will give
* you the basic idea on which option does what.

*

* <h3>2 bytes length field at offset 0, do not strip header</h3>

*

* The value of the length field in this example is <tt>12 (0x0C)</tt> which
* represents the length of "HELLO, WORLD". By default, the decoder assumes
* that the length field represents the number of the bytes that follows the
* length field. Therefore, it can be decoded with the simplistic parameter
* combination.

* <pre>

* lengthFieldOffset = 0

* lengthFieldLength = 2

* lengthAdjustment = 0

```

* initialBytesToStrip = 0 (= do not strip header)
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+      +-----+-----+
* | Length | Actual Content
* |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" |   | 0x000C | "HELLO, WORLD" |
* +-----+-----+      +-----+-----+
* </pre>

```

* <h3>2 bytes length field at offset 0, strip header</h3>

* Because we can get the length of the content by calling
* { @link ByteBuf#readableBytes() }, you might want to strip the length
* field by specifying <tt>initialBytesToStrip</tt>. In this example, we
* specified <tt>2</tt>, that is same with the length of the length field, to
* strip the first two bytes.

```

* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* <b>initialBytesToStrip</b> = <b>2</b> (= the length of the Length field)

```

```

* BEFORE DECODE (14 bytes)    AFTER DECODE (12 bytes)
* +-----+-----+      +-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" |   | "HELLO, WORLD" |
* +-----+-----+      +-----+
* </pre>

```

* <h3>2 bytes length field at offset 0, do not strip header, the length field
* represents the length of the whole message</h3>

* In most cases, the length field represents the length of the message body
* only, as shown in the previous examples. However, in some protocols, the
* length field represents the length of the whole message, including the
* message header. In such a case, we specify a non-zero
* <tt>lengthAdjustment</tt>. Because the length value in this example message
* is always greater than the body length by <tt>2</tt>, we specify <tt>-2</tt>
* as <tt>lengthAdjustment</tt> for compensation.

```

* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-2</b> (= the length of the Length field)
* initialBytesToStrip = 0

```

```

* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+      +-----+-----+

```



```

* | Length | Actual Content |---->| Length | Actual
Content |
* | 0x000E | "HELLO, WORLD" | | 0x000E | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>
*
* <h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>
*
* The following message is a simple variation of the first example. An extra
* header value is prepended to the message. <tt>lengthAdjustment</tt> is zero
* again because the decoder always takes the length of the prepended data into
* account during frame length calculation.
* <pre>
* <b>lengthFieldOffset</b> = <b>2</b> (= the length of Header 1)
* <b>lengthFieldLength</b> = <b>3</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+ +-----+-----+-----+
* | Header 1 | Length | Actual Content |---->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" | |
  0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+ +-----+-----+-----+
* </pre>
*
* <h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>
*
* This is an advanced example that shows the case where there is an extra
* header between the length field and the message body. You have to specify a
* positive <tt>lengthAdjustment</tt> so that the decoder counts the extra
* header into the frame length calculation.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* <b>lengthAdjustment</b> = <b>2</b> (= the length of Header 1)
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+ +-----+-----+-----+
* | Length | Header 1 | Actual Content |---->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO,
  WORLD" |
* +-----+-----+-----+ +-----+-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,
* strip the first header field and the length field</h3>

```

```

*
* This is a combination of all the examples above. There are the prepended
* header before the length field and the extra header after the length field.
* The prepended header affects the <tt>lengthFieldOffset</tt> and the extra
* header affects the <tt>lengthAdjustment</tt>. We also specified a non-zero
* <tt>initialBytesToStrip</tt> to strip the length field and the prepended
* header from the frame. If you don't want to strip the prepended header, you
* could specify <tt>0</tt> for <tt>initialBytesToSkip</tt>.
* <pre>
* lengthFieldOffset = 1 (= the length of HDR1)
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>1</b> (= the length of HDR2)
* <b>initialBytesToStrip</b> = <b>3</b> (= the length of HDR1 + LEN)
*
* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,
* strip the first header field and the length field, the length field
* represents the length of the whole message</h3>
*
* Let's give another twist to the previous example. The only difference from
* the previous example is that the length field represents the length of the
* whole message instead of the message body, just like the third example.
* We have to count the length of HDR1 and Length into <tt>lengthAdjustment</tt>.
* Please note that we don't need to take the length of HDR2 into account
* because
the length field already includes the whole header length.
* <pre>
* lengthFieldOffset = 1
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-3</b> (= the length of HDR1 + LEN, negative)
* <b>initialBytesToStrip</b> = <b>3</b>
*
* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+
* </pre>
* @see LengthFieldPrepender
*/

```

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java

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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/sctp/SctpMessageCompletionHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/sctp/package-info.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/nio/NioUdtByteRendezvousChannel.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/nio/NioUdtProvider.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/nio/NioUdtByteConnectorChannel.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/UdtChannel.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/nio/NioUdtMessageAcceptorChannel.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/traffic/TrafficCounter.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/udt/nio/NioUdtAcceptorChannel.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/codec/sctp/SctpInboundByteStreamHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

```
jar/io/netty/handler/traffic/package-info.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/udt/nio/NioUdtMessageConnectorChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/udt/nio/NioUdtMessageRendezvousChannel.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/sctp/SctpMessageToMessageDecoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/channel/udt/nio/NioUdtByteAcceptorChannel.java
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```
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackHuffmanDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
```

```
jar/io/netty/handler/codec/http2/HpackUtil.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackDecoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackHeaderField.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackEncoder.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackHuffmanEncoder.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackDynamicTable.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/codec/http2/HpackStaticTable.java
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* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/DefaultAuthoritativeDnsServerCache.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/OpenSslKeyMaterialProvider.java
*
/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/OpenSslX509KeyManagerFactory.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/OpenSslPrivateKey.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/AuthoritativeDnsServerCache.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/internal/tcnative/CertificateCallback.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/resolver/dns/AuthoritativeDnsServerCacheAdapter.java
```

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/unix/PreferredDirectByteBufAllocator.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslKeyMaterial.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslCachingKeyMaterialProvider.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsRecordResolveContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DirContextUtils.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/SignatureAlgorithmConverter.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsCnameCache.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/SimpleUserEventChannelHandler.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/socket/nio/NioChannelOption.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslX509TrustManagerWrapper.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsAddressDecoder.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/channel/unix/Buffer.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/NoopAuthoritativeDnsServerCache.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslSession.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/Cache.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/NameServerComparator.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslCachingX509KeyManagerFactory.java

*

/opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/handler/ssl/OpenSslTlsv13X509ExtendedTrustManager.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DnsAddressResolveContext.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/DefaultDnsCnameCache.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-jar/io/netty/resolver/dns/NoopDnsCnameCache.java

* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-

```
jar/io/netty/util/internal/SuppressJava6Requirement.java
* /opt/ws_local/PERMITS_SQL/1073709946_1598983444.54/0/netty-all-4-1-49-final-sources-
jar/io/netty/handler/ssl/ExtendedOpenSslSession.java
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1.77 jackson-databind 2.10.1

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1.79 swagger-core 1.6.2

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1.81 jctools-core 3.1.0

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/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCLinkedListAtomicQueue.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpMCArrayQueue.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/AbstractEntry.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpmcUnboundedXaddChunk.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscChunkedArrayQueue.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashMapLong.java

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java

*

/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeLongArrayAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscBlockingConsumerArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashMap.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseMpscLinkedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingIdentityHashMap.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseLinkedQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/InternalAPI.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashSet.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/Pow2.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/spec/ConcurrentQueueSpec.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCChunkedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/ConcurrentAutoTable.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedXaddChunk.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/LinkedQueueNode.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCUnboundedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/PortableJvmInfo.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/ConcurrentCircularArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingSetInt.java
*


```

/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscLinkedQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/UnsafeRefArrayAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscCompoundQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCChunkedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/QueueFactory.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/UnsafeAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscUnboundedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SpSCGrowableAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/IndexedQueueSizeUtil.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCGrowableArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/RangeUtil.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/package-info.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/BaseSpSCLinkedArrayQueue.java

```

1.82 Iz4 1.8.3-1.e17

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Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

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1.83 e2fsprogs 1.42.9-19.el7

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#

This is a Makefile stub which handles the creation of BSD shared # libraries.

#

In order to use this stub, the following makefile variables must be defined.

#

BSDLIB_VERSION = 1.0

BSDLIB_IMAGE = libce

BSDLIB_MYDIR = et

BSDLIB_INSTALL_DIR = \$(SHLIBDIR)

```

#

all:: image

real-subdirs:: Makefile
@echo " MKDIR pic"
@mkdir -p pic

BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)
BSDLIB_PIC_FLAG = -fpic

image: $(BSD_LIB)

$(BSD_LIB): $(OBJS)
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LDFLAGS_SHLIB) $(OBJS))
$(MV) pic/$(BSD_LIB) .
$(RM) -f ../$(BSD_LIB)
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \
`echo $(my_dir) | sed -e 's;lib/;;' /$(BSD_LIB) $(BSD_LIB))

install-shlibs install:: $(BSD_LIB)
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
@$(INSTALL_PROGRAM) $(BSD_LIB) \
$(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)
@-$(LDCONFIG)

install-strip: install

install-shlibs-strip:: install-shlibs

uninstall-shlibs uninstall::
$(RM) -f $(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)

clean::
$(RM)
-rf pic
$(RM) -f $(BSD_LIB)
$(RM) -f ../$(BSD_LIB)

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This is the Debian GNU/Linux prepackaged version of the translation files of the EXT2 file system utilities. The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

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Index: tdbsa/tdb.c

=====

--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

*/

/*

- Unix SMB/CIFS implementation.
- + trivial database library - standalone version

- trivial database library - private includes
-
- Copyright (C) Andrew Tridgell 2005
- + Copyright (C) Andrew Tridgell 1999-2005

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Gadi Oxman, August 1995

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```
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```

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```
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```

```
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Theodore Ts'o
23-June-2007

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This is the Debian GNU/Linux prepackaged version of the EXT2 file system utilities (e2fsck, mke2fs, etc.). The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

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This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

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Upstream Author: Theodore Ts'o <tytso@mit.edu>

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This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

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This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

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1.84 rpm 4.11.3-45.el7

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1.89 sed 4.2.2-7.el7

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A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting
 Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands
 as a successor of a language called ABC. Guido remains Python's
 principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for
 National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>)
 in Reston, Virginia where he released several versions of the
 software.

In May 2000, Guido and the Python core development team moved to
 BeOpen.com to form the BeOpen PythonLabs team. In October of the same
 year, the PythonLabs team moved to Digital Creations (now Zope
 Corporation, see <http://www.zope.com>). In 2001, the Python Software
 Foundation (PSF, see <http://www.python.org/psf/>) was formed, a
 non-profit organization created specifically to own Python-related
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All Python releases are Open Source (see <http://www.opensource.org> for
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 releases have also been GPL-compatible; the table below summarizes
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Release	Derived from	Year	Owner	GPL- compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes

2.1.3				
2.1.2	2002	PSF	yes	
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release from	Derived	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2			
2002	PSF	yes		
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes

Footnotes:

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(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

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<one line to give the library's name and a brief idea of what it does.>
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Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

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1.98 keyutils-libs 1.5.8-3.el7

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Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

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- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
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that in

whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

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3. You may copy and distribute the Program

(or a work based on it,

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b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

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c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

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END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

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Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

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'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

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We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

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The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the

ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object

file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials

specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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If distribution of object code is made by offering access to copy

from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a)

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will

operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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1.101 libdb-utils 5.3.21-25.el7

1.101.1 Available under license :

No license file was found, but licenses were detected in source scan.

/opt/cola/permits/1110807414_1680601714.3027513/0/libdb-5-3-21-25-el7-src-zip/libdb-5.3.21-25.el7.src/libdb-5.3.21-25.el7.src.cpio: binary file matches

Found in path(s):

* /bin/grep

1.102 qrencode-libs 3.4.1-3.el7

1.102.1 Available under license :

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For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2)

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1.109 curl 7.29.0-59.el7_9.1

1.109.1 Available under license :

License Mixing with apps, libcurl and Third Party Libraries

=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that GPL[1]-licensed code is not allowed to be linked with code licensed under the Original BSD license (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an exception[2]. This particular problem was addressed when the Modified BSD

license was created, which does not have the announcement clause that collides with GPL.

libcurl <http://curl.haxx.se/docs/copyright.html>

Uses an MIT (or Modified BSD)-style license that is as liberal as possible. Some of the source files that deal with KRB4 have Original BSD-style announce-clause licenses. You may not distribute binaries with krb4-enabled libcurl that also link with GPL-licensed code!

OpenSSL <http://www.openssl.org/source/license.html>

(May be used for SSL/TLS support) Uses an Original BSD-style license with an announcement clause that makes it "incompatible" with GPL. You are not allowed to ship binaries that link with OpenSSL that includes GPL code (unless that specific GPL code includes an exception for OpenSSL - a habit that is growing more and more common). If OpenSSL's licensing is a problem for you, consider using GnuTLS or yassl instead.

GnuTLS <http://www.gnutls.org/>

(May be used for SSL/TLS support) Uses the LGPL[3] license. If this is a problem for you, consider using OpenSSL instead. Also note that GnuTLS itself depends on and uses other libs (libgcrypt and libgpg-error) and they too are LGPL- or GPL-licensed.

yassl <http://www.yassl.com/>

(May be used for SSL/TLS support) Uses the GPL[1] license. If this is a problem for you, consider using OpenSSL or GnuTLS instead.

NSS <http://www.mozilla.org/projects/security/pki/nss/>

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axTLS <http://axtls.sourceforge.net/>

(May be used for SSL/TLS support) Uses a Modified BSD-style license.

c-ares <http://daniel.haxx.se/projects/c-ares/license.html>

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib http://www.gzip.org/zlib/zlib_license.html

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

krb4

While nothing in particular says that a Kerberos4 library must use any particular license, the one I've tried and used successfully so far (kth-krb4) is partly Original BSD-licensed with the announcement clause. Some of the code in libcurl that is written to deal with Kerberos4 is Modified BSD-licensed.

MIT Kerberos <http://web.mit.edu/kerberos/www/dist/>

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal <http://www.pdc.kth.se/heimdal/>

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fbopenssl

(Used for SPNEGO support) Unclear license. Based on its name, I assume that it uses the OpenSSL license and thus shares the same issues as described for OpenSSL above.

libidn <http://josefsson.org/libidn/>

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the

full LGPL license text. Please properly point out what parts of the distributed package that the license addresses.

OpenLDAP <http://www.openldap.org/software/release/license.html>

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

libssh2 <http://www.libssh2.org/>

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.

[1] = GPL - GNU General Public License: <http://www.gnu.org/licenses/gpl.html>

[2] = <http://www.fsf.org/licenses/gpl-faq.html#GPLIncompatibleLibs> details on how to write such an exception to the GPL

[3] = LGPL - GNU Lesser General Public License:
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1.110 rxjava 2.1.10

1.110.1 Available under license :

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```
/**
```

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```

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```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-  
jar/io/reactivex/internal/subscriptions/BasicQueueSubscription.java
```

```
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/Completable.java
```

```
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
```

jar/io/reactivex/disposables/Disposable.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFlatMapMaybe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSkipWhile.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableTakeUntilPredicate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableAmb.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeZipArray.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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jar/io/reactivex/internal/fuseable/FuseToMaybe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/disposables/RunnableDisposable.java
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/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableObserveOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableTakeWhile.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableTimeoutTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeUsing.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableFromUnsafeSource.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeFromSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableMergeWithMaybe.java
*
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/SubscriberResourceWrapper.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/ObservableEmitter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/disposables/Disposables.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableRetryBiPredicate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/subscribers/TestSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelFlatMap.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

```

jar/io/reactivex/internal/operators/maybe/MaybeEmpty.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/ObservableSource.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableRefCount.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/disposables/DisposableHelper.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableThrottleFirstTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableTimer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleZipIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/fuseable/FuseToObservable.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/Flowable.java
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jar/io/reactivex/internal/operators/observable/ObservableRetryPredicate.java
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jar/io/reactivex/internal/schedulers/NonBlockingThread.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFlatMapPublisher.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeTimeoutMaybe.java
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jar/io/reactivex/functions/LongConsumer.java
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/BlockingFlowableLatest.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableFromRunnable.java
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/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeCount.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeFromCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableDistinct.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/ObservableRetryWhen.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/observers/BaseTestConsumer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/disposables/CompositeDisposable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/ObservableFromIterable.java
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/parallel/ParallelFlowable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/parallel/ParallelFailureHandling.java
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeConcatArray.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/parallel/ParallelFromPublisher.java
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function6.java
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 jar/io/reactivex/observables/ConnectableObservable.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableEmpty.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/single/SingleFlatMap.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableTakeWhile.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/disposables/SerialDisposable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

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jar/io/reactivex/internal/operators/maybe/MaybeError.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDoAfterTerminate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/EmptyComponent.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableTake.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableOnBackpressureBufferStrategy.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableWithLatestFromMany.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/MaybeOnSubscribe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableJust.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/observables/GroupedObservable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDoOnLifecycle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscriptions/AsyncSubscription.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleToObservable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSampleTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableBufferExactBoundary.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableJust.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableRetryBiPredicate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableJoin.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeEqualSingle.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/observers/BlockingBaseObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableCollectSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableCollect.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/SinglePostCompleteSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/fuseable/ScalarCallable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

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jar/io/reactivex/internal/operators/observable/ObservableMergeWithCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeErrorCallable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscriptions/BasicIntQueueSubscription.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDoFinally.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeLift.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableFromPublisher.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableWindowBoundarySelector.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableRepeat.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableTakeUntil.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableElementAtSingle.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/fuseable/SimpleQueue.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableBufferExactBoundary.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFlatMapCompletableCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/exceptions/ProtocolViolationException.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableUnsubscribeOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableAll.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDoOnSubscribe.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/subscribers/ResourceSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableWithLatestFrom.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSubscribeOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeIsEmptySingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/fuseable/ConditionalSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableBlockingSubscribe.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelDoOnNextTry.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/subjects/UnicastSubject.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableHide.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableDoOnEvent.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleFlatMapIterableFlowable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/flowables/ConnectableFlowable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDebounce.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDelayWithCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/annotations/CheckReturnValue.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscriptions/DeferredScalarSubscription.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableMergeWithSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableWindow.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableCache.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeToObservable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDelay.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/schedulers/TestScheduler.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableCreate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/OpenHashSet.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableAllSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableReduceMaybe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSkip.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Consumer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/HashMapSupplier.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableFromObservable.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/processors/UnicastProcessor.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFlatMapCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSwitchIfEmpty.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableConcat.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/subscribers/SafeSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableMap.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeDefer.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableDoFinally.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeFromFuture.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/fuseable/package-
info.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableRange.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableReduceSeedSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelSortedJoin.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSkipLast.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableReduceSeedSingle.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableZipIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleAmb.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleMap.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/ObservableConverter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/plugins/RxJavaPlugins.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeDetach.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableRepeat.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/subjects/PublishSubject.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/schedulers/ImmediateThinScheduler.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/CompletableOperator.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/single/SingleTakeUntil.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/annotations/SchedulerSupport.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/util/MergerBiFunction.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/subscriptions/ScalarSubscription.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/CompletableOnSubscribe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/single/SingleDoOnEvent.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/FlowableTransformer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/FlowableSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/Observer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/observers/DeferredScalarDisposable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybePeek.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/observers/BlockingFirstObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/single/SingleResumeNext.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/observers/DisposableMaybeObserver.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/subscriptions/ArrayCompositeSubscription.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeMap.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/subscribers/ForEachWhileSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableConcatMap.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/util/QueueDrain.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableRangeLong.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/BlockingObservableLatest.java

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*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableLift.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableToFlowable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeIgnoreElement.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableCreate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableScan.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/ConnectConsumer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSerialized.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/fuseable/SimplePlainQueue.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelReduceFull.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/MaybeSource.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeDelayOtherPublisher.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function9.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/MaybeTransformer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSequenceEqualSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSwitchMap.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/processors/AsyncProcessor.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeSwitchIfEmpty.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableZip.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableCount.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableBufferBoundarySupplier.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/processors/ReplayProcessor.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableScan.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/CompletableObserver.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableFromUnsafeSource.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableZipIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSingleMaybe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeFilterSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/exceptions/OnErrorNotImplementedException.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleLift.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleInternalHelper.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableDisposeOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/observers/InnerQueuedObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelFromArray.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableTimeout.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSwitchMap.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableEmpty.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeFlatMapSingleElement.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFromIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletablePeek.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscriptions/SubscriptionArbiter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/SingleEmitter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleToFlowable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableInternalHelper.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableBuffer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableConcatWithMaybe.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/exceptions/MissingBackpressureException.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObserverResourceWrapper.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDelaySubscriptionOther.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableDelaySubscriptionOther.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableElementAt.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableAllSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableWindow.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/ErrorMessage.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/exceptions/UndeliverableException.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeFlatMapIterableObservable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableConcatMapPublisher.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeToSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelReduce.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableReplay.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSampleTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableDoAfterNext.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscriptions/EmptySubscription.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/disposables/ObserverFullArbiter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/observers/BasicFuseableObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableAmb.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableOnErrorNext.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelMap.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeOnErrorComplete.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableConcatArray.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

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jar/io/reactivex/internal/fuseable/HasUpstreamMaybeSource.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSequenceEqualSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/observers/ResumeSingleObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableToSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableBlockingSubscribe.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/schedulers/Schedulers.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableSingleSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/QueueDrainSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableBuffer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/subscribers/SerializedSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/SingleSource.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableBufferBoundary.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableReduceMaybe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDoOnDispose.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/observers/ResourceSingleObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFilter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeTimeoutPublisher.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableInternalHelper.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/SuppressAnimalSniffer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableFromCallable.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/Scheduler.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableWindowTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableError.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableBufferTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

jar/io/reactivex/internal/observers/InnerQueuedObserverSupport.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/disposables/DisposableContainer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableOnErrorReturn.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableElementAtSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/HalfSerializer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableCache.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/AtomicThrowable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableRepeatUntil.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableTimeout.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableFlatMapMaybe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/ObservableOnSubscribe.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/BackpressureStrategy.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableMaterialize.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableInterval.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableFromFuture.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Cancellable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/FlowableOnSubscribe.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleFromCallable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableDistinctUntilChanged.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/QueueDrainHelper.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/queue/MpscLinkedQueue.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/observers/FutureObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableDistinct.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/annotations/Nullable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

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jar/io/reactivex/observers/ResourceObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/ExecutorScheduler.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableDelay.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableConcatWithCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableOnErrorComplete.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/observers/ResourceMaybeObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowablePublish.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/FlowableEmitter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableReplay.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscriptions/SubscriptionHelper.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDefer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableLastSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableErrorSupplier.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableToList.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleTimer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function8.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/disposables/FutureDisposable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/subscribers/DefaultSubscriber.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/InnerQueuedSubscriberSupport.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableConcatMapEager.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/schedulers/Timed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/ObservableTransformer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeAmb.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableGroupBy.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/MaybeObserver.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableRangeLong.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableWithLatestFrom.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeSwitchIfEmptySingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleFlatMapCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableMapNotification.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableIgnoreElements.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableToList.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableOnBackpressureLatest.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeDoOnEvent.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeHide.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSkip.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableConcatWithSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/fuseable/QueueSubscription.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableError.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDoFinally.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeFromAction.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/disposables/ActionDisposable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/DeferredScalarSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableDoOnLifecycle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/disposables/SubscriptionDisposable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeDelay.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/observers/SafeObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

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jar/io/reactivex/internal/operators/completable/CompletableDetach.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/InnerQueuedSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableAny.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableTakePublisher.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleTimeout.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/subscribers/BlockingSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeConcatIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableHide.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableConcatMapEager.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableToObservable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleUnsubscribeOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDefer.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/parallel/ParallelPeek.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableNever.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/FlowableConverter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/SingleConverter.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSampleWithObservable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/processors/FlowableProcessor.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableConcatWithCompletable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeObserveOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableTimeInterval.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableToListSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeNever.java
*

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/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableSequenceEqual.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/parallel/ParallelRunOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/ObservableRepeatUntil.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableDetach.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/parallel/ParallelFlowableConverter.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Predicate.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/disposables/ArrayCompositeDisposable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableConcatWithMaybe.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/subscribers/DisposableSubscriber.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableBufferTimed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/ObservableCollectSingle.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeOnErrorNext.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/observers/DefaultObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/completable/CompletableMergeDelayErrorIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/observers/ConsumerSingleObserver.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/schedulers/SingleScheduler.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/AbstractObservableWithUpstream.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/subjects/CompletableSubject.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeZipIterable.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/IntFunction.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/ObservableScanSeed.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/SingleOperator.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeFilter.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/maybe/MaybeFlatMapSingle.java

* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableConcatMapEagerPublisher.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableWindowTimed.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/observers/EmptyCompletableObserver.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/processors/BehaviorProcessor.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/maybe/MaybeToFlowable.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableIgnoreElementsCompletable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/SingleTransformer.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableSkipUntil.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function5.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/single/SingleOnErrorReturn.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/subscribers/BlockingFirstSubscriber.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/single/SingleUsing.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/maybe/MaybeFlatMapBiSelector.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableSingle.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/subjects/AsyncSubject.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableSkipWhile.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function4.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/maybe/MaybeFlatMapCompletable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/observers/BasicQueueDisposable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/parallel/ParallelFilter.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableInterval.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableOnBackpressureDrop.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/completable/CompletableFromSingle.java

* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/parallel/ParallelFilterTry.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/single/SingleDelayWithObservable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableDefer.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableBufferBoundarySupplier.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableSkipLastTimed.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/completable/CompletableSubscribeOn.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableTakeLast.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableSingleSingle.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableElementAtMaybe.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/maybe/MaybeFromRunnable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/annotations/BackpressureSupport.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableCombineLatest.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/subjects/SerializedSubject.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/single/SingleFromUnsafeSource.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/maybe/MaybeContains.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableFromCallable.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableFilter.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservableTakeUntil.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/BlockingFlowableIterable.java
 *
 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/flowable/FlowableSwitchIfEmpty.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/observable/ObservablePublish.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/operators/completable/CompletableResumeNext.java
 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-

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jar/io/reactivex/internal/operators/parallel/ParallelCollect.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableCount.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeUnsubscribeOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeCallbackObserver.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDelay.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/BiFunction.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableDematerialize.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleJust.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/processors/PublishProcessor.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/LinkedList.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleDoAfterSuccess.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableOnErrorReturn.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/observers/SerializedObserver.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableTakeLastOne.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableSkipLast.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/BackpressureHelper.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableAutoConnect.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/maybe/MaybeMergeArray.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableRefCount.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/Function7.java
*
/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/completable/CompletableConcatArray.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/util/SorterFunction.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/single/SingleSubscribeOn.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/flowable/FlowableTake.java

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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
 jar/io/reactivex/internal/queue/SpscArrayQueue.java
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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 /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/SingleOnSubscribe.java
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/Maybe.java
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 * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/subjects/Subject.java
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
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jar/io/reactivex/internal/subscribers/FutureSubscriber.java
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```
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*/
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```
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Found in path(s):

- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/observables/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/observable/ObservableJoin.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/subjects/package-info.java
- *
- /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/functions/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/exceptions/CompositeException.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowablePublishMulticast.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/schedulers/SchedulerPoolFactory.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/schedulers/ComputationScheduler.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/plugins/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/schedulers/IOScheduler.java
- *
- /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/exceptions/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/disposables/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/observers/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/flowables/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/processors/package-info.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/operators/flowable/FlowableGroupJoin.java
- * /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/schedulers/TrampolineScheduler.java

```
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/NewThreadScheduler.java
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/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/schedulers/package-
info.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/annotations/package-
info.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/subscribers/package-
info.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/operators/observable/ObservableGroupJoin.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/BackpressureOverflowStrategy.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/parallel/package-info.java
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 */
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-jar/io/reactivex/internal/util/Pow2.java
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* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/InstantPeriodicTask.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/SchedulerWhen.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/ScheduledDirectPeriodicTask.java
*

/opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/AbstractDirectTask.java
* /opt/cola/permits/1118999868_1608681835.21/0/rxjava-2-1-10-sources-
jar/io/reactivex/internal/schedulers/ScheduledDirectTask.java

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jar/io/reactivex/internal/operators/flowable/FlowableOnBackpressureError.java

1.111 guava 30.1-jre

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/SubscriberRegistry.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/Dispatcher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/MoreObjects.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenerCallQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/Quantiles.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/Subscriber.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/TrustedListenableFutureTask.java

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jar/com/google/common/util/concurrent/ServiceManagerBridge.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Java8Usage.java
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jar/com/google/common/io/AppendableWriter.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/TypeToken.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/FluentFuture.java  
*  
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/AggregateFuture.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/TimeLimiter.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/AbstractCatchingFuture.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/AbstractTransformFuture.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/UncheckedTimeoutException.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/FakeTimeLimiter.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/FuturesGetChecked.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/GwtFluentFutureCatchingSpecialization.java  
*  
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jar/com/google/common/util/concurrent/Futures.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/util/concurrent/CollectionFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/CaseFormat.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/CharEscaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/PatternFilenameFilter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/CharEscaperBuilder.java

*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/TimeoutFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ImmediateFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/SimpleTimeLimiter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/annotations/VisibleForTesting.java

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jar/com/google/common/reflect/TypeVisitor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixType.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/HashingInputStream.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/VerifyException.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/eventbus/SubscriberExceptionHandler.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Runnables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Verify.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionContext.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredMultimapValues.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CharSequenceReader.java
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Utf8.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/WrappingScheduledExecutorService.java
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jar/com/google/common/collect/JdkBackedImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/BaseImmutableMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/JdkBackedImmutableBiMap.java
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jar/com/google/common/collect/FilteredKeySetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredEntrySetMultimap.java
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jar/com/google/common/collect/SortedMultisetBridge.java
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jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableEnumMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
```

jar/com/google/common/collect/UnmodifiableSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingBlockingDeque.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingDeque.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TransformedIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeTraverser.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CompactHashSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DescendingMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredEntryMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingNavigableSet.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeRangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DescendingImmutableSortedSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableAsList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EvictingQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingNavigableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractNavigableMap.java
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* the License.
*/
/**
* Holder for extra methods of { @code Objects } only in web. Intended to be empty for regular
* version.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/ExtraObjectsMethodsForWeb.java
```

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```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMapEntry.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/MultimapBuilder.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/MoreFiles.java
```

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableEntry.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Tables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java
*
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Serialization.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/StandardTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/PeekingIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableBiMap.java
*
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMapValues.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Collections2.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

```
jar/com/google/common/collect/ImmutableMapEntrySet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableCollection.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Table.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EmptyImmutableListMultimap.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CollectPreconditions.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/HashBasedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeBasedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/StandardRowSortedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Range.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/UnmodifiableIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMapKeySet.java
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```

```
*/
```

```
/**
```

```
* Holder for web specializations of methods of { @code Shorts}. Intended to be empty for regular  
* version.
```


*/

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/ShortsMethodsForWeb.java

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*/

/*

* This method was rewritten in Java from an intermediate step of the Murmur hash function in
* <http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp>, which contained the
* following header:

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*/

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/SmallCharMatcher.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableRangeSet.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/LinearTransformation.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharSink.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAddable.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SmoothRateLimiter.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyMultimap.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Parameter.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteSink.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Closer.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/Stats.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/html/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/PairedStatsAccumulator.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Element.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharSource.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/StatsAccumulator.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/MutableTypeToInstanceMap.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/SipHashFunction.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeCapture.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LongAddable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/ChecksumHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Invokable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/StandardSystemProperty.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractByteHasher.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/AbstractInvocationHandler.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/BaseEncoding.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/PairedStats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LongAddables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAddables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CartesianList.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/FileWriteMode.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/ClassPath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableRangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ServiceManager.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/BaseGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Traverser.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ClosingFuture.java
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*/
/*
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*/

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Hashing.java

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*/

/**

* Outer class that exists solely to let us write {@code Partially.GwtIncompatible} instead of plain * {@code GwtIncompatible}. This is more accurate for {@link Futures#catching}, which is available * under GWT but with a slightly different signature.

*

* <p>We can't use {@code PartiallyGwtIncompatible} because then the GWT compiler wouldn't recognize

* it as a {@code GwtIncompatible} annotation. And for {@code Futures.catching}, we need the GWT * compiler to autostrip the normal server method in order to expose the special, inherited GWT * version.

*/

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Partially.java

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Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TopKSelector.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/SuccessorsFunction.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graphs.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/InsecureRecursiveDeleteException.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/RecursiveDeleteOption.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/PredecessorsFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableGraph.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Network.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AtomicDoubleArray.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAdder.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LongAdder.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Striped64.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Striped64.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/FileBackedOutputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Shorts.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Doubles.java

*

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/SequentialExecutor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/CharMatcher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FluentIterable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Booleans.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Chars.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/PercentEscaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Joiner.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Floats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenableFutureTask.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/UnicodeEscaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Bytes.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/MultiReader.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Stopwatch.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Converter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Longs.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Ints.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/internal/Finalizer.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/InetAddresses.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/Escaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/thirdparty/publicsuffix/TrieParser.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MinMaxPriorityQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSequentialIterator.java
*
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RowSortedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableCollection.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/UnmodifiableListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedMapDifference.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedMultiset.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedMultisets.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFuture.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedBytes.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostSpecifier.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/JdkFutureAdapters.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/SignedBytes.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/GwtIncompatible.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SparseImmutableTable.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/UrlEscapers.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ReferenceEntry.java

*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeResolver.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMaker.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Cut.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataInput.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SettableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Callables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Service.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractIdleService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFluentFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataOutput.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/html/HtmlEscapers.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedEscaperMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineProcessor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/XmlEscapers.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingListenableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/GwtCompatible.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/io/ByteProcessor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/ArrayBasedCharEscaper.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/InternetDomainName.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Splitter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LocalCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/Escapers.java
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*/
/**
* Not supported. You are attempting to create a map that may contain a non-{@code Comparable}
* key. Proper calls will resolve to the version in {@code ImmutableSortedMap}, not this dummy
* version.
*
* @throws UnsupportedOperationException always
* @deprecated Pass a key of type {@code Comparable}
to use {@link
* ImmutableSortedMap#of\(Comparable, Object\)}.
*/
```

```
Found in path(s):
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
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express
* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/
/**
* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular
* version.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/FloatsMethodsForWeb.java
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jar/com/google/common/collect/ComputationException.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DiscreteDomain.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableClassToInstanceMap.java
*
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableAsList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ArrayTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TableCollectors.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableEnumSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableSortedSet.java
*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ComparisonChain.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractIndexedListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EmptyImmutableSetMultimap.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Monitor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/package-info.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedLists.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Ascii.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Strings.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Atomics.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Equivalence.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/Beta.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListeningExecutorService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java
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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AtomicLongMap.java

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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CommonMatcher.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CommonPattern.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/JdkPattern.java

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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractGraph.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java
- *
- /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MoreCollectors.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableValueGraph.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ElementOrder.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ValueGraphBuilder.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/NetworkConnections.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Comparators.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphConstants.java
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- /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingGraph.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractNetwork.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EdgesConnecting.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphBuilder.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EndpointPairIterator.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingValueGraph.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractValueGraph.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/EndpointPair.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/DirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardMutableNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/UndirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/ValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardMutableValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/UndirectedGraphConnections.java
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jar/com/google/common/graph/MultiEdgesConnecting.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RangeGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/LinkedHashMapMultimapGwtSerializationDependencies.java
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jar/com/google/common/graph/StandardValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/DirectedGraphConnections.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CollectCollectors.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/MapRetrievalCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/DirectedMultiNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/GraphConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractGraphBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/NetworkBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/graph/MapIteratorCache.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/graph/AbstractDirectedNetworkConnections.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/graph/StandardMutableGraph.java

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*/

/**

* Holder for web specializations of methods of { @code Doubles }. Intended to be empty for regular

* version.

*/

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/**

* Holder for web specializations of methods of { @code Ints }. Intended to be empty for regular

* version.

*/

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/ImmutableBiMapFauxverideShim.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/package-info.java
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jar/com/google/common/io/Resources.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Predicates.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Function.java  
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Throwables.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/AsyncEventBus.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Primitives.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/FinalizableWeakReference.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ExecutionList.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/DeadEvent.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Files.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/package-info.java  
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/package-info.java  
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/LineReader.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractFuture.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Predicate.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/package-info.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Preconditions.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableSoftReference.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableReferenceQueue.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Objects.java
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 /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Charsets.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/Subscribe.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/MultiInputStream.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Flushables.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Supplier.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableReference.java
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 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizablePhantomReference.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineBuffer.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Suppliers.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/package-info.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/DirectExecutor.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumMultiset.java
 * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashBiMap.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/AllowConcurrentEvents.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LittleEndianDataInputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Defaults.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CountingOutputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableFuture.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/AbstractIterator.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Functions.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CountingInputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LittleEndianDataOutputStream.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharStreams.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteStreams.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/FarmHashFingerprint64.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/MacHashFunction.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/InterruptibleTask.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AggregateFutureState.java
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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMapEntry.java

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- /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractIterator.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Sets.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMultiset.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multimaps.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BiMap.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multisets.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingQueue.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingConcurrentMap.java

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- /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ReverseNaturalOrdering.java
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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableSet.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumHashBiMap.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multiset.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingListIterator.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/collect/ForwardingSortedMap.java
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jar/com/google/common/collect/package-info.java
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jar/com/google/common/collect/ForwardingMap.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMapBasedMultiset.java
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/UsingToStringOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Iterables.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableSet.java
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ByFunctionOrdering.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ListMultimap.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingCollection.java
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jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/math/BigDecimalMath.java
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jar/com/google/common/collect/JdkBackedImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/ImmutableSupplier.java
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jar/com/google/common/util/concurrent/ExecutionSequencer.java

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* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's

* `java.util.HashMap`

class.

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java
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jar/com/google/common/collect/GeneralRange.java
*
 /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SortedIterable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractRangeSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Count.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SortedIterables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMultiset.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedInts.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/WrappingExecutorService.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractScheduledService.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncheckedExecutionException.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Weigher.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheStats.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractCompositeHashFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Hashing.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractLoadingCache.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ForwardingLoadingCache.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilderSpec.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Optional.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DescendingImmutableSortedMultiset.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Ticker.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Present.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedInteger.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3_32HashFunction.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Uninterruptibles.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostAndPort.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3_128HashFunction.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Enums.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/MathPreconditions.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/MessageDigestHashFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedLongs.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalListener.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListeningScheduledExecutorService.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HttpHeaders.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalCause.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FunctionalEquivalence.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AsyncFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Cache.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/BloomFilterStrategies.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/BigIntegerMath.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractCache.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionError.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/IntMath.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashingOutputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EmptyContiguousSet.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/DoubleMath.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/hash/Funnels.java
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jar/com/google/common/cache/CacheLoader.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/AbstractNonStreamingHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/Funnel.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/BloomFilter.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/HashFunction.java
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*/
/**
* Returns an array containing all of the elements in the specified collection. This method
```

- * returns the elements in the order they are returned by the collection's iterator. The returned
- * array is "safe" in that no references to it are maintained by the collection. The caller is
- * thus free to modify the returned

array.

- *
- * <p>This method assumes that the collection size doesn't change while the method is running.
- *
- * <p>TODO(kevinb): support concurrently modified collections?
- *
- * @param c the collection for which to return an array of elements
- */

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ObjectArrays.java

1.112 aop-alliance 1.0

1.112.1 Available under license :

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1.113 iconv 2.17

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative

work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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```
<one line to give the library's name and a brief idea of what it does.>  
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```

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<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

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Version 3, 29 June 2007

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section 10

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b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the

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d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

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```
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```

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```

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```

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1.114 zlib 1.2.8

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1.115 dc 1.3

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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/DCPATHButton/Classes/DCPATHItemButton.m

* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/Example-Swift/DCPATHButton/Classes/DCPATHItemButton.m

```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton/Classes/DCPathItemButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/AppDelegate.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/main.m
*
/opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/AppDelegate.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathItemButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/DCPathButton/Classes/DCPathButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathItemButton.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton/Classes/DCPathButton.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/DCPathButton/Classes/DCPathButton.m
*
/opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/ExampleTests/ExampleTests.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton/Classes/DCPathButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/ViewController.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/ViewController.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathButton.m
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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift-Bridging-Header.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-SwiftTests/Example_SwiftTests.swift
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift/AppDelegate.swift
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```

Pod::Spec.new do |s|


```

s.name      = "DCPathButton"
s.version   = "2.1.1"
s.summary   = " A beautiful button copy from Path@ "

s.description = <<-DESC
DCPathButton is a menu button, design by an famous App Path@.
Since Path@ 4.0, it return to use a tab bar instead of a side bar,
and also change the menu button. So I try to implement it and then
the DCPathButton born :)
DESC

s.homepage  = "https://github.com/Tangdixi/DCPathButton"

s.license   = {
:type => 'MIT',
:text => 'The DCPathButton use the MIT license'
}

s.author    = { "Tangdixi" => "Tangdixi@gmail.com" }

s.platform  = :ios, '7.0'

s.source    = {
:git => "https://github.com/Tangdixi/DCPathButton.git",
:tag => "2.1.1"
}

s.source_files = 'DCPathButton/Classes/*.{h,m}'

s.resources = ["DCPathButton/Sounds/*"]

s.frameworks = 'QuartzCore','AudioToolbox'

s.requires_arc = true

end

```

Found in path(s):

```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton.podspec
```

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```

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```
<label opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="left" horizontalHuggingPriority="251" verticalHuggingPriority="251" text=" Copyright (c) 2015 DC. All rights reserved." textAlignment="center" lineBreakMode="tailTruncation" baselineAdjustment="alignBaselines" minimumFontSize="9" translatesAutoresizingMaskIntoConstraints="NO" id="8ie-xW-0ye">
```

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```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift/Base.lproj/LaunchScreen.xib
```

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```
## DCPATHButton
```

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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/BarButtonItemViewController.m

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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/README.md

1.116 centos-release 7-9.2009.1.el7.centos

1.116.1 Available under license :

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Special Recognition

One of the key reasons we got delayed on the CentOS-6 release was lack of suitable build resources, especially when we had to repeatedly build large chunks of code. Norwood S came forward and worked with me to setup a large build machine, then tune the build process and help improve the overall build, test and validate process we were using. This build machine he donated to the project was about 5 times more capable than the entire buildsystem we had. And he did this out of his own pocket, from his

own time, and has since upgraded the machine as well. It's now a 128GB, 48 core machine, with 4 SSD's and 4 sata disks : but the key metric is that it can build from source, the entire CentOS-7 distro in under 22 hrs.

Having this capability was key in our ability to build, test and deliver CentOS-7 as rapidly as we have been able to.

We'd like to dedicate the CentOS-7 Release to Mr Norwood S, of Phoenix, AZ, USA for his continued support for the project.

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The Red Hat developers, without whom CentOS would look very different

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1.124 commons-logging 1.2

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jar/org/apache/commons/logging/package.html
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
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* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Log4JLogger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/LogFactoryImpl.java
*
/opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Jdk13LumberjackLogger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/SimpleLog.java
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1.125 commons-io 2.8.0

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jar/javassist/compiler/ast/Visitor.java

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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/CodeIterator.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/SymbolTable.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Subroutine.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/runtime/Inner.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/DefinePackageHelper.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/LineNumberAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPoolFactory.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Modifier.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/annotation/AnnotationsWriter.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CannotCompileException.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Expr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformFieldAccess.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtPrimitiveType.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/BasicBlock.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/Callback.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/MethodInfo.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/JvstCodeGen.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/NewExpr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/TypeData.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ClassFile.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtMethod.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/CondExpr.java

* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPool.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/NewExpr.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/EnclosingMethodAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/BinExpr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/SourceFileAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/SecurityActions.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassMap.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/TypeChecker.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/FieldDecl.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CodeConverter.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/ClassMetaobject.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/NestHostAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/AccessFlag.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/ASTree.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/StackMap.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/NotFoundException.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/Metalevel.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/Variable.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/Sample.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/InstanceOf.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ClassFilePrinter.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/Stmnt.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/framedump.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-


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jar/javassist/bytecode/annotation/AnnotationImpl.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/AssignExpr.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/Bytecode.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/ConstantAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/runtime/Desc.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/ProxyFactory.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/FactoryHelper.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtNewMethod.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/rmi/RemoteException.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/InstanceOfExpr.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/Declarator.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtClassType.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/NoSuchClassError.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtBehavior.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/Expr.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/ByteArray.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/stackmap/TypedBlock.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/MemberCodeGen.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/Descriptor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/reflect/Reflection.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/ClassFileWriter.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/Frame.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/reflect/Compiler.java

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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/FramePrinter.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/DoubleConst.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/TypeTag.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPoolRepositoryImpl.java
 *
 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformAfter.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Analyzer.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/SerializedProxy.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/MemberResolver.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/StringL.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Util.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/web/BadHttpRequest.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPool.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/Proxy.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtNewWrappedMethod.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Type.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ExceptionsAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformAccessArrayField.java
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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/SoftValueHashMap.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/Loader.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtField.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/Dump.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/MethodDecl.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/CompileError.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Handler.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ByteStream.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/Tracer.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/HotSwapAgent.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/FieldAccess.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/InnerClassesAttribute.java
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 *
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformCall.java
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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/LocalVariableTypeAttribute.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/MapMaker.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/JvstTypeChecker.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformReadField.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Loader.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/StackMapTable.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPoolTail.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPath.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/HotSwapper.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Executor.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/CastExpr.java
 *
 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/DeprecatedAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtClass.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Translator.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/rmi/Sample.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/CodeAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/NewArray.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassClassPath.java

* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/IntConst.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/MethodHandler.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformNew.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPoolRepository.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Cast.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/NoFieldException.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/SyntaxError.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/TokenId.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/RuntimeSupport.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/Pair.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformWriteField.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtNewConstructor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ConstPool.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/MultiType.java
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Found in path(s):

* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-

```
jar/javassist/bytecode/annotation/MemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/EnumMemberValue.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ByteMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ClassMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/MemberValueVisitor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/FloatMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/IntegerMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/StringMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ArrayMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/BooleanMemberValue.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/LongMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/CharMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/Annotation.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ShortMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/AnnotationMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/DoubleMemberValue.java
```

1.129 classmate 1.5.1

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Java ClassMate library was originally written by Tatu Saloranta (tatu.saloranta@iki.fi)

Other developers who have contributed code are:

* Brian Langel

1.130 zt 1.14

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Found in path(s):

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/AsiExtraField.java

*

/opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/ZipLong.java

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/ZipExtraField.java

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/ZipShort.java

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/ExtraFieldUtils.java

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/ZipConstants.java

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/extra/UnrecognizedExtraField.java

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* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/commons/FileExistsException.java
*
/opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/commons/IOUtils.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/commons/FileUtilsV2_2.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/commons/StringBuilderWriter.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/commons/FilenameUtils.java
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* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/ZTFileUtil.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-
jar/org/zeroturnaround/zip/ZipInfoCallback.java

* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/NameMapper.java
*
/opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/FileSource.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/ZipEntryUtil.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/timestamps/PreJava8TimestampStrategy.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/Zips.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/timestamps/TimestampStrategy.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/ByteSource.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/timestamps/Java8TimestampStrategy.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/ZipEntrySource.java
*
/opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/IdentityNameMapper.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/ZipUtil.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/timestamps/TimestampStrategyFactory.java
* /opt/cola/permits/1135879776_1613624027.25/0/zt-zip-1-14-sources-1-jar/org/zeroturnaround/zip/ZipEntryCallback.java

1.131 httpcomponents-mime 4.5.12

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1.132 jakarta-validation-api 2.0.2

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```

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```
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Validator.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/CascadableDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintTarget.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/FutureOrPresent.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Null.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintValidatorContext.java
*
 /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ExecutableDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/groups/Default.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/MessageInterpolator.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/package-info.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/Unwrapping.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/ValueExtractor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
```

jar/javax/validation/constraintvalidation/ValidationTarget.java
*
/opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/metadata/MethodDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/package-info.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/UnexpectedTypeException.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/metadata/BeanDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/constraints/Digits.java
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*/
/**
 * Creates a new {@link GeneratorAdapter}. Subclasses must not use this
 * constructor. Instead, they must use the
 * {@link #GeneratorAdapter(int, MethodVisitor, int, String, String)}
 * version.
 *
 * @param mv
 *       the
method visitor to which this adapter delegates calls.
 * @param access
 *       the method's access flags (see {@link Opcodes}).
 * @param name
 *       the method's name.
 * @param desc
 *       the method's descriptor (see {@link Type Type}).
 * @throws IllegalStateException
 *       If a subclass calls this constructor.
 */

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*/
/**
 * Creates a new JSRInliner. <i>Subclasses must not use this
 * constructor</i>. Instead, they must use the
 * {@link #JSRInlinerAdapter(int, MethodVisitor, int, String, String, String, String[])}
 * version.
 *
 * @param mv
 *
 * the <code>MethodVisitor</code> to send the resulting inlined
 * method code to (use <code>>null</code> for none).
 * @param access
 * the method's access flags (see {@link Opcodes}). This
 * parameter also indicates if the method is synthetic and/or
 * deprecated.
 * @param name
 * the method's name.
 * @param desc
 * the method's descriptor (see {@link Type}).
 * @param signature
 * the method's signature. May be <tt>null</tt>.
 * @param exceptions
 * the internal names of the method's exception classes (see
 * {@link Type#getInternalName() getInternalName}). May be
 * <tt>null</tt>.
 * @throws IllegalStateException
 * If a subclass calls this constructor.
 */

```

Found in path(s):

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/commons/JSRInlinerAdapter.java

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- * /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/commons/package.html
- * /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/package.html
- * /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/package.html
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- * /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/signature/package.html
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/opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/FrameNode.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/InsnNode.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/analysis/AnalyzerException.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/LookupSwitchInsnNode.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/ModuleOpenNode.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/ParameterNode.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/commons/RemappingFieldAdapter.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/util/TraceModuleVisitor.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/MethodWriter.java
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/opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/analysis/Analyzer.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/util/CheckModuleAdapter.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/Frame.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/MethodVisitor.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/analysis/Frame.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/FieldWriter.java
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/opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/commons/SerialVersionUIDAdder.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/analysis/SmallSet.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/AbstractInsnNode.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/analysis/SourceInterpreter.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/util/CheckFieldAdapter.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/LocalVariableNode.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/commons/TryCatchBlockSorter.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/util/CheckAnnotationAdapter.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/commons/ModuleHashesAttribute.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/InvokeDynamicInsnNode.java
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/ModuleVisitor.java
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*
/opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/ClassWriter.java
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*/
/**
 * Constructs a new {@link LocalVariableAnnotationNode}. <i>Subclasses must
 * not use this constructor</i>. Instead, they must use the
 * {@link #LocalVariableAnnotationNode(int, TypePath, LabelNode[], LabelNode[], int[], String)}
 * version.
 *
 * @param typeRef
 *     a reference to the annotated type. See {@link TypeReference}.
 * @param typePath
 *     the path to the annotated type argument, wildcard bound, array
 *     element type, or static inner type within 'typeRef'. May be
 *     <tt>null</tt> if the annotation targets 'typeRef' as a whole.
 * @param start
 *     the first instructions corresponding to the continuous ranges
 *     that make the scope of this local variable (inclusive).
 * @param end
 *     the last instructions corresponding to the continuous ranges
 *     that make the scope of this local variable (exclusive). This
 *     array must have the same size as the 'start' array.
 * @param index
 *     the local variable's index in each range. This array must have
 *     the same size as the 'start' array.
 * @param desc
 *     the class descriptor of
the annotation class.
*/

```

Found in path(s):

```

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/tree/LocalVariableAnnotationNode.java
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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/TypeReference.java

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* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/xml/SAXModuleAdapter.java

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/xml/SAXAnnotationAdapter.java

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/xml/SAXFieldAdapter.java

*

/opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/xml/ASMContentHandler.java

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/xml/SAXAdapter.java

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/xml/Processor.java

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/xml/SAXClassAdapter.java

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/xml/SAXCodeAdapter.java

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/**

* Creates a new { @link AnalyzerAdapter}. *Subclasses must not use this
* constructor*. Instead, they must use the
* { @link #AnalyzerAdapter(int, String, int, String, String, MethodVisitor)}
* version.

*

* @param owner

*

the owner's class name.

* @param access

* the method's access flags (see { @link Opcodes}).

* @param name

* the method's name.

* @param desc

* the method's descriptor (see { @link Type Type}).

* @param mv

* the method visitor to which this adapter delegates calls. May

* be `<tt>null</tt>`.

* @throws IllegalStateException

* If a subclass calls this constructor.

*/

Found in path(s):

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-
jar/org/objectweb/asm/commons/AnalyzerAdapter.java

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*/
/**
 * Constructs a new {@link Textifier}. <i>Subclasses must not use this
 * constructor</i>. Instead, they must use the {@link #Textifier(int)}
 * version.
 *
 * @throws IllegalStateException
 *         If a subclass calls this constructor.
 */

```

Found in path(s):

```

* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/util/Textifier.java

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```

```
*/
```

```
/**
```

```
 * Constructs a new {@link ClassNode}. Subclasses must not use this
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 * version.
 *
 * @throws IllegalStateException
 *         If a subclass calls this constructor.
 */
```

Found in path(s):

```
* /opt/cola/permits/1138554392_1614291227.62/0/asm-6-0-sources-1-jar/org/objectweb/asm/tree/ClassNode.java
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1.142 jersey-entity-filtering 2.31

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Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: *

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1.145 pygobject 3.22.0-1.el7_4.1

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Any

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The

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Jan 21, 2002

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If the work has interactive user interfaces, each must display

Appropriate

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a

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

@item

Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

@item

Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

@item

Convey the object

code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

@end enumerate

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

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@smallexample

@var{one line to give the program's name and a brief idea of what it does.}

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@end smallexample

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```
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@var{program} Copyright (C) @var{year} @var{name of author}
This program comes with ABSOLUTELY NO WARRANTY; for details type @samp{show w}.
This is free software, and you are welcome to redistribute it
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```

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@c man end

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Version 2.1, February 1999

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Version 3.1, 31 March 2009

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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

Thomas Funke (thf@zelator.in-berlin.de(?)) and

Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task).
Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.
David Chase, then at Olivetti Research, suggested several improvements.
Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC.
Jesse Hull and John Ellis supplied the C++ interface code.
Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.)
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* m4/ax_func_which_gethostbyname_r.m4

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@page
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@c Special handling for inclusion in the install manual.

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@ifnohtml

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@end ifnohtml

@html

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@ifnohtml

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@end ifnohtml

@end ifset

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However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

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Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever

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1.150 archaius-core 0.7.6

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1.151 shadow-utils 4.6-5.el7

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```
<one line to give the program's name and a brief idea of what it does.>  
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```

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```
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This is free software, and you are welcome to redistribute
it
under certain conditions; type `show c' for details.
```

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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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1.152 basesystem 10.0-7.el7.centos

1.152.1 Available under license :

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Summary: The skeleton package which defines a simple CentOS Linux system

Name: basesystem

Version: 10.0

Release: 7%{?dist}

License: Public Domain

Group: System Environment/Base

Requires(pre): setup filesystem

BuildRoot: %(mktemp -ud % {_tmppath})/% {name}-% {version}-% {release}-XXXXXX)

BuildArch: noarch

%description

Basesystem defines the components of a basic CentOS Linux system (for example, the package installation order to use during bootstrapping). Basesystem should be in every installation of a system, and it should never be removed.

%prep

%build

%install

%clean

%files

%defattr(-,root,root,-)

%changelog

* Fri Jun 27 2014 Johnny Hughes <johnny@centos.org> - 10.0-7.el7.centos

- Roll in CentOS Branding

* Fri Dec 27 2013 Daniel Mach <dmach@redhat.com> - 10.0-7

- Mass rebuild 2013-12-27

* Tue Mar 06 2012 Ondrej Vasik <ovasik@redhat.com> 10.0-6

- remove again reference to Fedora after RHEL-7 import(#800464)

* Thu

- Jun 23 2011 Ondrej Vasik <ovasik@redhat.com> 10.0-5
- fix FTBFS typo (#715640), add disttag
- * Fri May 21 2010 Ondrej Vasik <ovasik@redhat.com> - 10.0-4
- remove reference to Fedora, add dist tag
Related: rhbz#566527
- * Mon Apr 26 2010 Dennis Gregorovic <dgregor@redhat.com> - 10.0-3.2
- Rebuilt for RHEL 6
Related: rhbz#566527
- * Mon Apr 26 2010 Dennis Gregorovic <dgregor@redhat.com> - 10.0-3.1
- Rebuilt for RHEL 6
Related: rhbz#566527
- * Fri Jul 24 2009 Fedora Release Engineering <rel-eng@lists.fedoraproject.org> - 10.0-3
- Rebuilt for https://fedoraproject.org/wiki/Fedora_12_Mass_Rebuild
- * Mon Feb 23 2009 Fedora Release Engineering <rel-eng@lists.fedoraproject.org> - 10.0-2
- Rebuilt for https://fedoraproject.org/wiki/Fedora_11_Mass_Rebuild
- * Mon Oct 20 2008 Phil Knirsch <pknirsch@redhat.com> 10.0-1
- Bump version and rebuild for Fedora 10 (#451289)
- * Fri Mar 02 2007 Phil Knirsch <pknirsch@redhat.com> - 8.1-1
- Cleanup per package review (#225608)
- * Wed Jul 12 2006 Jesse Keating
<jkeating@redhat.com> - 8.0-5.1.1
- rebuild
- * Fri Dec 09 2005 Jesse Keating <jkeating@redhat.com>
- rebuilt
- * Wed Sep 22 2004 Bill Nottingham <notting@redhat.com>
- rebuilt
- * Fri Feb 13 2004 Elliot Lee <sopwith@redhat.com>
- rebuilt
- * Wed Jan 22 2003 Tim Powers <timp@redhat.com>
- rebuilt
- * Wed Aug 21 2002 Bill Nottingham <notting@redhat.com>
- bump rev
- * Fri Jun 21 2002 Tim Powers <timp@redhat.com>
- automated rebuild

* Thu May 23 2002 Tim Powers <timp@redhat.com>

- automated rebuild

* Wed Jan 09 2002 Tim Powers <timp@redhat.com>

- automated rebuild

* Wed Jul 12 2000 Prospector <bugzilla@redhat.com>

- automatic rebuild

* Tue Jun 6 2000 Bill Nottingham <notting@redhat.com>

- rebuild. Wheee.

* Sun Mar 21 1999 Cristian Gafton <gafton@redhat.com>

- auto rebuild in the new build environment (release 4)

* Tue Mar 16 1999 Cristian Gafton <gafton@redhat.com>

- don't require rpm (breaks dependency chain)

* Tue Mar 16 1999 Erik Troan <ewt@redhat.com>

- require rpm

* Wed Dec 30

1998 Cristian Gafton <gafton@redhat.com>

- build for 6.0

* Tue Aug 11 1998 Jeff Johnson <jbj@redhat.com>

- build root

* Mon Apr 27 1998 Prospector System <bugs@redhat.com>

- translations modified for de, fr, tr

* Tue Sep 23 1997 Erik Troan <ewt@redhat.com>

- made a noarch package

Found in path(s):

* /opt/cola/permits/1151233448_1617817524.04/0/basesystem-10.0-7.el7.centos.src.rpm-cosi-expand-archive-tqrtl4Z0/basesystem.spec

1.153 gpg-pubkey f4a80eb5-53a7ff4b

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# COPYING.other                -*- org -*-  
#+TITLE: List of code with permissive licenses as used by GnuPG.  
#+STARTUP: showall
```

* DNS resolver (dirmngr/dns.c)

dns.c - Recursive, Reentrant DNS Resolver.

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* Regular
expression support

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1993 Christopher Seiwald seiwald@vix.com
2000, 2002 Christopher Seiwald <seiwald@perforce.com>
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```
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Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute
it
under certain conditions; type `show c' for details.
```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

```
#1: 32 7648 0x83
#2: 7680 8704 0xa5
#5: 7936 4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 | | 2048 | 4095 | 1024 | 83 | Linux |

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|-------------|------|-------|-------|--------|----|---------|
| __ts_dev__1 | | 2048 | 4095 | 1024 | 83 | Linux |
| __ts_dev__2 | | 4096 | 20479 | 8192 | a5 | FreeBSD |

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| # | start | end | size | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| c: | 4096 | 20479 | 16384 | unused | 0 | 0 | |
| d: | 0 | 16064 | 16065 | unused | 0 | 0 | |

BSD disklabel command (m for help):

Command (m for help):

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| # | start | end | size | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096 | 6144 | 2049 | 4.2BSD | 0 | 0 | 0 |
| c: | 4096 | 20479 | 16384 | unused | 0 | 0 | |
| d: | 0 | 16064 | 16065 | unused | 0 | 0 | |

BSD disklabel command (m for help):

Command (m for help):

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

| | | | | | | | |
|---|-----------|----------------|--------|---------|----------|------|-------|
| 0 | unused | 5 | 4.1BSD | 9 | 4.4LFS | d | boot |
| 1 | swap | | | | | | |
| | 6 | Eighth Edition | a | unknown | e | ADOS | |
| 2 | Version 6 | 7 | 4.2BSD | b | HPFS | f | HFS |
| 3 | Version 7 | 8 | MS-DOS | c | ISO-9660 | 10 | AdvFS |

4 System V

BSD disklabel command (m for help):

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*/

1.156 kitchen 1.1.1

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- * Providing benchmark suite
- * Alec Wysoker
- * Performance and memory usage improvement

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1.161 kotlin 1.4.10

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1.163 zstd-jni 1.4.9-1

1.163.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.github.luben.zstd_jni

Bnd-LastModified: 1615191527618

Bundle-Description: JNI bindings for Zstd native library that provides
fast and high compression lossless algorithm for Java and all JVM la
nguages.

Bundle-License: <https://opensource.org/licenses/BSD-2-Clause>;descripti
on=BSD 2-Clause License

Bundle-ManifestVersion: 2

Bundle-Name: zstd-jni

Bundle-NativeCode: aix/ppc64/libzstd-jni.so;osname=AIX;processor=ppc64
, darwin/x86_64/libzstd-jni.dylib;osname=MacOS;osname=MacOSX;processo
r=x86_64, darwin/aarch64/libzstd-jni.dylib;osname=MacOS;osname=MacOSX
;processor=aarch64, freebsd/amd64/libzstd-jni.so;osname=FreeBSD;proce
ssor=amd64, freebsd/i386/libzstd-jni.so;osname=FreeBSD;processor=i386
, linux/aarch64/libzstd-jni.so;osname=Linux;processor=aarch64, linux/
amd64/libzstd-jni.so;osname=Linux;processor=amd64, linux/arm/libzstd-
jni.so;osname=Linux;processor=arm,
linux/i386/libzstd-jni.so;osname=L
inux;processor=i386, linux/mips64/libzstd-jni.so;osname=Linux;process
or=mips64, linux/ppc64/libzstd-jni.so;osname=Linux;processor=ppc64, l
inux/ppc64le/libzstd-jni.so;osname=Linux;processor=ppc64le, linux/s39
0x/libzstd-jni.so;osname=Linux;processor=s390x, win/amd64/libzstd-jni
.dll;osname=Win32;processor=amd64, win/x86/libzstd-jni.dll;osname=Win
32;processor=x86

Bundle-SymbolicName: com.github.luben.zstd-jni

Bundle-Vendor: com.github.luben

Bundle-Version: 1.4.9.1

Created-By: 1.8.0_275 (Debian)

Export-Package: com.github.luben.zstd;version="1.4.9.1",com.github.lub
en.zstd.util;version="1.4.9.1"

Implementation-Title: zstd-jni

Implementation-Vendor: com.github.luben

Implementation-Vendor-Id: com.github.luben

Implementation-Version: 1.4.9-1

Import-Package: org.osgi.framework;resolution:=optional

Private-Package: linux.amd64,linux.i386,linux.aarch64,linux.arm,linux.
ppc64,linux.ppc64le,linux.mips64,linux.s390x,aix.ppc64,darwin.x86_64,

darwin.aarch64,win.amd64,win.x86,freebsd.amd64,freebsd.i386
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"
Specification-Title: zstd-jni
Specification-Vendor: com.github.luben
Specification-Version: 1.4.9-1
Tool: Bnd-4.0.0.201805111645

Found in path(s):

* /opt/cola/permits/1176808707_1624967190.04/0/zstd-jni-1-4-9-1-jar/META-INF/MANIFEST.MF

1.164 libgcc 4.8.5-44.e17

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Jan 21, 2002

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```

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w' and `show c' should show the appropriate
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<signature of Ty Coon>, 1 April 1989
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Ty Coon, President of Vice
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@ignore

@c Set file name and title for man page.

@setfilename gpl

@settitle GNU General Public License

@c man begin SEEALSO

gfdl(7), fsf-funding(7).

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Any

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Version 2.1, February 1999

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Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to humanity, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

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Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19xx name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
program `Gnomovision' (a program to direct compilers to make passes
at assemblers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

That's all there is to it!
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=====
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=====

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Developed by:

LLVM Team

University of Illinois at Urbana-Champaign

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| ----- | ----- |
| mach_override | lib/interception/mach_override |

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@cindex LGPL, Lesser General Public License
@center Version 2.1, February 1999

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@appendixsubsec Preamble

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For example, if you distribute copies of the library, whether gratis
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Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library.

The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@iftex

@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@end iftex

@ifinfo

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@center TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@end ifinfo

@enumerate 0

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A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means

either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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@enumerate a

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@item

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its purpose remains meaningful.

(For example, a function in a library to compute square roots has
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be optional: if the application does not supply it, the square
root function must still
compute square roots.)

@end enumerate

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A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

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When a "work that uses the Library" uses material from a header file

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work.

(Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

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@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

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@item

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It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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@enumerate a

@item

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@end enumerate

@iftex

@heading END OF TERMS AND CONDITIONS

@end iftex

@ifinfo

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@end ifinfo

@page

@appendixsubsec How to Apply These Terms to Your New Libraries

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@smallexample

@var{one line to give the library's name and an idea of what it does.}

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@end smallexample

Also add information on how to contact you by electronic and paper mail.

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```

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Ty Coon, President of Vice
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Version 3.1, 31 March 2009

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Packaging is done by the Debian GCC Maintainers

<debian-gcc@lists.debian.org>, with sources obtained from:

ftp://gcc.gnu.org/pub/gcc/releases/ (for full releases)
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The current gcc-4.8 source package is taken from the SVN gcc-4_8-branch.

Changes: See changelog.Debian.gz

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

| Language | Compiler package | Library package | Documentation |
|---------------|------------------|-----------------|--------------------|
| Ada | gnat-4.8 | | |
| | libgnat-4.8 | gnat-4.8-doc | |
| C | gcc-4.8 | | gcc-4.8-doc |
| C++ | g++-4.8 | libstdc++6 | libstdc++6-4.8-doc |
| D | gdc-4.8 | | |
| Fortran 95 | gfortran-4.8 | libgfortran3 | gfortran-4.8-doc |
| Go | gccgo-4.8 | libgo0 | |
| Java | gcj-4.8 | libgcj10 | libgcj-doc |
| Objective C | gobjc-4.8 | libobjc2 | |
| Objective C++ | gobjc++-4.8 | | |

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

| Language | Sources | Development | Debugging | Position-Independent |
|----------|-------------------|--------------------|--------------------|----------------------|
| C++ | | libstdc++6-4.8-dev | libstdc++6-4.8-dbg | libstdc++6-4.8-pic |
| D | libphobos-4.8-dev | | | |
| Java | libgcj10-src | libgcj10-dev | libgcj10-dbg | |

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

 GCC intrinsics (platform-dependent)

| | |
|--------------------|------------------------------------|
| gcc-4.8-base | Base files common to all compilers |
| gcc-4.8-soft-float | Software floating point (ARM only) |
| gcc-4.8-source | The sources with patches |

Ada:

libgnatvsn-dev, libgnatvsn4.8 GNAT version library

libgnatprj-dev, libgnatprj4.8 GNAT Project Manager library

C:

cpp-4.8, cpp-4.8-doc GNU C Preprocessor
libmudflap0-dev, libmudflap0 Library for instrumenting pointers
libssp0-dev, libssp0 GCC stack smashing protection library
libquadmath0 Math routines for the __float128 type
fixincludes Fix non-ANSI header files
protoize Create/remove ANSI prototypes from C code

Java:

gij The Java bytecode interpreter and VM
libgcj-common Common files for the Java run-time
libgcj10-awt The Abstract Windowing Toolkit
libgcj10-jar Java ARchive
for the Java run-time

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library
libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
- libobjc
- libmudflap
- libgfortran
- The libgnat-4.8 Ada support library and libgnatvsn library.
- Various config files in `gcc/config/` used in runtime libraries.

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libquadmath/math:

atanq.c, expm1q.c, j0q.c, j1q.c, log1pq.c, logq.c:

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coshq.c, erfq.c, jnq.c, lgammaq.c, powq.c, roundq.c:

Changes for 128-bit __float128 are

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ldexpq.c:

- * Conversion to long double by Ulrich Drepper,
- * Cygnus Support, drepper@cygnus.com.

cosq_kernel.c, expq.c, sincos_table.c, sincosq.c, sincosq_kernel.c,
sinq_kernel.c, truncq.c:

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isinfq.c:

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Cephes Math Library Release 2.2: January, 1991

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`gcc/go/gofrontend, libgo:`

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D:

gdc-4.8 GNU D Compiler
libphobos-4.8-dev D standard runtime library

The D source package is made up of the following components.

The D front-end for GCC:

- d/*

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The DMD Compiler implementation of the D programming language:

- d/dmd/*

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The Zlib data compression library:

- `d/phobos/etc/c/zlib/*`

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The Phobos standard runtime library:

- `d/phobos/*`

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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dossier (dossier@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and

Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.
Thomas Funke (thf@zelator.in-berlin.de(?)) and
Brian D. Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.
Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.
Bill Janssen (janssen@parc.xerox.com) supplied
the SunOS dynamic loader
specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and
Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and
Dave Detlefs (detlefs@src.dec.com) also provided several generic bug fixes.
Alistair G. Crooks (agc@uts.amdahl.com) supplied the NetBSD and 386BSD ports.
Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.
Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to
a Motorola 88K processor running CX/UX (Harris NightHawk).
Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to
nonIBM development environments (a nontrivial task).
Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.
David Chase, then at Olivetti Research, suggested several improvements.
Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the
code to save and print call stacks for leak detection on a SPARC.
Jesse Hull and John Ellis supplied the C++ interface code.
Zhong Shao performed much of the
experimentation that led to the
current typed allocation facility. (His dynamic type inference code hasn't
made it into the released version of the collector, yet.)
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* m4/ax_func_which_gethostbyname_r.m4

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To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

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Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short

notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

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Version 3, 29 June 2007

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An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is

deemed a mode
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

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2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

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The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates

(ten or fewer lines in length), you do both of the following:

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1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
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If the Library as you received it specifies that a proxy can decide

whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

1.165 libcurl 7.29.0-59.el7_9.1

1.165.1 Available under license :

License Mixing with apps, libcurl and Third Party Libraries

=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that GPL[1]-licensed code is not allowed to be linked with code licensed under the Original BSD license (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an exception[2]. This particular problem was addressed when the Modified BSD license was created, which does not have the announcement clause that collides with GPL.

libcurl <http://curl.haxx.se/docs/copyright.html>

Uses an MIT (or Modified BSD)-style license that is as liberal as possible. Some of the source files that deal with KRB4 have Original BSD-style announce-clause licenses. You may not distribute binaries with krb4-enabled libcurl that also link with GPL-licensed code!

OpenSSL <http://www.openssl.org/source/license.html>

(May be used for SSL/TLS support) Uses an Original BSD-style license with an announcement clause that makes it "incompatible" with GPL. You are not allowed to ship binaries that link with OpenSSL that includes GPL code (unless that specific GPL code includes an exception for OpenSSL - a habit that is growing more and more common). If OpenSSL's licensing is a problem for you, consider using GnuTLS or yassl instead.

GnuTLS <http://www.gnutls.org/>

(May be used for SSL/TLS support) Uses the LGPL[3] license. If this is a problem for you, consider using OpenSSL instead. Also note that GnuTLS itself depends on and uses other libs (libcrypt and libpgp-error) and they too are LGPL- or GPL-licensed.

yassl <http://www.yassl.com/>

(May be used for SSL/TLS support) Uses the GPL[1] license. If this is a problem for you, consider using OpenSSL or GnuTLS instead.

NSS <http://www.mozilla.org/projects/security/pki/nss/>

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axTLS <http://axtls.sourceforge.net/>

(May be used for SSL/TLS support) Uses a Modified BSD-style license.

c-ares <http://daniel.haxx.se/projects/c-ares/license.html>

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib http://www.gzip.org/zlib/zlib_license.html

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

krb4

While nothing in particular says that a Kerberos4 library must use any particular license, the one I've tried and used successfully so far (kth-krb4) is partly Original BSD-licensed with the announcement clause. Some of the code in libcurl that is written to deal with Kerberos4 is Modified BSD-licensed.

MIT Kerberos <http://web.mit.edu/kerberos/www/dist/>

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal <http://www.pdc.kth.se/heimdal/>

(May be used for GSS support) Heimdal is Original BSD licensed with the announcement clause.

GNU GSS <http://www.gnu.org/software/gss/>

(May be used for GSS support) GNU GSS is GPL licensed. Note that you may not distribute binary curl packages that uses this if you build curl to also link and use any Original BSD licensed libraries!

fbopenssl

(Used for SPNEGO support) Unclear license. Based on its name, I assume that it uses the OpenSSL license and thus shares the same issues as described for OpenSSL above.

libidn <http://josefsson.org/libidn/>

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the

full LGPL license text. Please properly point out what parts of the distributed package that the license addresses.

OpenLDAP <http://www.openldap.org/software/release/license.html>

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

libssh2 <http://www.libssh2.org/>

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.

[1] = GPL - GNU General Public License: <http://www.gnu.org/licenses/gpl.html>

[2] = <http://www.fsf.org/licenses/gpl-faq.html#GPLIncompatibleLibs> details on how to write such an exception to the GPL

[3] = LGPL - GNU Lesser General Public License:
<http://www.gnu.org/licenses/lgpl.html>

[4] = MPL - Mozilla Public License:
<http://www.mozilla.org/MPL/>

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1.166 libstdc++ 4.8.5-44.el7

1.166.1 Available under license :

Jan 21, 2002

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Version 2.1, February 1999

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When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages

are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

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You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a

table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary

GNU General Public

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object

code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above

specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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Version 2.1, February 1999

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d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under

Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library

facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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Version 2.1, February 1999

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
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- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system,

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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
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However,
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functions (ten lines or less in length), then the use of the object
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(Executables containing this object code plus portions of the
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@page

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@ignore

@c Set file name and title for man page.

@setfilename gfdl

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@c man begin SEEALSO

gpl(7), fsf-funding(7).

@c man end

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@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@c man end

@end ignore

@c Special handling for inclusion in the install manual.

@ifset gfdlhtml

@ifnohtml

@comment node-name, next, previous, up

@node GNU Free Documentation License, Concept Index, Old, Top

@end ifnohtml

@html

<h1 align="center">Installing GCC: GNU Free Documentation License</h1>

@end html

@ifnohtml

@unnumbered GNU Free Documentation License

@end ifnohtml

@end ifset

@c man begin DESCRIPTION
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@node GNU Free Documentation License
@unnumbered
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@end ifclear

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Packaging is done by the Debian GCC Maintainers <debian-gcc@lists.debian.org>, with sources obtained from:

<ftp://gcc.gnu.org/pub/gcc/releases/> (for full releases)

<svn://gcc.gnu.org/svn/gcc/> (for prereleases)

<http://bitbucket.org/goshawk/gdc> (for D)

The current gcc-4.8 source package is taken from the SVN gcc-4_8-branch.

Changes: See [changelog.Debian.gz](#)

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

| Language | Compiler package | Library package | Documentation |
|---------------|------------------|-----------------|--------------------|
| Ada | gnat-4.8 | | |
| | libgnat-4.8 | gnat-4.8-doc | |
| C | gcc-4.8 | | gcc-4.8-doc |
| C++ | g++-4.8 | libstdc++6 | libstdc++6-4.8-doc |
| D | gdc-4.8 | | |
| Fortran 95 | gfortran-4.8 | libgfortran3 | gfortran-4.8-doc |
| Go | gccgo-4.8 | libgo0 | |
| Java | gcj-4.8 | libgcj10 | libgcj-doc |
| Objective C | gobjc-4.8 | libobjc2 | |
| Objective C++ | gobjc++-4.8 | | |

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

| Language | Sources | Development | Debugging | Position-Independent |
|----------|-------------------|--------------------|--------------------|----------------------|
| C++ | | libstdc++6-4.8-dbg | libstdc++6-4.8-pic | |
| D | libphobos-4.8-dev | | | |
| Java | libgcj10-src | libgcj10-dev | libgcj10-dbg | |

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

 GCC intrinsics (platform-dependent)

gcc-4.8-base Base files common to all compilers
gcc-4.8-soft-float Software floating point (ARM only)
gcc-4.8-source The sources with patches

Ada:

libgnatvsn-dev, libgnatvsn4.8 GNAT version library
libgnatprj-dev, libgnatprj4.8 GNAT Project Manager library

C:

cpp-4.8, cpp-4.8-doc GNU C Preprocessor
libmudflap0-dev, libmudflap0 Library for instrumenting pointers
libssp0-dev, libssp0 GCC stack smashing protection library
libquadmath0 Math routines for the __float128 type
fixincludes Fix non-ANSI header files
protoize Create/remove ANSI prototypes from C code

Java:

gij The Java bytecode interpreter and VM
libgcj-common Common files for the Java run-time
libgcj10-awt The Abstract Windowing Toolkit
libgcj10-jar Java ARchive
for the Java run-time

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library
libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
- libobjc
- libmudflap
- libgfortran
- The libgnat-4.8 Ada support library and libgnatvsn library.
- Various config files in gcc/config/ used in runtime libraries.

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Written by Tobias Burnus <burnus@net-b.de>

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Changes for 128-bit __float128 are

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- * Conversion to long double by Ulrich Drepper,
- * Cygnus Support, drepper@cygnus.com.

cosq_kernel.c, expq.c, sincos_table.c, sincosq.c, sincosq_kernel.c, sinq_kernel.c, truncq.c:

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isinfq.c:

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Cephes Math Library Release 2.2: January, 1991
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Adapted for glibc November, 2001

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gcc/go/gofrontend, libgo:

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D:
gdc-4.8 GNU D Compiler
libphobos-4.8-dev D standard runtime library

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- d/*

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- `d/dmd/*`

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The Zlib data compression library:
- `d/phobos/etc/c/zlib/*`

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The Phobos standard runtime library:
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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

Thomas Funke (thf@zelator.in-berlin.de(?)) and Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task).

Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.

David Chase, then at Olivetti Research, suggested several improvements.

Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC.

Jesse Hull and John Ellis supplied the C++ interface code.

Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.)

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David Megginson,
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```
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it
under certain conditions; type `show c' for details.
```

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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

```
#1: 32 7648 0x83
#2: 7680 8704 0xa5
#5: 7936 4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 | | 2048 | 4095 | 1024 | 83 | Linux |

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|-------------|------|-------|-------|--------|----|---------|
| __ts_dev__1 | | 2048 | 4095 | 1024 | 83 | Linux |
| __ts_dev__2 | | 4096 | 20479 | 8192 | a5 | FreeBSD |

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| # | start | end | size | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| c: | 4096 | 20479 | 16384 | unused | 0 | 0 | |
| d: | 0 | 16064 | 16065 | unused | 0 | 0 | |

BSD disklabel command (m for help):

Command (m for help):

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| # | start | end | size | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096 | 6144 | 2049 | 4.2BSD | 0 | 0 | 0 |
| c: | 4096 | 20479 | 16384 | unused | 0 | 0 | |
| d: | 0 | 16064 | 16065 | unused | 0 | 0 | |

BSD disklabel command (m for help):

Command (m for help):

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

| | | | | | | | |
|---|-----------|----------------|--------|---------|----------|------|-------|
| 0 | unused | 5 | 4.1BSD | 9 | 4.4LFS | d | boot |
| 1 | swap | | | | | | |
| | 6 | Eighth Edition | a | unknown | e | ADOS | |
| 2 | Version 6 | 7 | 4.2BSD | b | HPFS | f | HFS |
| 3 | Version 7 | 8 | MS-DOS | c | ISO-9660 | 10 | AdvFS |

4 System V

BSD disklabel command (m for help):

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*/

1.168 libcom-err 1.42.9-19.e17

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Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

#1: 32 7648 0x83
#2: 7680 8704 0xa5
#5: 7936 4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 | | 2048 | 4095 | 1024 | 83 | Linux |

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|-------------|------|-------|-------|--------|----|---------|
| __ts_dev__1 | | 2048 | 4095 | 1024 | 83 | Linux |
| __ts_dev__2 | | 4096 | 20479 | 8192 | a5 | FreeBSD |

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

start end size fstype [fsize bsize cpg]

c: 4096 20479 16384 unused 0 0

d: 0

16064 16065 unused 0 0

BSD disklabel command (m for help):

Command (m for help):

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| # | start | end | size | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096 | 6144 | 2049 | 4.2BSD | 0 | 0 | 0 |
| c: | 4096 | 20479 | 16384 | unused | 0 | 0 | |
| d: | 0 | 16064 | 16065 | unused | 0 | 0 | |

BSD disklabel command (m for help):

Command (m for help):

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

| | | | | | | | |
|---|-----------|----------------|--------|---------|----------|------|-------|
| 0 | unused | 5 | 4.1BSD | 9 | 4.4LFS | d | boot |
| 1 | swap | | | | | | |
| | 6 | Eighth Edition | a | unknown | e | ADOS | |
| 2 | Version 6 | 7 | 4.2BSD | b | HPFS | f | HFS |
| 3 | Version 7 | 8 | MS-DOS | c | ISO-9660 | 10 | AdvFS |
| 4 | System V | | | | | | |

BSD disklabel command (m for help):

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- */

1.170 jersey-container-servlet 2.33

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1.176 device-mapper 1.02.170-6.el7_9.5

1.176.1 Available under license :

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```
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```

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```
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```

```
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1.177 device-mapper-libs 1.02.170-6.el7_9.5

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Because

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1.178 Iz4-java 1.7.1

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1.179 rxjava 1.3.8

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jar/rx/internal/operators/OnSubscribeReduce.java
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jar/rx/internal/util/SuppressAnimalSniffer.java
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jar/rx/internal/operators/OnSubscribeConcatMap.java
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*
* Original License: https://github.com/JCTools/JCTools/blob/master/LICENSE
* Original location: https://github.com/JCTools/JCTools/blob/master/jctools-

```

core/src/main/java/org/jctools/util/Pow2.java

*/

Found in path(s):

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/unsafe/Pow2.java

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*/

Found in path(s):

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableOnSubscribeConcat.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleOperatorCast.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observables/ConnectableObservable.java

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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableOnSubscribeMergeArray.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func7.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaPlugins.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subscriptions/BooleanSubscription.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/MissingBackpressureException.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSkipWhile.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorAsObservable.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorToObservableSortedList.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorElementAt.java

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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/BufferUntilSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorObserveOn.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/SubscriptionList.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/util/ScalarSynchronousObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorDoOnSubscribe.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/CompletableOnSubscribeConcatIterable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorWithLatestFromMany.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/IndexedRingBuffer.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/util/BackpressureDrainManager.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorTakeUntil.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorSubscribeOn.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorReplay.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/exceptions/UnsubscribeFailedException.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorTakeLast.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeFromArray.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Subscription.java
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jar/rx/internal/operators/CompletableOnSubscribeMergeDelayErrorIterable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/schedulers/Schedulers.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func4.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeSingle.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSkip.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Producer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeTimeoutTimedWithFallback.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeAmb.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorIgnoreElements.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-

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jar/rx/internal/operators/OperatorDoOnRequest.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeToMap.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Completable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/PublishSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func6.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/schedulers/NewThreadScheduler.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/Subject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorOnBackpressureBuffer.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action9.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/schedulers/TimeInterval.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Observer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorAll.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/NotificationLite.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action5.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func0.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func9.java
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jar/rx/internal/operators/OperatorTimestamp.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Scheduler.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/SerializedSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Functions.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func8.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action4.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeDefer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/RxRingBuffer.java
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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorDematerialize.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeGroupJoin.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeRange.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action3.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeFromIterable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/BlockingOperatorLatest.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/Subscribers.java
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 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleOnSubscribeMap.java
 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorOnBackpressureDrop.java
 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/OnCompletedFailedException.java
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 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorToObservableList.java
 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSkipLast.java
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 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
 jar/rx/exceptions/OnErrorNotImplementedException.java
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 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorAny.java
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 * /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action6.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observables/GroupedObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/EventLoopsScheduler.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/BlockingOperatorToFuture.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaObservableExecutionHookDefault.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/ReplaySubject.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorTimeInterval.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeFilter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/BlockingOperatorToIterator.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/SafeSubscriber.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableOnSubscribeMergeDelayErrorArray.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/GenericScheduledExecutorService.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorTakeLastTimed.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CachedObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/LinkedList.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorTakeUntilPredicate.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func1.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subscriptions/Subscriptions.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/Exceptions.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/subscriptions/SerialSubscription.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/subscriptions/CompositeSubscription.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorSkipLastTimed.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorMerge.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/exceptions/CompositeException.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/OnErrorThrowable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/schedulers/NewThreadScheduler.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/UnicastSubject.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/exceptions/OnErrorFailedException.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/schedulers/SleepingAction.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action0.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/TestSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/AsyncSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/BlockingOperatorNext.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/ActionN.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorOnErrorResumeNextViaFunction.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeToObservableFuture.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/SerializedSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/CompletableOnSubscribeConcatArray.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/FuncN.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorScan.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/schedulers/TrampolineScheduler.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorTake.java
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*/

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/SpSCUnboundedAtomicArrayQueue.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/LinkedQueueNode.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/singles/BlockingSingle.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observables/AsyncOnSubscribe.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/BlockingUtils.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/SingleSubscriber.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/CompletableSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/SingleEmitter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableFromEmitter.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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This package contains code that relies on `sun.misc.Unsafe`. Before using it you **MUST** assert
`UnsafeAccess.isUnsafeAvailable() == true`

Much of the code in this package comes from or is inspired by the JCTools project:

<https://github.com/JCTools/JCTools>

JCTools has now published artifacts (<https://github.com/JCTools/JCTools/issues/17>) so RxJava could add JCTools
as a "shadow" dependency (<https://github.com/ReactiveX/RxJava/issues/1735>).

RxJava has a "zero dependency" policy for the core library, so if we do add it as a dependency, it won't be an
externally visible dependency that results in a separate jar.

The license for the JCTools code is <https://github.com/JCTools/JCTools/blob/master/LICENSE>

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[core/src/main/java/org/jctools/queues/ConcurrentCircularArrayQueue.java](https://github.com/JCTools/JCTools/blob/master/jctools-core/src/main/java/org/jctools/queues/ConcurrentCircularArrayQueue.java)

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*/

Found in path(s):

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/AtomicReferenceArrayQueue.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/unsafe/SpSCUnboundedArrayQueue.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/util/ScalarSynchronousSingle.java
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 * Original location: https://github.com/JCTools/JCTools/blob/master/jctools-
core/src/main/java/org/jctools/queues/atomic/SpscLinkedAtomicQueue.java
 */
```

Found in path(s):

```
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/util/atomic/SpscLinkedAtomicQueue.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/QueuedValueProducer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/ProducerObserverArbiter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/QueuedProducer.java
*

/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/BackpressureUtils.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/ProducerArbiter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/SingleProducer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/SingleDelayedProducer.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorBufferWithTime.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorMulticast.java

*

/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorMapPair.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorEagerConcatMap.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDistinct.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/ScheduledAction.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSampleWithObservable.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeTimerPeriodically.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/ExecutorScheduler.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorBufferWithSize.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDebounceWithSelector.java

*

/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDebounceWithTime.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-

```

jar/rx/internal/operators/OperatorWindowWithStartEndObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/RxThreadFactory.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeDelaySubscription.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorWindowWithObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeDelaySubscriptionOther.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeSkipTimed.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorSkipUntil.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeTimerOnce.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorWindowWithObservableFactory.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorDistinctUntilChanged.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/SingleOnSubscribeDelaySubscriptionOther.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorPublish.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorBufferWithStartEndObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/PlatformDependent.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorRetryWithPredicate.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeDelaySubscriptionWithSelector.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorBufferWithSingleObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorDelayWithSelector.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorDoAfterTerminate.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorTakeTimed.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorWindowWithSize.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorSwitch.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/schedulers/NewThreadWorker.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorOnBackpressureLatest.java

```


* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSampleWithTime.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorWindowWithTime.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorWithLatestFrom.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeRefCount.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/SpscLinkedListArrayQueue.java
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core/src/main/java/org/jctools/queues/MessagePassingQueue.java  
*/
```

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/unsafe/MessagePassingQueue.java
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```
/**
 * This plugin class provides 2 ways to customize {@link Scheduler} functionality
 * 1. You may redefine entire schedulers, if you so choose. To do so, override
 * the 3 methods that return Scheduler (io(), computation(), newThread()).
 * 2. You may wrap/decorate an {@link Action0}, before it is handed off to a Scheduler. The
 system-
 * supplied Schedulers (Schedulers.ioScheduler, Schedulers.computationScheduler,
 * Scheduler.newThreadScheduler) all use this hook, so it's a convenient way to
 * modify Scheduler functionality without redefining Schedulers wholesale.
 *
 * Also, when redefining Schedulers, you are free to use/not use the onSchedule decoration hook.
 * <p>
 * See {@link RxJavaPlugins} or the RxJava GitHub Wiki for information on configuring plugins:
 * <a
 href="https://github.com/ReactiveX/RxJava/wiki/Plugins">https://github.com/ReactiveX/RxJava/wiki/Plugins</a>.
 */
```

Found in path(s):

```
*/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaSchedulersHook.java
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*/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/UtilityFunctions.java
*/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Observable.java
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Found in path(s):

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/SpSCExactAtomicArrayQueue.java

*

/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/SpSCAtomicArrayQueue.java

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*/

Found in path(s):

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeDetach.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Emitter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleTakeUntilObservable.java
*
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observables/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/SafeCompletableSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ActionObserver.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeThrow.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleTakeUntilCompletable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableFlatMapSingleToCompletable.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/annotations/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/InternalObservableUtils.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/BackpressureOverflow.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaCompletableExecutionHook.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleDoOnUnsubscribe.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/subscriptions/Unsubscribed.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeLift.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleLiftObservableOperator.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaSingleExecutionHook.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleOnErrorReturn.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeOnAssembly.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeOnAssemblyCompletable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromEmitter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeCreate.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ActionNotificationObserver.java
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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleObserveOn.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/GenericScheduledExecutorServiceFactory.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/AssertableSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaSingleExecutionHookDefault.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/observers/AssertableSubscriberObservable.java

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromCallable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ObserverSubscriber.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/AssemblyStackTraceException.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromFuture.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleTakeUntilSingle.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Cancellable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/EmptyObservableHolder.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleToObservable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/SchedulerWhen.java
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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/NeverObservableHolder.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/AsyncCompletableSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/SchedulePeriodicHelper.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeFlattenIterable.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaHooks.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/singles/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subscriptions/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleDelay.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleTimeout.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleDoOnSubscribe.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ActionSubscriber.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorGroupByEvicting.java

1.180 servlet-api 4.0.1

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1.182 common-utils 6.2.1

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1.183 namespace 1.4.01

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@c ispell-local-pdict: "ispell-dict"

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Any

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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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This option is useful when you wish to copy part of the code of the

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative

work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under

Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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END OF TERMS AND CONDITIONS

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<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

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Version 3, 29 June 2007

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The

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b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as

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c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

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```
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```

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@appendixsubsec Preamble

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That's all there is to it!

(This file is under construction.) -*- text -*-

If you've contributed to gas and your name isn't listed here, it is not meant as a slight. I just don't know about it. Email me, nickc@redhat.com and I'll correct the situation.

This file will eventually be deleted: The general info will go into the documentation, and info on specific files will go into an AUTHORS file, as requested by the FSF.

+++++

Dean Elsner wrote the original gas for vax. [more details?]

Jay Fenlason maintained gas for a while, adding support for gdb-specific debug information and the 68k series machines, most of the preprocessing pass, and extensive changes in messages.c, input-file.c, write.c.

K. Richard Pixley maintained gas for a while, adding various

enhancements and many bug fixes, including merging support for several processors, breaking gas up to handle multiple object file format backends (including heavy rewrite, testing, an integration of the coff and b.out backends), adding configuration including heavy testing and verification of cross assemblers and file splits and renaming, converted gas to strictly ansi C including full prototypes, added support for m680[34]0 & cpu32, considerable work on i960 including a coff port (including considerable amounts of reverse engineering), a sparc opcode file rewrite, decstation, rs6000, and hp300hpux host ports, updated "know" assertions and made them work, much other reorganization, cleanup, and lint.

Ken Raeburn wrote the high-level BFD interface code to replace most of the code in format-specific I/O modules.

The original Vax-VMS support was contributed by David L. Kashtan. Eric Youngdale and Pat Rankin have done much work with it since.

The Intel 80386 machine description was written by Eliot Dresselhaus.

Minh Tran-Le at IntelliCorp contributed some AIX 386 support.

The Motorola 88k machine description was contributed by Devon Bowen of Buffalo University and Torbjorn Granlund of the Swedish Institute of Computer Science.

Keith

Knowles at the Open Software Foundation wrote the original MIPS back end (tc-mips.c, tc-mips.h), and contributed Rose format support that hasn't been merged in yet. Ralph Campbell worked with the MIPS code to support a.out format.

Support for the Zilog Z8k and Hitachi H8/300, H8/500 and SH processors (tc-z8k, tc-h8300, tc-h8500, tc-sh), and IEEE 695 object file format (obj-ieee), was written by Steve Chamberlain of Cygnus Solutions. Steve also modified the COFF back end (obj-coffbfd) to use BFD for some low-level operations, for use with the Hitachi, 29k and Zilog targets.

John Gilmore built the AMD 29000 support, added .include support, and simplified the configuration of which versions accept which pseudo-ops. He updated the 68k machine description so that Motorola's opcodes always produced fixed-size instructions (e.g. jsr), while synthetic instructions remained shrinkable (jbsr). John fixed many bugs, including true tested cross-compilation support, and one bug in relaxation

that took a week and required the proverbial one-bit fix.

Ian Lance Taylor of Cygnus Solutions merged the Motorola and MIT syntaxes for the 68k, completed support for some COFF targets (68k, i386 SVR3, and SCO Unix), wrote the ECOFF support based on Michael Meissner's mips-tfile program, wrote the PowerPC and RS/6000 support, and made a few other minor patches. He handled the binutils releases for versions 2.7 through 2.9.

David Edelsohn contributed fixes for the PowerPC and AIX support.

Steve Chamberlain made gas able to generate listings.

Support for the HP9000/300 was contributed by Glenn Engel of HP.

Support for ELF format files has been worked on by Mark Eichin of Cygnus Solutions (original, incomplete implementation), Pete Hoogenboom at the University of Utah (HPPA mainly), Michael Meissner of the Open Software Foundation (i386 mainly), and Ken Raeburn of Cygnus Solutions (sparc, initial 64-bit support).

Several engineers at Cygnus Solutions have also provided many small bug fixes and configuration enhancements.

The initial Alpha support was contributed by Carnegie-Mellon University. Additional work was done by Ken Raeburn of Cygnus Solutions. Richard Henderson then rewrote much of the Alpha support.

Ian Dall updated the support code for the National Semiconductor 32000 series, and added support for Mach 3 and NetBSD running on the PC532.

Klaus Kaempf ported the assembler and the binutils to openVMS/Alpha.

Steve Haworth contributed the support for the Texas Instruction c30 (tms320c30).

H.J. Lu has contributed many patches and much testing.

Alan Modra reworked much of the i386 backend, improving the error checking, updating the code, and improving the 16 bit support, using patches from the work of Martynas Kunigelis and H.J. Lu.

Many others have contributed large or small bugfixes and enhancements. If you've contributed significant work and are not mentioned on this list, and want to be, let us know. Some of the history has been lost; we aren't intentionally leaving anyone out.

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1.187 icu4j 69.1

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Implementation-Title: Netty/All-in-One

Bundle-Description: Netty is an asynchronous event-driven network application framework for rapid development of maintainable high performance protocol servers and clients.

Automatic-Module-Name:

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0>

Bundle-SymbolicName: io.netty.all

Implementation-Version: 4.1.70.Final

Built-By: norman

Bnd-LastModified: 1635932641304

Bundle-ManifestVersion: 2

Implementation-Vendor-Id: io.netty

Bundle-DocURL: <https://netty.io/>

Bundle-Vendor: The Netty Project

Import-Package: sun.nio.ch;resolution:=optional,org.eclipse.jetty.npn;version="[1,2)";resolution:=optional,org.eclipse.jetty.alpn;version="[1,2)";resolution:=optional

Tool: Bnd-2.4.1.201501161923

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Bundle-Name: Netty/All-in-One

Bundle-Version: 4.1.70.Final

Created-By: Apache Maven Bundle Plugin

Build-Jdk:

1.8.0_252

Implementation-URL: <https://netty.io/netty-all/>

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Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to

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<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.191 jackson 2.15.0

1.191.1 Available under license :

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Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers.

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1.192 rpm 4.11.3-48.el7_9

1.192.1 Available under license :

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Version 2, June 1991

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```
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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

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c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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1.193 libxml2 2.9.1-6.el7_9.6

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1.194 log4j-api 2.17.1

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1.195 apache-log4j 2.17.1

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1.196 log4j-jcl 2.17.1

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This is the Info-ZIP file COPYING (for UnZip), last updated 17 Jul 2000.

FIRST NOTE:

This file contains some details about the copyright history of contributions to the UnZip project.

Additionally, it summarises some exceptions to the general BSD-like copyright found in LICENSE that covers our generic code and most of the system specific ports.

Please read LICENSE first to find out what is allowed to do with Info-ZIP's UnZip code.

There are currently two explicit copyrights on portions of UnZip code (at least, of which Info-ZIP is aware):

Jim Luther's Mac OS File Manager interface code; and Christopher Evans' MacBinaryIII coding code (for the MacOS port).. These copyrights are discussed in more detail below.

All remaining code is now (starting with UnZip version 5.41) covered by the new Info-ZIP license. For details, please read the accompanying file LICENSE. The terms and conditions in this license supersede the copyright conditions of the contributions by Igor Mandrichenko

(vms/vms.c), Greg Roelofs (zipinfo.c, new version of unshrink.c), Mike White (Windows DLL code in "windll/*"), Steve P. Miller (Pocket UnZip GUI "wince/*"), and Mark Adler (inflate/explode decompression core routines, previously put into the public domain). All these Info-ZIP contributors (or "primary" authors) have permitted us to replace their copyright notes by the Info-ZIP License.

Frequently Asked Questions regarding (re)distribution of Zip and UnZip are near the end of this file.

There are no known patents on any of the code in UnZip. Unisys claims a patent on LZW encoding and on LZW decoding in an apparatus that performs LZW encoding, but the patent appears to exempt a stand-alone decoder (as in UnZip's unshrink.c). Unisys has publicly claimed otherwise, but the issue has never been tested in court. Since this point is unclear, unshrinking is not enabled by default. It is the responsibility of the user to make his or her peace with Unisys and its licensing requirements. (unshrink.c may be removed from future releases altogether.)

The original unzip source code has been extensively modified and almost entirely rewritten (changes include random zipfile access rather than sequential; replacement of unimplode() with explode(); replacement of old unshrink() with new (unrelated) unshrink(); replacement of output routines; addition of inflate(), wildcards, filename-mapping, text translation, ...; etc.). As far as we can tell, only the core code of the unreduce method remained substantially similar to Mr. Smith's original source. As of UnZip

5.42, the complete

core code is now covered by the Info-ZIP Licence. Therefore, support for the reduce method has been removed.

The drop of the reduce method should only affect some test archives, reducing was never used in any publically distributed Zip program.

For pathologic cases where support for reduced archive entries is needed, the unreduce code copyrighted by Samuel H. Smith is available as a separate distribution (the restricted copyright of this code is cited below in the "historical" section).

The following copyright applies to the Mac OS File Manager interface code (macos/source/macstuff.[ch]), distributed with UnZip 5.4 and later:

```
* MoreFiles
*
* A collection of File Manager and related routines
*
* by Jim Luther (Apple Macintosh Developer Technical Support Emeritus)
* with significant code contributions by Nitin Ganatra
```

* (Apple Macintosh Developer Technical Support Emeritus)

* Copyright 1992-1998

Apple Computer, Inc.

* Portions copyright 1995 Jim Luther

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*

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* changes."

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Info-ZIP license, they do not add further restrictions.

The following

copyright applies to the Mac OS "macbin3" decoding code

(extra field compatibility with ZipIt):

* MacBinaryIII.h

*

* Copyright 1997 Christopher Evans (cevens@poppybank.com)

*

* Basic encoding and decoding of Macintosh files to the

* MacBinary III spec.

* -----

* This source is copyrighted by Christopher Evans (cevens@poppybank.com)

* (available at ftp://ftp.lazerware.com/MacBinaryIII_src_C.sit

* homepage of Leonard Rosenthol leonardr@netcom.com)

This copyright note does not contain any usage terms. So, we assume
that this code is freely reusable until we are proved wrong...

The remaining copyright notes have been superseded by the new

Info-ZIP license, with explicit permission from the respective

original authors. They are cited here for historical reasons,

only:

The following copyright applies to the full-featured unreduce.c
(now distributed separately):

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- *
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- * If you use this in your own program you must distribute source code.
- * Do not use any of this in a commercial product.

Regarding the first stipulation, Mr. Smith was tracked down in southern California some years back [Samuel H. Smith, The Tool Shop; as of mid-May 1994, (213) 851-9969 (voice), (213) 887-2127(?) (subscription BBS), 71150.2731@compuserve.com]:

"He says that he thought that whoever contacted him understood that he has no objection to the Info-ZIP group's inclusion of his code. His primary concern is that it remain freely distributable, he said."

Despite the fact that our "normal" code has been entirely rewritten and by default no longer contains any of Mr. Smith's code, Info-ZIP remains indebted and grateful to him. We hope he finds our contributions as useful as we have his.

Note that the third and fourth stipulations still apply to any company that wishes to incorporate the unreduce code into its products; if you wish to do so, you must contact Mr. Smith directly regarding licensing.

The following copyright applied to most of the VMS code in vms.c, distributed with UnZip version 4.2 and later:

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The following copyright applied to the new version of unshrink.c, distributed with UnZip version 5.2 and later:

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- * problems understanding this can contact me through Zip-Bugs...

The following copyright applied to the Windows DLL code (windll/*), distributed with UnZip version 5.2 and later:

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The following copyright applied to the Windows CE GUI port, ``Pocket UnZip," distributed with UnZip version 5.3 and later:

- * All the source files for Pocket UnZip, except for components
- * written by the Info-ZIP group, are copyrighted 1997 by Steve P.
- * Miller. The product "Pocket UnZip" itself is property of the
- * author and cannot be altered in any way without written consent
- * from Steve P. Miller.

The remaining code was written by many people associated with the Info-ZIP group, with large contributions from (but not limited to): Greg Roelofs (overall program logic, ZipInfo, unshrink, filename mapping/portability, etc.), Mark Adler (inflate, explode, funzip), Kai Uwe Rommel (OS/2), John Bush and Paul Kienitz (Amiga), Antoine Verheijen (Macintosh), Hunter Goatley (more VMS), Mike White (Windows DLLs), Christian Spieler (overall logic, optimization, VMS, etc.) and others. See the file CONTRIBS in the source distribution for a much more complete list of contributors.

The decompression core code for the deflate method (inflate.[ch], explode.c) was originally written by Mark Adler who submitted it as public domain code.

1.198 dom 1.0

1.198.1 Available under license :

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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/w3c/dom/html/HTMLDOMImplementation.java

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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ElementEditAS.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASNotationDeclaration.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASObject.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/CharacterDataEditAS.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DOMImplementationAS.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASModel.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DocumentAS.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASAttributeDeclaration.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASElementDeclaration.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASEntityDeclaration.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASNamedObjectMap.java
*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASDataType.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASContentModel.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DOMASWriter.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DocumentEditAS.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASObjectList.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DOMASBuilder.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DOMASException.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/NodeEditAS.java

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*/

/**

```
* Checks if this content model has had its min/maxOccurs values reduced for
* purposes of speeding up UPA. If
so, this content model should not be used
* for any purpose other than checking unique particle attribution
*
* @return a boolean that says whether this content has been compacted for UPA
*/
```

Found in path(s):

```
*/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/models/XSCMValidator.java
```

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```
/*
```

```
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```

```
*/
```

```
/**
```

```
* DOM Level 3 LS CR - Experimental.
* Create a new LSParser. The newly constructed parser may
*
then be configured by means of its DOMConfiguration
* object, and used to parse documents by means of its parse
* method.
* @param mode The mode argument is either
* MODE_SYNCHRONOUS or MODE_ASYNCHRONOUS, if
* mode is MODE_SYNCHRONOUS then the
* LSParser that is created will operate in synchronous
* mode, if it's MODE_ASYNCHRONOUS then the
* LSParser that is created will operate in asynchronous
* mode.
* @param schemaType An absolute URI representing the type of the schema
* language used during the load of a Document using the
* newly created LSParser. Note that no lexical checking
* is done on the absolute URI. In order to create a
* LSParser for any kind of schema types (i.e. the
```

- * LSParser will be free to use any schema found), use the value
- * `<code>null</code>.`
- * `<p>Note: For W3C XML Schema [XML Schema Part 1]`
- * , applications must use the value
- * `<code>"http://www.w3.org/2001/XMLSchema"</code>.` For XML DTD [[XML 1.0](http://www.w3.org/TR/2000/REC-xml-20001006/)],
- * applications must use the value
- * `<code>"http://www.w3.org/TR/REC-xml"</code>.` Other Schema languages
- * are outside the scope of the W3C and therefore should recommend an
- * absolute URI in order to use this method.
- * `@return` The newly created `<code>LSParser</code>` object. This
- * `<code>LSParser</code>` is either synchronous or asynchronous
- * depending on the value of the `<code>mode</code>` argument.
- * `<p>Note: By default, the newly created <code>LSParser</code>`
- * does not contain a `<code>DOMErrorHandler</code>`, i.e. the value of
- * the "[<code>null</code>. However, implementations](http://www.w3.org/TR/2003/WD-DOM-Level-3-Core-20030609/core.html#parameter-error-handler'>error-handler'>)
- * may provide a default error handler at creation time. In that case,
- * the initial value of the `<code>"error-handler"</code>` configuration
- * parameter on the new created `<code>LSParser</code>` contains a
- * reference to the default error handler.
- * `@exception` DOMException
- * NOT_SUPPORTED_ERR: Raised if the requested mode or schema type is
- * not supported.
- */

Found in path(s):

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/CoreDOMImplementationImpl.java

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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDDocumentInfo.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDElementTraverser.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/parser/XMLErrorHandler.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLFrameElementImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/XMLEntityDescriptionImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/ShadowedSymbolTable.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/util/ObjectListImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/dom/WMLImgElementImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLOptgroupElement.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/parser/XMLInputSource.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLImgElement.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DeferredCDATASectionImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDAbstractIDConstraintTraverser.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/dom/WMLTimerElementImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/XSParticle.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/dom/WMLWmlElementImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/AnySimpleDV.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/StringList.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLTimerElement.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xpath/regex/CaseInsensitiveMap.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-

jar/org/apache/xerces/impl/xs/opti/SchemaDOMImplementation.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/impl/xs/opti/DefaultXMLDocumentHandler.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/dom/DeferredElementImpl.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/wml/WMLAnchorElement.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xml/serialize/HTMLSerializer.java
 *
 /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/html/dom/HTMLHtmlElementImpl.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/stax/DefaultNamespaceContext.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/xinclude/MultipleScopeNamespaceSupport.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/impl/xs/opti/SchemaParsingConfig.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/impl/dtd/XML11NSDTDValidator.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/xpointer/XPointerMessageFormatter.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/xs/XSException.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/wml/dom/WMLMetaElementImpl.java
 *
 /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/html/dom/HTMLQuoteElementImpl.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/util/EncodingMap.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/xinclude/XIncludeTextReader.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/dom/DOMInputImpl.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/html/dom/ObjectFactory.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/xpointer/XPointerHandler.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/util/XMLCatalogResolver.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
 jar/org/apache/xerces/jaxp/TeeXMLDocumentFilterImpl.java
 *
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/XMLDocumentFragmentScannerImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/ValidationContext.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/grammars/Grammar.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/dom/WMLAccessElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xpath/regex/Match.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/XSMessagesFormatter.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xml/serialize/TextSerializer.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/stax/events/NamespaceImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/XSAttributeDeclaration.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/JAXPConstants.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLAElement.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/EntityResolverWrapper.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DOMOutputImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DOMImplementationImpl.java
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/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/SecuritySupport.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/ExternalSubsetResolver.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/NodeListCache.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/PSVIElementNSImpl.java
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 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/XMLLocator.java
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 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/ItemPSVI.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/URI.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLObjectElementImpl.java
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 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLBuilder.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/validation/WeakReferenceXMLSchema.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/datatypes/XSQName.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/NodeIteratorImpl.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/DefaultErrorHandler.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xpath/regex/BMPattern.java
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 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/validation/SimpleXMLSchema.java
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 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/YearMonthDurationDV.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDWildcardTraverser.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLHeadingElementImpl.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/XSFacets.java
 * /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/ElementPSVI.java
 *
 /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLRefreshElement.java
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-

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jar/org/apache/xerces/impl/xs/traversers/XSDAbstractTraverser.java
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*
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jar/org/apache/xerces/impl/dtd/XMLDTDDescription.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/wml/dom/WMLRefreshElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/ParserForXMLSchema.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom/DOMNormalizer.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/IntegerDV.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/jaxp/DocumentBuilderFactoryImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/html/dom/HTMLIsIndexElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dtd/models/SimpleContentModel.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom/DeferredDocumentImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/xs/XSSimpleTypeDefinition.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/stax/EmptyLocation.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xml/serialize/SerializerFactory.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/util/HTTPInputSource.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xml/serialize/Encodings.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/xs/XSAttributeUse.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xml/serialize/BaseMarkupSerializer.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/stax/events/CharactersImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom/DeferredDOMImplementationImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/stax/XMLEventFactoryImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/util/JAXPNamespacerContextWrapper.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/Namespacesupport.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/XMLDocumentHandler.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DOMLocatorImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/util/LSInputListImpl.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/XSDeclarationPool.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/validation/JAXPValidationMessageFormatter.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dtd/models/CMBinOp.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/ExtendedSchemaDVFactoryImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dtd/XML11DTDValidator.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/EntityDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/SymbolTable.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/AnyURIDV.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/XMLEntityScanner.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/XMLEntityManager.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/XSAttributeDecl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xinclude/XIncludeNamespacesupport.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/models/XSEmptyCM.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLOptGroupElementImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/DVFactoryException.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLDocumentImpl.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/SchemaDateTimeException.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLOptionElement.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-

jar/org/apache/wml/WMLPElement.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/html/dom/HTMLOptionElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/wml/WMLPElement.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/html/dom/HTMLParamElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom/TreeWalkerImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/dtd/XML11DTDDVFactoryImpl.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/ParseException.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/xni/parser/XMLDTDFilter.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dtd/XMLDTDValidator.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/traversers/XSDNotationTraverser.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/xni/grammars/XMLSchemaDescription.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/jaxp/validation/DOMResultBuilder.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/wml/dom/WMLAnchorElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/html/dom/HTMLModElementImpl.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/wml/dom/WMLDocumentImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom/DeferredElementNSImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/html/dom/HTMLTableCaptionElementImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/XMLEntityHandler.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/parsers/StandardParserConfiguration.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/models/XSAllCM.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/opti/AttrImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/wml/dom/WMLFieldsetElementImpl.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/wml/dom/WMLDoElementImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xpath/regex/RangeToken.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/DOMASBuilderImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/NameNodeListImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/dom/WMLDOMImplementationImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/io/UCSReader.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/XIncludeAwareParserConfiguration.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/RevalidationHandler.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/XSValue.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/NodeImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/dtd/XML11IDREFDatatypeValidator.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/parser/XMLConfigurationException.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/AttributesProxy.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/validation/ValidatorImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/XMLGrammarParser.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dtd/XMLSimpleType.java
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/SchemaNamespaceSupport.java
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*/

/**

* used to check the 3 constraints against each complex type
* (should be each model group):
* Unique Particle

Attribution, Particle Derivation (Restriction),

* Element Declarations Consistent.

*/

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*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/YearDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDKeyrefTraverser.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/DateDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/DateDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDUniqueOrKeyTraverser.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/MonthDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/DurationDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/MonthDayDV.java

*

/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/TimeDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSAttributeChecker.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/YearMonthDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/XSModelGroupImpl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/XSSimpleTypeDecl.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDHandler.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/xs/DayDV.java

* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/XMLSchemaValidator.java

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jar/org/apache/xerces/impl/msg/XMLSchemaMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/DOMMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/XPointerMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/DatatypeMessages.properties
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message_fr.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/SAXMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/XIncludeMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/XMLMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/XMLSerializerMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message_ja.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/JAXPValidationMessages.properties
```

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```
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/package-
info.java
```

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* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/WriterReaderPhaser.java

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* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/DoublePercentileIterator.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/SynchronizedHistogram.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/SynchronizedDoubleHistogram.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/HistogramLogReader.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/DoubleLinearIterator.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/Version.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/RecordedValuesIterator.java

*

/opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/IntCountsHistogram.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/AbstractHistogramIterator.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/SingleWriterRecorder.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/Histogram.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/DoubleHistogramIterationValue.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/HistogramLogProcessor.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/HistogramIterationValue.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/ShortCountsHistogram.java

*

/opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/ZigZagEncoding.java

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-

```
jar/org/HdrHistogram/LogarithmicIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/LinearIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/DoubleAllValuesIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/Recorder.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/DoubleHistogram.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/AtomicHistogram.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/DoubleRecorder.java
*
/opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/AbstractHistogram.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/SingleWriterDoubleRecorder.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/ConcurrentDoubleHistogram.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/PercentileIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/AllValuesIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/DoubleRecordedValuesIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/DoubleLogarithmicIterator.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/ConcurrentHistogram.java
* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/AbstractHistogramLogReader.java
*
/opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-
jar/org/HdrHistogram/EncodableHistogram.java
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 */
```

```
package org.HdrHistogram;
```

```
final class Version {
    public static final String version="$VERSION$";
    public static final String build_time="$BUILD_TIMES$";
```

}

Found in path(s):

* /opt/cola/permits/1257262326_1642793354.36/0/hdrhistogram-2-1-8-sources-jar/org/HdrHistogram/Version.java.template

1.200 opentracing-noop 0.31.0

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* /opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/io/opentracing/noop/NoopSpanBuilder.java

* /opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/io/opentracing/noop/NoopSpan.java

* /opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/io/opentracing/noop/NoopScopeManager.java

*

/opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/io/opentracing/noop/NoopSpanContext.java

* /opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/io/opentracing/noop/NoopTracer.java

* /opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/io/opentracing/noop/NoopTracerFactory.java

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* /opt/cola/permits/1257262334_1642793362.32/0/opentracing-noop-0-31-0-sources-jar/META-INF/maven/io.opentracing/opentracing-noop/pom.xml

1.201 argparse 0.8.1

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* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-

jar/net/sourceforge/argparse4j/impl/type/ReflectArgumentType.java

* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-

jar/net/sourceforge/argparse4j/impl/action/CountArgumentAction.java

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* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-

jar/net/sourceforge/argparse4j/impl/type/CaseInsensitiveEnumNameArgumentType.java

* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-

jar/net/sourceforge/argparse4j/impl/type/EnumStringArgumentType.java

* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-

jar/net/sourceforge/argparse4j/impl/type/CaseInsensitiveEnumStringArgumentType.java

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jar/net/sourceforge/argparse4j/impl/type/BooleanArgumentType.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/inf/MetavarInference.java

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* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/PrefixPattern.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/SubparserImpl.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/ConstructorArgumentType.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentGroup.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/VersionArgumentAction.java
*
/opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/UnrecognizedArgumentException.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/Subparsers.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/AppendConstArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/annotation/Arg.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/UnrecognizedCommandException.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentType.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/CJKTextWidthCounter.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/TextWidthCounter.java
*
/opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/StoreArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/Namespace.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/StoreFalseArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/FeatureControl.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/choice/CollectionArgumentChoice.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentChoice.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ArgumentGroupImpl.java
*

/opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/FileVerification.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/EnumArgumentType.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentParserException.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/Subparser.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/ASCIITextWidthCounter.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/ReflectHelper.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ParseState.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/TextHelper.java
*
/opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/StoreTrueArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/ArgumentParsers.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/SubparsersImpl.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/Argument.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ArgumentParserImpl.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/choice/RangeArgumentChoice.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/Arguments.java
*
/opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/AppendArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/StringArgumentType.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentParser.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/HelpArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/StoreConstArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ArgumentImpl.java
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Found in path(s):

* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/type/FileArgumentType.java
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* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-  
jar/net/sourceforge/argparse4j/inf/MutuallyExclusiveGroup.java
```

1.202 jetty-setuid-java 1.0.4

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Found in path(s):

```
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
jar/org/eclipse/jetty/setuid/SetUIDListener.java  
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
jar/org/eclipse/jetty/setuid/SetUIDServer.java  
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
jar/org/eclipse/jetty/setuid/SetUID.java  
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
jar/org/eclipse/jetty/setuid/Group.java  
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
jar/org/eclipse/jetty/setuid/RLimit.java  
*  
/opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
jar/org/eclipse/jetty/setuid/Passwd.java
```

1.203 profiler 1.1.1

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*

* Date: Thu Jun 30 14:16:56 2011 -0400

*/

Found in path(s):

* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/jquery-1.6.2.min.js

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/*

* jQuery Templates Plugin 1.0.0pre

* <http://github.com/jquery/jquery-tmpl>

* Requires jQuery 1.4.2

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* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/jquery.templ.min.js

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```
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/com/google/appengine/tools/appstats/MiniProfilerAppstats.java
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfiler.java
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfilerFilter.java
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/MiniProfilerResourceLoader.java
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfilerServlet.java
```

1.204 jackson-module-afterburner 2.10.5

1.204.1 Available under license :

Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007.

It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

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1.205 jackson-module-parameter-names

2.10.5

1.205.1 Available under license :

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1.206 dagger 2.4

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* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/MapKey.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/MapFactory.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/Component.java

*

/opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/InstanceFactory.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/SingleCheck.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Factory.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/MapProviderFactory.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Collections.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/SetFactory.java

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* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/package-info.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntKey.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/StringKey.java
*
/opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/LongKey.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Beta.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/ClassKey.java
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* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/ProviderOfLazy.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/Bounds.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Preconditions.java
*
/opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/DoubleCheck.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/ElementsIntoSet.java

* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntoMap.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/package-info.java
* /opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntoSet.java
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1.207 paranamer 2.5.1

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jar/com/thoughtworks/paranamer/BytecodeReadingParanamer.java

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* /opt/cola/permits/1257772269_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/AdaptiveParanamer.java

* /opt/cola/permits/1257772269_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/ParameterNamesNotFoundException.java

*

/opt/cola/permits/1257772269_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/CachingParanamer.java

* /opt/cola/permits/1257772269_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/DefaultParanamer.java

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* /opt/cola/permits/1257772269_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/JavadocParanamer.java

1.208 jctools-core 3.3.0

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* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

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* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/ConcurrentCircularArrayQueue.java

* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java

*

/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/spec/Preference.java

* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/package-info.java

* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/spec/Ordering.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/IndexedQueueSizeUtil.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/SpSCChunkedAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpmcUnboundedXaddChunk.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/RangeUtil.java
*
/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/PaddedAtomicLong.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/QueueFactory.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/LinkedQueueNode.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/MpscAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscUnboundedXaddArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MessagePassingQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscBlockingConsumerArrayQueue.java
*
/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscLinkedQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscChunkedArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/SpSCArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/UnsafeRefArrayAccess.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/maps/AbstractEntry.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/maps/NonBlockingSetInt.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
*
/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java

* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/SpmcArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/BaseSpscLinkedListArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/BaseLinkedListQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/maps/NonBlockingHashSet.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/UnsafeJvmInfo.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/BaseMpscLinkedListAtomicArrayQueue.java
 *
 /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MessagePassingQueueUtil.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscCompoundQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/maps/NonBlockingIdentityHashMap.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscUnboundedXaddChunk.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/maps/ConcurrentAutoTable.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/LinkedListQueueAtomicNode.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/SpscLinkedListAtomicQueue.java
 *
 /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/atomic/MpscLinkedListAtomicQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/SpscLinkedListQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscGrowableArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/spec/ConcurrentQueueSpec.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/UnsafeAccess.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpscUnboundedArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/MpmcArrayQueue.java
 * /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/queues/SupportsIterator.java
 *

```
/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/MpscArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/SpSCChunkedArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/util/UnsafeLongArrayAccess.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/atomic/BaseSpSCLinkedAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/SpSCUnboundedArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/InternalAPI.java
*
/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/maps/NonBlockingHashMap.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/SpSCGrowableArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/atomic/SpSCGrowableAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/util/PortableJvmInfo.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/BaseMpscLinkedArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/queues/atomic/SpMCAtomicArrayQueue.java
* /opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-
jar/org/jctools/maps/NonBlockingHashMapLong.java
*
/opt/cola/permits/1257772382_1643010290.62/0/jctools-core-3-3-0-sources-jar/org/jctools/util/Pow2.java
```

1.209 grpc-protobuf-lite 1.37.0

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* /opt/cola/permits/1257772239_1643010288.95/0/grpc-protobuf-lite-1-37-0-sources-
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* /opt/cola/permits/1257772239_1643010288.95/0/grpc-protobuf-lite-1-37-0-sources-
jar/io/grpc/protobuf/lite/ProtoLiteUtils.java
* /opt/cola/permits/1257772239_1643010288.95/0/grpc-protobuf-lite-1-37-0-sources-
jar/io/grpc/protobuf/lite/ProtoInputStream.java
```

1.210 grpc-protobuf 1.37.0

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- * /opt/cola/permits/1257772115_1643010331.15/0/grpc-protobuf-1-37-0-sources-jar/io/grpc/protobuf/ProtoServiceDescriptorSupplier.java
- * /opt/cola/permits/1257772115_1643010331.15/0/grpc-protobuf-1-37-0-sources-jar/io/grpc/protobuf/StatusProto.java
- * /opt/cola/permits/1257772115_1643010331.15/0/grpc-protobuf-1-37-0-sources-jar/io/grpc/protobuf/package-info.java
- *
- /opt/cola/permits/1257772115_1643010331.15/0/grpc-protobuf-1-37-0-sources-jar/io/grpc/protobuf/ProtoMethodDescriptorSupplier.java

1.211 netty-codec 4.1.70.Final

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- * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufDecoderNano.java
- * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java
- *
- /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/ProtocolDetectionResult.java
- * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/HeadersUtils.java
- * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-

jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufVarint32FrameDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/UnsupportedValueConverter.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufVarint32LengthFieldPrepender.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/ProtocolDetectionState.java

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jar/io/netty/handler/codec/string/LineSeparator.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/CodecOutputList.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DatagramPacketDecoder.java

*

/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/string/LineEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DatagramPacketEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/CompressionUtil.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DateFormatter.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ByteBufChecksum.java

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jar/io/netty/handler/codec/compression/Lz4XXHash32.java
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```

Found in path(s):

```
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-  
jar/io/netty/handler/codec/compression/JdkZlibDecoder.java  
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-  
jar/io/netty/handler/codec/xml/XmlFrameDecoder.java  
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-  
jar/io/netty/handler/codec/compression/Crc32c.java
```

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```
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/DeflateOptions.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Brotli.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZstdOptions.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/BrotliEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/StandardCompressionOptions.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/CompressionOptions.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Zstd.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/BrotliDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/GzipOptions.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZstdConstants.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZstdEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/BrotliOptions.java
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* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageEncoder.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/LzfEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/SnappyFramedDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/LzfDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/FastLz.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/MessageAggregationException.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanAllocator.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Bzip2BlockCompressor.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/FastLzFrameEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Bzip2Rand.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/FastLzFrameDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Lz4Constants.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/Lz4FrameEncoder.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2Decoder.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2BlockDecompressor.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitReader.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2Constants.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Crc32.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Lz4FrameDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/DecoderResultProvider.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitWriter.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2MoveToFrontTable.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2MTFAndRLE2StageEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/json/package-info.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/json/JsonObjectDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/AsciiHeadersEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Bzip2Encoder.java
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```
*/
/*
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* https://creativecommons.org/licenses/publicdomain
*/
/**
* Utility class for { @link ByteBuf } that encodes and decodes to and from
* Base64 notation.
* <p>
* The encoding and decoding algorithm in this class has been derived from
* http://iharder.sourceforge.net/current/java/base64/>Robert Harder's Public Domain
* Base64 Encoder/Decoder</a>.
*/
```

Found in path(s):

```
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/base64/Base64.java
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```
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/CorruptedFrameException.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/MessageToByteEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/MessageToMessageDecoder.java
*
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ClassResolvers.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
```

jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/WeakReferenceMap.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/package-info.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/DecompressionException.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/protobuf/package-info.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/base64/Base64Decoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/package-info.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/MessageToMessageCodec.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZlibDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZlibWrapper.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/CompressionException.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DecoderResult.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ReferenceMap.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/package-info.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/string/StringDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/JZlibDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/ReplayingDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/PrematureChannelClosureException.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/compression/SnappyFrameEncoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java
 *
 /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/compression/JZlibEncoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/base64/Base64Encoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/Delimiters.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/MessageToMessageEncoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/xml/package-info.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/CodecException.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/string/package-info.java
 *
 /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/compression/package-info.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/compression/JdkZlibEncoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/base64/package-info.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/serialization/SoftReferenceMap.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/bytes/package-info.java
 *
 /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/FixedLengthFrameDecoder.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/TooLongFrameException.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/compression/ZlibCodecFactory.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
 jar/io/netty/handler/codec/marshalling/DefaultUnmarshallerProvider.java
 * /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-

jar/io/netty/handler/codec/ByteToMessageDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/string/StringEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/LimitingByteInput.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/CachingClassResolver.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZlibEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/EncoderException.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ClassResolver.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/LengthFieldPrepender.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DecoderException.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/ByteToMessageCodec.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/LineBasedFrameDecoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/compression/ZlibUtil.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/MarshallingDecoder.java
*
/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/marshalling/ContextBoundUnmarshallerProvider.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/ObjectEncoder.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/MessageAggregator.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/compression/Snappy.java

*

/opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalMarshallerProvider.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoder.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/UnsupportedMessageTypeException.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java

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Found in path(s):

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/META-INF/maven/io.netty/netty-codec/pom.xml

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Found in path(s):

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/ValueConverter.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/CharSequenceValueConverter.java

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/DefaultHeadersImpl.java

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*/

/**

* Enumeration of supported Base64 dialects.

* <p>

* The internal lookup tables in this class has been derived from

* Robert
Harder's Public Domain

* Base64 Encoder/Decoder.

*/

Found in path(s):

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-jar/io/netty/handler/codec/base64/Base64Dialect.java

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Found in path(s):

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/DefaultHeaders.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/EmptyHeaders.java
* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/Headers.java

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*/

/**

* A decoder that splits the received {@link ByteBuf}s dynamically by the
* value of the length field in the message. It is particularly useful when you
* decode a binary message which has an integer header field that represents the
* length of the message body or the whole message.

*

<p>

* {@link LengthFieldBasedFrameDecoder} has many configuration parameters so
* that it can decode any message with a length field, which is often seen in
* proprietary client-server protocols. Here are some example that will give
* you the basic idea on which option does what.

*

* <h3>2 bytes length field at offset 0, do not strip header</h3>

*
 * The value of the length field in this example is `<tt>12 (0x0C)</tt>` which
 * represents the length of "HELLO, WORLD". By default, the decoder assumes
 * that the length field represents the number of the bytes that follows the
 * length field. Therefore, it can be decoded with the simplistic parameter
 * combination.

```
* <pre>
* <b>lengthFieldOffset</b> = <b>0</b>
* <b>lengthFieldLength</b> = <b>2</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0 (= do not strip header)
```

```
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content
* |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" | | 0x000C | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>
```

*
 * `<h3>2 bytes length field at offset 0, strip header</h3>`
 *

* Because we can get the length of the content by calling
 * `{ @link ByteBuf#readableBytes() }`, you might want to strip the length
 * field by specifying `<tt>initialBytesToStrip</tt>`. In this example, we
 * specified `<tt>2</tt>`, that is same with the length of the length field, to
 * strip the first two bytes.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* <b>initialBytesToStrip</b> = <b>2</b> (= the length of the Length field)
```

```
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (12 bytes)
* +-----+-----+ +-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" | | "HELLO, WORLD" |
* +-----+-----+ +-----+
* </pre>
```

*
 * `<h3>2 bytes length field at offset 0, do not strip header, the length field
 * represents the length of the whole message</h3>`
 *

* In most cases, the length field represents the length of the message body
 * only, as shown in the previous examples. However, in some protocols, the
 * length field represents the length of the whole message, including the
 * message header. In such a case, we specify a non-zero
 * `<tt>lengthAdjustment</tt>`. Because the length value in this example message

* is always greater than the body length by `<tt>2</tt>`, we specify `<tt>-2</tt>`
 * as `<tt>lengthAdjustment</tt>` for compensation.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-2</b> (= the length of the Length field)
* initialBytesToStrip = 0
*
```

* BEFORE DECODE (14 bytes) AFTER DECODE (14 bytes)

```
* +-----+-----+-----+-----+
* | Length | Actual Content |---->| Length | Actual
  Content |
* | 0x000E | "HELLO, WORLD" |   | 0x000E | "HELLO, WORLD" |
* +-----+-----+-----+-----+
```

```
* </pre>
```

* `<h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>`

* The following message is a simple variation of the first example. An extra
 * header value is prepended to the message. `<tt>lengthAdjustment</tt>` is zero
 * again because the decoder always takes the length of the prepended data into
 * account during frame length calculation.

```
* <pre>
* <b>lengthFieldOffset</b> = <b>2</b> (= the length of Header 1)
* <b>lengthFieldLength</b> = <b>3</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0
*
```

* BEFORE DECODE (17 bytes) AFTER DECODE (17 bytes)

```
* +-----+-----+-----+-----+
* | Header 1 | Length | Actual Content |---->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" |
  | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+-----+
```

```
* </pre>
```

* `<h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>`

* This is an advanced example that shows the case where there is an extra
 * header between the length field and the message body. You have to specify a
 * positive `<tt>lengthAdjustment</tt>` so that the decoder counts the extra
 * header into the frame length calculation.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* <b>lengthAdjustment</b> = <b>2</b> (= the length of Header 1)
* initialBytesToStrip = 0
*
```

```

* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |---->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" |   | 0x00000C | 0xCAFE | "HELLO,
WORLD" |

```

* </pre>

*

* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,

* strip the first header field and the length field</h3>

*

* This is a combination of all the examples above. There are the prepended

* header before the length field and the extra header after the length field.

* The prepended header affects the <tt>lengthFieldOffset</tt> and the extra

* header affects the <tt>lengthAdjustment</tt>. We also specified a non-zero

* <tt>initialBytesToStrip</tt> to strip the length field and the prepended

* header from the frame. If you don't want to strip the prepended header, you

* could specify <tt>0</tt> for <tt>initialBytesToSkip</tt>.

* <pre>

* lengthFieldOffset = 1 (= the length of HDR1)

* lengthFieldLength = 2

* lengthAdjustment = 1 (= the length of HDR2)

* initialBytesToStrip = 3 (= the length of HDR1 +
LEN)

*

```

* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)

```

```

* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |

```

* </pre>

*

* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,

* strip the first header field and the length field, the length field

* represents the length of the whole message</h3>

*

* Let's give another twist to the previous example. The only difference from

* the previous example is that the length field represents the length of the

* whole message instead of the message body, just like the third example.

* We have to count the length of HDR1 and Length into <tt>lengthAdjustment</tt>.

* Please note that we don't need to take the length of HDR2 into account

* because

the length field already includes the whole header length.

* <pre>

* lengthFieldOffset = 1

* lengthFieldLength = 2

* lengthAdjustment = -3 (= the length of HDR1 + LEN, negative)

* initialBytesToStrip = 3

```

*
* BEFORE DECODE (16 bytes)                AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |----->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+ +-----+-----+
* </pre>
* @see LengthFieldPrepender
*/

```

Found in path(s):

```

* /opt/cola/permits/1257888635_1643019970.33/0/netty-codec-4-1-70-final-sources-
jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java

```

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```

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ChannelFactory.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/AbstractEventLoop.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/PendingWriteQueue.java
*
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ReflectiveChannelFactory.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/embedded/EmbeddedChannelId.java

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```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/META-INF/native-  
image/io.netty.transport/native-image.properties
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*
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*
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```
*/
```

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```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/socket/DatagramChannelConfig.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/embedded/EmbeddedChannel.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/ChannelFutureListener.java
```

```
*
```

```
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/DefaultChannelPromise.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/local/package-info.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/embedded/EmbeddedSocketAddress.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/DefaultChannelPipeline.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/socket/oio/OioDatagramChannel.java
```

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-  
jar/io/netty/channel/socket/nio/NioDatagramChannelConfig.java
```

```

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/DefaultEventLoop.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/oio/AbstractOioChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/embedded/package-info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/EventLoopGroup.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/local/LocalEventLoopGroup.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/embedded/EmbeddedEventLoop.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/DefaultChannelConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/group/package-info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/AdaptiveRecvByteBufAllocator.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/nio/NioEventLoopGroup.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/socket/DatagramPacket.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/socket/DefaultSocketChannelConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/socket/nio/NioServerSocketChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/AbstractChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ChannelMetadata.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/VoidChannelPromise.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/EventLoop.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/socket/DefaultServerSocketChannelConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ServerChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/oio/AbstractOioByteChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/group/ChannelGroupFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ChannelHandlerContext.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-

```

jar/io/netty/channel/local/LocalChannel.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/ChannelFlushPromiseNotifier.java
 *
 /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/ChannelInboundHandler.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/socket/ServerSocketChannelConfig.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/CombinedChannelDuplexHandler.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/bootstrap/package-info.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/socket/SocketChannelConfig.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/socket/nio/NioDatagramChannel.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/nio/AbstractNioChannel.java
 *
 /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/ThreadPerChannelEventLoop.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/ChannelPipelineException.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/group/ChannelGroupFutureListener.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/AbstractChannelHandlerContext.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/EventLoopException.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/ChannelConfig.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/AbstractServerChannel.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/MultithreadEventLoopGroup.java
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 /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/ChannelOption.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/socket/nio/ProtocolFamilyConverter.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/FileRegion.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/SingleThreadEventLoop.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/socket/package-info.java
 * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
 jar/io/netty/channel/socket/DatagramChannel.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/bootstrap/AbstractBootstrap.java
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/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/FixedRecvByteBufAllocator.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/local/LocalChannelRegistry.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelException.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/CompleteChannelFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelPromiseAggregator.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelPromise.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/package-info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/NioTask.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelPromiseNotifier.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/ServerSocketChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ThreadPerChannelEventLoopGroup.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/FailedChannelFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/NioEventLoop.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/InternetProtocolFamily.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelOutboundHandler.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/group/DefaultChannelGroupFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/AbstractNioMessageChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultEventLoopGroup.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/RecvByteBufAllocator.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultFileRegion.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/package-

info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/bootstrap/Bootstrap.java
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/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/oio/package-info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/oio/OioEventLoopGroup.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelDuplexHandler.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/SocketChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/group/CombinedIterator.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/OioServerSocketChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelOutboundHandlerAdapter.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/nio/package-info.java
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/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/local/LocalServerChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/package-info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelPipeline.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/Channel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/bootstrap/ServerBootstrap.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelInitializer.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/AbstractNioByteChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/nio/NioSocketChannel.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/OioSocketChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/oio/AbstractOioMessageChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelInboundHandlerAdapter.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/SucceededChannelFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/local/LocalAddress.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/ChannelInputShutdownEvent.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/DefaultDatagramChannelConfig.java
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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/EventLoopTaskQueueFactory.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelHandlerMask.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ExtendedClosedChannelException.java
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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultChannelHandlerContext.java

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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultMaxMessagesRecvByteBufAllocator.java

*

/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/SimpleChannelPool.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/ChannelHealthChecker.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/MaxBytesRecvByteBufAllocator.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/ChannelPoolHandler.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/ChannelPool.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/ChannelPoolMap.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultMaxBytesRecvByteBufAllocator.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/FixedChannelPool.java

*

/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/pool/AbstractChannelPoolMap.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/MaxMessagesRecvByteBufAllocator.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-

jar/io/netty/channel/pool/AbstractChannelPoolHandler.java

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jar/io/netty/channel/ServerChannelRecvByteBufAllocator.java

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jar/io/netty/channel/StacklessClosedChannelException.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-

jar/io/netty/channel/socket/DuplexChannelConfig.java

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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/CoalescingBufferQueue.java
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* under the License.
*/
/**
* Handles an I/O event or intercepts an I/O operation, and forwards it to its next handler in
* its { @link ChannelPipeline }.
*
* <h3>Sub-types</h3>
* <p>
* { @link ChannelHandler } itself does not provide many methods, but you usually have to implement one of its
* subtypes:
* <ul>
* <li>{ @link
* ChannelInboundHandler } to handle inbound I/O events, and</li>
* <li>{ @link ChannelOutboundHandler } to handle outbound I/O operations.</li>
* </ul>
*/
```

```

* </p>
* <p>
* Alternatively, the following adapter classes are provided for your convenience:
* <ul>
* <li>{ @link ChannelInboundHandlerAdapter } to handle inbound I/O events,</li>
* <li>{ @link ChannelOutboundHandlerAdapter } to handle outbound I/O operations, and</li>
* <li>{ @link ChannelDuplexHandler } to handle both inbound and outbound events</li>
* </ul>
* </p>
* <p>
* For more information, please refer to the documentation of each subtype.
* </p>
*
* <h3>The context object</h3>
* <p>
* A { @link ChannelHandler } is provided with a { @link ChannelHandlerContext }
* object. A { @link ChannelHandler } is supposed to interact with the
* { @link ChannelPipeline } it belongs to via a context object. Using the
* context object, the { @link ChannelHandler } can pass events upstream or
* downstream, modify the pipeline dynamically,
* or store the information
* (using { @link AttributeKey }s) which is specific to the handler.
*
* <h3>State management</h3>
*
* A { @link ChannelHandler } often needs to store some stateful information.
* The simplest and recommended approach is to use member variables:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* public class DataServerHandler extends { @link SimpleChannelInboundHandler } &lt;Message &gt; {
*
*     <b>private boolean loggedIn;</b>
*
*     { @code @Override }
*     public void channelRead0({ @link ChannelHandlerContext } ctx, Message message) {
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) message);
*             <b>loggedIn = true;</b>
*         } else (message instanceof GetDataMessage) {
*             if (<b>loggedIn</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) message));
*             } else {
*                 fail();
*             }
*         }
*     }
* }
*

```

```

}
* }
* ...
* }
* </pre>
* Because the handler instance has a state variable which is dedicated to
* one connection, you have to create a new handler instance for each new
* channel to avoid a race condition where a unauthenticated client can get
* the confidential information:
* <pre>
* // Create a new handler instance per channel.
* // See {@link ChannelInitializer#initChannel(Channel)}.
* public class DataServerInitializer extends {@link ChannelInitializer}&lt;&gt;{@link Channel}&gt; {
*     {@code @Override}
*     public void initChannel({@link Channel} channel) {
*         channel.pipeline().addLast("handler", <b>new DataServerHandler()</b>);
*     }
* }
*
* </pre>
*
* <h4>Using {@link AttributeKey}s</h4>
*
* Although it's recommended to use member variables to store the state of a
* handler, for some reason you might not want to create many handler instances.
* In such a case, you can use {@link AttributeKey}s which is provided by
* {@link ChannelHandlerContext}:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* {@code @Sharable}
* public class DataServerHandler extends {@link SimpleChannelInboundHandler}&lt;Message&gt; {
*     private final {@link AttributeKey}&lt;{@link Boolean}&gt; auth =
*         {@link AttributeKey#valueOf(String) AttributeKey.valueOf("auth")};
*
*     {@code @Override}
*     public void channelRead({@link ChannelHandlerContext} ctx, Message message) {
*         {@link Attribute}&lt;{@link Boolean}&gt; attr = ctx.attr(auth);
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) o);
*             <b>attr.set(true)</b>;
*         } else (message instanceof GetDataMessage) {
*             if (<b>Boolean.TRUE.equals(attr.get())</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) o));
*             } else {
*                 fail();

```



```

*     }
*   }
* }
* ...
* }
* </pre>
* Now that the
state of the handler is attached to the { @link ChannelHandlerContext}, you can add the
* same handler instance to different pipelines:
* <pre>
* public class DataServerInitializer extends { @link ChannelInitializer}&It;{ @link Channel}&gt; {
*
*   private static final DataServerHandler <b>SHARED</b> = new DataServerHandler();
*
*   { @code @Override}
*   public void initChannel({ @link Channel} channel) {
*     channel.pipeline().addLast("handler", <b>SHARED</b>);
*   }
* }
* </pre>
*
*
* <h4>The { @code @Sharable} annotation</h4>
* <p>
* In the example above which used an { @link AttributeKey},
* you might have noticed the { @code @Sharable} annotation.
* <p>
* If a { @link ChannelHandler} is annotated with the { @code @Sharable}
* annotation, it means you can create an instance of the handler just once and
* add it to one or more { @link ChannelPipeline}s multiple times without
* a race condition.
* <p>
* If this annotation is not specified, you have to create
a new handler
* instance every time you add it to a pipeline because it has unshared state
* such as member variables.
* <p>
* This annotation is provided for documentation purpose, just like
* <a href="http://www.javaconcurrencyinpractice.com/annotations/doc/">the JCIP annotations</a>.
*
* <h3>Additional resources worth reading</h3>
* <p>
* Please refer to the { @link ChannelHandler}, and
* { @link ChannelPipeline} to find out more about inbound and outbound operations,
* what fundamental differences they have, how they flow in a pipeline, and how to handle
* the operation in your application.
*/

```

Found in path(s):

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelHandler.java

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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/nio/NioChannelOption.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/SimpleUserEventChannelHandler.java

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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/WriteBufferWaterMark.java

* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-

```
jar/io/netty/channel/ChannelInboundInvoker.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ChannelOutboundInvoker.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/SelectStrategy.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/bootstrap/BootstrapConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/bootstrap/ServerBootstrapConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/PreferHeapByteBufAllocator.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/group/VoidChannelGroupFuture.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/SelectStrategyFactory.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/DefaultSelectStrategyFactory.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/bootstrap/AbstractBootstrapConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/socket/DuplexChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/DefaultSelectStrategy.java
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Found in path(s):

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/META-
INF/maven/io.netty/netty-transport/pom.xml
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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/internal/package-info.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownEvent.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/internal/ChannelUtils.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/OioDatagramChannelConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/ChannelInputShutdownReadComplete.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/bootstrap/FailedChannel.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/DefaultOioDatagramChannelConfig.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DelegatingChannelPromiseNotifier.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/SelectedSelectionKeySetSelector.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/PendingBytesTracker.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownException.java
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* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/oio/OioByteStreamChannel.java
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jar/io/netty/channel/AbstractCoalescingBufferQueue.java
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- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/OioSocketChannelConfig.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultAddressedEnvelope.java
- *
- /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/AddressedEnvelope.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/nio/SelectedSelectionKeySet.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/group/ChannelGroupException.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/group/DefaultChannelGroup.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/DefaultOioServerSocketChannelConfig.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelProgressivePromise.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ConnectTimeoutException.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelOutboundBuffer.java
- *
- /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultMessageSizeEstimator.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/group/ChannelMatchers.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelId.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/socket/oio/OioServerSocketChannelConfig.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/SimpleChannelInboundHandler.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/bootstrap/ChannelFactory.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/ChannelProgressiveFuture.java
- *
- /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/DefaultChannelProgressivePromise.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/group/ChannelGroup.java
- * /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-jar/io/netty/channel/AbstractEventLoopGroup.java

```
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ChannelProgressiveFutureListener.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/MessageSizeEstimator.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/group/ChannelMatcher.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/DefaultChannelId.java
* /opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/socket/oio/DefaultOioSocketChannelConfig.java
*
/opt/cola/permits/1257888664_1643019966.4/0/netty-transport-4-1-70-final-sources-
jar/io/netty/channel/ChannelHandlerAdapter.java
```

1.213 netty-resolver 4.1.70.Final

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```
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/META-
INF/maven/io.netty/netty-resolver/pom.xml
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* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-
jar/io/netty/resolver/NameResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/package-
info.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-
jar/io/netty/resolver/NoopAddressResolver.java
*

/opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-
jar/io/netty/resolver/SimpleNameResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-
jar/io/netty/resolver/NoopAddressResolverGroup.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-
jar/io/netty/resolver/AddressResolverGroup.java
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jar/io/netty/resolver/HostsFileEntries.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-
jar/io/netty/resolver/ResolvedAddressTypes.java
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jar/io/netty/resolver/RoundRobinInetAddressResolver.java

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* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/DefaultNameResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/AddressResolver.java
*
/opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/HostsFileParser.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/DefaultAddressResolverGroup.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/InetAddressResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/AbstractAddressResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/HostsFileEntriesResolver.java
* /opt/cola/permits/1257888705_1643019972.09/0/netty-resolver-4-1-70-final-sources-jar/io/netty/resolver/InetSocketAddressResolver.java

1.214 netty-handler 4.1.70.Final

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jar/io/netty/handler/pcap/TCPpacket.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/PcapHeaders.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/package-info.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/EthernetPacket.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/IPPacket.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/UDPPacket.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/PcapWriteHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/pcap/PcapWriter.java

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* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/logging/LoggingHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-

jar/io/netty/handler/logging/package-info.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/stream/ChunkedFile.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/stream/ChunkedNioFile.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/WriteTimeoutException.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/IdleStateEvent.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/ReadTimeoutHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/logging/LogLevel.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/NotSslRecordException.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/TimeoutException.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/stream/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/IdleStateHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/stream/ChunkedWriteHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/stream/ChunkedStream.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/IdleState.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/ReadTimeoutException.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/util/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/timeout/WriteTimeoutHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/stream/ChunkedNioStream.java
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jar/io/netty/handler/ssl/OpenSslClientSessionCache.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/BouncyCastleAlpnSslEngine.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/BouncyCastle.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslContextOption.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/Ciphers.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslProtocols.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionCache.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/AsyncRunnable.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslAsyncPrivateKeyMethod.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/GroupsConverter.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslContextOption.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionId.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/BouncyCastleAlpnSslUtils.java
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jar/io/netty/handler/ssl/util/SelfSignedCertificate.java
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jar/io/netty/handler/ssl/PseudoRandomFunction.java
```

```
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-  
jar/io/netty/handler/ssl/OpenSslPrivateKeyMethod.java
```

```
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-  
jar/io/netty/handler/address/package-info.java
```

```
*  
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-  
jar/io/netty/handler/ssl/util/TrustManagerFactoryWrapper.java
```

```
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-  
jar/io/netty/handler/ssl/SslMasterKeyHandler.java
```

```
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
```

jar/io/netty/handler/ssl/util/KeyManagerFactoryWrapper.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/address/DynamicAddressConnectHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
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jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ocsp/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SniCompletionEvent.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslClientHelloHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslCloseCompletionEvent.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ConscryptAlpnSslEngine.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OptionalSslHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslCompletionEvent.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/Conscrypt.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkAlpnSslUtils.java
*

/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslEngine.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/AbstractSniHandler.java
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* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/logging/ByteBufferFormat.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactoryBuilder.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/SslHandshakeTimeoutException.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/address/ResolveAddressHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ipfilter/IpSubnetFilterRuleComparator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ipfilter/IpSubnetFilter.java
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jar/io/netty/handler/ssl/util/LazyJavaxX509Certificate.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ClientAuth.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ApplicationProtocolNegotiationHandler.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslContextBuilder.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ApplicationProtocolAccessor.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ApplicationProtocolNames.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionTicketKey.java
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```

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*
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jar/io/netty/handler/ssl/OpenSslCachingKeyMaterialProvider.java
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jar/io/netty/handler/ssl/SignatureAlgorithmConverter.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslPrivateKey.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslSession.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslKeyMaterialProvider.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ExtendedOpenSslSession.java
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* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/traffic/AbstractTrafficShapingHandler.java
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- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslServerContext.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslSessionStats.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ipfilter/IpFilterRule.java
- *
- /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/SslContext.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/JdkAlpnApplicationProtocolNegotiator.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/SniHandler.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ipfilter/RuleBasedIpFilter.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/traffic/GlobalChannelTrafficCounter.java
- *
- /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslDefaultApplicationProtocolNegotiator.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/JdkSslContext.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslSessionContext.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/JdkSslClientContext.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolConfig.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolUtil.java
- *
- /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslNpnApplicationProtocolNegotiator.java
- * /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-

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jar/io/netty/handler/ssl/CipherSuiteConverter.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslApplicationProtocolNegotiator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/PemReader.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkApplicationProtocolNegotiator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslEngineMap.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ipfilter/UniqueIpFilter.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkDefaultApplicationProtocolNegotiator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/util/BouncyCastleSelfSignedCertGenerator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ipfilter/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkSslServerContext.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ipfilter/IpSubnetFilterRule.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslEngine.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ApplicationProtocolNegotiator.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/Java7SslParametersUtils.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/SslUtils.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslContext.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ipfilter/IpFilterRuleType.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkSslEngine.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/CipherSuiteFilter.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/JdkNpnApplicationProtocolNegotiator.java

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* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/JettyAlpnSslEngine.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/JettyNpnSslEngine.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSsl.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslServerSessionContext.java
*

/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/util/LazyX509Certificate.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactory.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/SslProvider.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslClientContext.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java
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* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/flush/FlushConsolidationHandler.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java
*

/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java

* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-

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jar/io/netty/handler/flush/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ReferenceCountedOpenSslEngine.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/OpenSslCertificateException.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/util/X509TrustManagerWrapper.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/flow/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/ReferenceCountedOpenSslContext.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/PemX509Certificate.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/PemEncoded.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/DelegatingSslContext.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/PemValue.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/PemPrivateKey.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/ssl/Java8SslUtils.java
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* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
```



```
jar/io/netty/handler/traffic/package-info.java
* /opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java
*
/opt/cola/permits/1257888733_1643019979.68/0/netty-handler-4-1-70-final-sources-
jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java
```

1.215 jackson-annotations 2.10.1

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1.216 protobuf-java-format 1.2

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1.217 opentracing-api 0.31.0

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* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/References.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/Tracer.java
*
/opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/tag/AbstractTag.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/ScopeManager.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/propagation/TextMapInjectAdapter.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/tag/StringTag.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/propagation/TextMap.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/log/Fields.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/tag/IntOrStringTag.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/tag/Tags.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/tag/BooleanTag.java
*
/opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/SpanContext.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/propagation/TextMapExtractAdapter.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/Span.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/tag/IntTag.java
* /opt/cola/permits/1258804304_1643113379.94/0/opentracing-api-0-31-0-sources-jar/io/opentracing/propagation/Format.java

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1.218 annotations 4.1.1.4

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* /opt/cola/permits/1258811491_1643111603.33/0/annotations-4-1-1-4-sources-jar/android/annotation/TargetApi.java

1.219 proto-google-common-protos 2.0.1

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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/launch_stage.proto
```

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Found in path(s):

```
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/type/ExprOrBuilder.java
```

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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/Http.java
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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/ProjectProperties.java
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/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/ChangeType.java
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jar/com/google/cloud/audit/AuthorizationInfo.java
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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
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jar/com/google/api/MonitoringProto.java
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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/TimeZoneOrBuilder.java
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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/RetryInfo.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/RetryInfoOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/ContextProto.java
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/QuaternionOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/QuotaLimit.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/StatusOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/ErrorInfo.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/HttpBodyProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/Usage.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/QuaternionProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/LogProto.java
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/QuotaOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/Fraction.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/DistributionProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-

jar/com/google/cloud/audit/AuditLogProto.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/longrunning/ListOperationsResponseOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/ServiceProto.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/PageOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/MonitoredResourceProto.java
 *
 /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/Backend.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/cloud/audit/RequestMetadata.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/longrunning/DeleteOperationRequestOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/type/CalendarPeriod.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/DocumentationRuleOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/rpc/RequestInfo.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/type/TimeOfDay.java
 *
 /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/type/DateTimeProto.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/rpc/ResourceInfoOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/cloud/audit/ResourceLocationOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/rpc/StatusProto.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
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 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/LaunchStageProto.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/AuthenticationOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/ServiceOrBuilder.java
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 /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/cloud/audit/ServiceAccountDelegationInfoOrBuilder.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/api/Quota.java
 * /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
 jar/com/google/type/FractionOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/MoneyProto.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/QuotaFailure.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/ColorOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/DocumentationRule.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/CustomHttpPattern.java

*

/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/longrunning/WaitOperationRequest.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/MonitoredResourceOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/longrunning/OperationInfoOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/HttpOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/UsageProto.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/SourceInfo.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/DocumentationProto.java

*

/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/HelpOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/cloud/audit/ServiceAccountDelegationInfo.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/cloud/audit/ResourceLocation.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/cloud/audit/RequestMetadataOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/UsageRule.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/cloud/audit/AuthenticationInfoOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/Page.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/rpc/context/AttributeContext.java

*

/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/BillingOrBuilder.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/FractionProto.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-

jar/com/google/api/MetricOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/cloud/audit/AuthenticationInfo.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/cloud/audit/AuthorizationInfoOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/MonitoringOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
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* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/geo/type/ViewportOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/LoggingProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/FieldBehaviorProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/logging/type/HttpRequestOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/LoggingOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/PropertyOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/longrunning/OperationOrBuilder.java
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/rpc/BadRequest.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/MonitoredResourceDescriptorOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/rpc/ErrorDetailsProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/logging/type/LogSeverityProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/HttpBodyOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/AdviceOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/MetricDescriptorOrBuilder.java
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/rpc/LocalizedMessageOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/JwtLocationOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/longrunning/DeleteOperationRequest.java

* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/Billing.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/Property.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/SystemParametersOrBuilder.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/type/DateProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/LogDescriptorOrBuilder.java
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/longrunning/OperationInfo.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/HttpProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/FieldBehavior.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/logging/type/HttpRequest.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/ContextRule.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/api/BillingProto.java
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/com/google/longrunning/CancelOperationRequestOrBuilder.java
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/**

*

*

* <pre>

* Early Access features are limited to a closed group of testers. To use

* these features, you must sign up in advance and sign a Trusted Tester

```
* agreement (which includes confidentiality provisions). These features may
* be unstable, changed in backward-incompatible ways, and are not
* guaranteed
to be released.
* </pre>
*
* <code>EARLY_ACCESS = 1;</code>
*/
```

Found in path(s):

```
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/com/google/api/LaunchStage.java
```

No license file was found, but licenses were detected in source scan.

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```

Found in path(s):

```
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/monitored_resource.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/type/timeofday.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/system_parameter.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/cloud/audit/audit_log.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/control.proto
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/type/postal_address.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/config_change.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/logging/type/log_severity.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/context.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/distribution.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/type/date.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/quota.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-
jar/google/api/client.proto
```


* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/money.proto
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/rpc/context/attribute_context.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/consumer.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/rpc/status.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/expr.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/http.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/log.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/calendar_period.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/color.proto
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/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/metric.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/documentation.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/usage.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/dayofweek.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/monitoring.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/fraction.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/auth.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/source_info.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/longrunning/operations.proto
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/resource.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/latlng.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/rpc/code.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/datetime.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-

jar/google/api/label.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/type/quaternion.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/geo/type/viewport.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/service.proto
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/httpbody.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/logging.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/annotations.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/billing.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/logging/type/http_request.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/field_behavior.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/rpc/error_details.proto
* /opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/backend.proto
*
/opt/cola/permits/1258876734_1643115814.46/0/proto-google-common-protos-2-0-1-sources-jar/google/api/endpoint.proto

1.220 animal-sniffer-annotation 1.19

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* /opt/cola/permits/1258876677_1643115784.16/0/animal-sniffer-annotations-1-19-sources-jar/META-INF/maven/org.codehaus.mojo/animal-sniffer-annotations/pom.xml

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* /opt/cola/permits/1258876677_1643115784.16/0/animal-sniffer-annotations-1-19-sources-jar/org/codehaus/mojo/animal_sniffer/IgnoreJRERequirement.java

1.221 swagger-annotations 1.6.2

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```
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Authorization.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ExternalDocs.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Info.java
*
/opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ExampleProperty.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiModelProperty.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiModel.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ResponseHeader.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Tag.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/SwaggerDefinition.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiResponses.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ExtensionProperty.java
*
/opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Extension.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiResponse.java
```

```

* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/License.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Api.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiImplicitParam.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/AuthorizationScope.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiImplicitParams.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiParam.java
*
/opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/ApiOperation.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Example.java
* /opt/cola/permits/1260643097_1643189570.95/0/swagger-annotations-1-6-2-sources-
jar/io/swagger/annotations/Contact.java

```

1.222 classgraph 4.6.32

1.222.1 Available under license :

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*
* Hosted at: https://github.com/classgraph/classgraph
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*/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/JBossClassLoaderHandler.java

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* This file is part of ClassGraph.

*

* Author: R. Kempees

*

* Hosted at: <https://github.com/classgraph/classgraph>

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* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/concurrency/AutoCloseableConcurrentQueue.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/concurrency/AutoCloseableFutureListWithCompletionBarrier.java

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* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/META-INF/maven/io.github.classgraph/classgraph/pom.xml

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* Author: Sergey Beshpalov

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jar/nonapi/io/github/classgraph/classloaderhandler/SpringBootRestartClassLoaderHandler.java
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* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/concurrency/AutoCloseableExecutorService.java
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* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassInfoList.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/RecyclableInflater.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ModuleRef.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/Scanner.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ModuleInfoList.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classpath/CallStackReader.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ObjectTypedValueWrapper.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/TypeParameter.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/FieldInfoList.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxContextFinderClassLoaderHandler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ModuleInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/recycler/Resetable.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/ClassFieldCache.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ArrayTypeSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/PhysicalZipFile.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ReferenceTypeSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/FallbackClassLoaderHandler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/recycler/RecycleOnClose.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/AnnotationParameterValueList.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassTypeSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-

jar/nonapi/io/github/classgraph/fastzipfilereader/NestedJarHandler.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/TomcatWebappClassLoaderBaseHandler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/json/JSONParser.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/Utils/InputStreamOrByteBufferAdapter.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/LogicalZipFile.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/recycler/RecyclerExceptionless.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/ModulePathInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/MethodInfoList.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/concurrency/SingletonMap.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/TypeSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSliceReader.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/concurrency/WorkQueue.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/PackageInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandlerRegistry.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/AnnotationInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/FastZipEntry.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classpath/ClassLoaderAndModuleFinder.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/recycler/Recycler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/URLClassLoaderHandler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/json/ParameterizedTypeImpl.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/HierarchicalTypeSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classpath/ClasspathOrder.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/json/Id.java

*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/PackageInfoList.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/HasName.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/ClassFields.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/Utils/Join.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/JPMSCClassLoaderHandler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClasspathElementZip.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/Utils/LogNode.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/AnnotationParameterValue.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/Utils/FastPathResolver.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/types/TypeUtils.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/TypeResolutions.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/AnnotationClassRef.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/MethodParameterInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClasspathElement.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/FieldTypeInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/Utils/ReflectionUtils.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/Resource.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassGraphClassLoader.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/MethodInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/JSONSerializer.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ScanResultObject.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/TypeVariableSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/ScanSpec.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassGraph.java

*

/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/JSONUtils.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/InfoList.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classpath/ClasspathFinder.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxClassLoaderHandler.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/MethodTypeSignature.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/ParentLastDelegationOrderTestClassLoaderHandler.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassInfoUnlinked.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/FieldInfo.java

*

/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClasspathElementModule.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandler.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/Utils/VersionFinder.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/WhiteBlackList.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ScanResult.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/JSONReference.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/BaseTypeSignature.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClasspathElementDir.java

*

/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classpath/SystemJarFinder.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/classloaderhandler/WeblogicClassLoaderHandler.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassfileBinaryParser.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/Utils/JarUtils.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSlice.java

* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/nonapi/io/github/classgraph/json/JSONDeserializer.java

```
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/json/ReferenceEqualityKey.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/AnnotationEnumValue.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/types/Parser.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/urls/URLPathEncoder.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/TypeArgument.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/ClassRefOrTypeVariableSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/ModuleReaderProxy.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/ClassRefTypeSignature.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/json/JSONObject.java
*
/opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-jar/io/github/classgraph/ClassInfo.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/OSGiDefaultClassLoaderHandler.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/concurrency/InterruptedException.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/json/JSONArray.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/AnnotationInfoList.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/io/github/classgraph/GraphvizDotfileGenerator.java
* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/urls/FileUtils.java
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```
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*
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*
* Hosted at: https://github.com/classgraph/classgraph
*
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* /opt/cola/permits/1260754642_1643213178.51/0/classgraph-4-6-32-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/FelixClassLoaderHandler.java

1.223 jakarta-inject-api 2.0.1

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1.224 error_prone_annotations 2.3.3

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* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/FormatMethod.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/MustBeClosed.java
*
/opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/RestrictedApi.java
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* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/DoNotCall.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java
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* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/NoAllocation.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/LockMethod.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/UnlockMethod.java
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- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/SuppressPackageLocation.java
- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/Immutable.java
- *
- /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/RequiredModifiers.java
- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/Var.java
- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/ForOverride.java
- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/LazyInit.java
- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
- * /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/IncompatibleModifiers.java

1.225 swagger-annotations 2.1.6

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* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/servers/ServerVariable.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/headers/Header.java

*

/opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/Parameter.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/security/OAuthFlows.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/media/ExampleObject.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/security/SecuritySchemes.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/OpenAPIDefinition.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/info/License.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/servers/Server.java

*

/opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/security/SecurityScheme.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/parameters/RequestBody.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/media/Schema.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/security/SecurityRequirements.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/Parameters.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/servers/Servers.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/security/OAuthFlow.java

*

/opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/media/Encoding.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/tags/Tag.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/callbacks/Callback.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/media/DiscriminatorMapping.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/ExternalDocumentation.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-jar/io/swagger/v3/oas/annotations/info/Info.java

* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-

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jar/io/swagger/v3/oas/annotations/security/OAuthScope.java
*
/opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/info/Contact.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/Operation.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/Hidden.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/responses/ApiResponse.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/callbacks/Callbacks.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/security/SecurityRequirement.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/responses/ApiResponses.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/links/LinkParameter.java
*
/opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/extensions/Extensions.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/media/Content.java
* /opt/cola/permits/1265843831_1643957016.06/0/swagger-annotations-2-1-6-sources-
jar/io/swagger/v3/oas/annotations/links/Link.java
```

1.226 dropwizard-assets 2.0.12

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1.227 jackson-datatype-joda 2.10.5

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1.228 picocontainer 2.15

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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ProviderAdapter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ComponentLifecycle.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/security/CustomPermissionsURLClassLoader.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ComponentMonitorStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Stored.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/FactoryInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/references/SimpleReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Guarded.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Provider.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/CompositeInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Injector.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/InjectInto.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/references/ThreadLocalMapObjectReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/CompositeInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Injector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
```

jar/org/picocontainer/injectors/MultiInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ObjectReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Decorated.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Reinjection.java
*

/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/references/ThreadLocalReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Reinjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/MultiInjection.java

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jar/org/picocontainer/classname/ClassPathElement.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/ClassName.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/ClassLoadingPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/DefaultConstructorParameter.java
*

/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/DefaultClassLoadingPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/NullParameter.java

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jar/org/picocontainer/lifecycle/LifecycleState.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/StartableLifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/visitors/MethodCallingVisitor.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/AbstractMonitoringLifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/visitors/TraversalCheckingVisitor.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/converters/Converter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/ReflectionLifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoVisitor.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ComponentAdapter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/JavaEE5LifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/Converters.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/LifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/visitors/VerifyingVisitor.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/DefaultLifecycleState.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/CompositeLifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/ReflectionLifecycleException.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/visitors/AbstractPicoVisitor.java
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- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/NamedFieldInjector.java
- *
- /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Automated.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Locked.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/NameBinding.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/AdaptingBehavior.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/PropertyApplicator.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AnnotatedFieldInjector.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/monitors/LifecycleComponentMonitor.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoContainer.java
- *
- /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Automating.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/ComponentFactory.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/adapters/AbstractAdapter.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/Injectors.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Characteristics.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/PropertyApplying.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/annotations/Inject.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/TransientPicoContainer.java
- *
- /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/DefaultPicoContainer.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/lifecycle/NullLifecycleStrategy.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/parameters/BasicComponentParameter.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-

jar/org/picocontainer/behaviors/Synchronizing.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/NamedMethodInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoVerificationException.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoException.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/annotations/Cache.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/CommandLinePicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/TypedFieldInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/adapters/InstanceAdapter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/TypedFieldInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/NamedFieldInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/CollectionComponentParameter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Locking.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/annotations/Nullable.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Behaviors.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/AbstractInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/BehaviorFactory.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoBuilder.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/InjectionFactory.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/AnnotatedMethodInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/ImplementationHiding.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/HiddenImplementation.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/ComponentParameter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/ImmutablePicoContainer.java

* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Synchronized.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/SetterInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoClassNotFoundException.java

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Found in path(s):

* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/monitors/NullComponentMonitor.java

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jar/org/picocontainer/behaviors/AbstractBehavior.java

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- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Decorating.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/FieldDecorating.java

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- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/monitors/ComponentMonitorHelper.java
- * /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/monitors/WriterComponentMonitor.java

*

- /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/monitors/ConsoleComponentMonitor.java

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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/CompositePicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/MutablePicoContainer.java

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jar/org/picocontainer/monitors/AbstractComponentMonitor.java

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jar/org/picocontainer/containers/PropertiesPicoContainer.java

* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/MethodInjector.java

```
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Intercepting.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoLifecycleException.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ForgetfulConstructorInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Intercepted.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/SystemPropertiesPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/CommandLineArgumentsPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ParameterNameBinding.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/AbstractParameter.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/SingleMemberInjector.java
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jar/org/picocontainer/composers/RegexComposer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/monitors/ComposingMonitor.java
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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Parameter.java
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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/EmptyPicoContainer.java
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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Disposable.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Startable.java
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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/ThreadCached.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Guarding.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/SetterInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/MethodInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/AnnotatedMethodInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/AdaptingInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ConstructorInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/ThreadCaching.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ConstructorInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Storing.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Caching.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoCompositionException.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/OptInCaching.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Cached.java

```

1.229 vault-java-driver 4.1.0

1.229.1 Available under license :

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```

/**
 * <p>Intended for internal use by other classes within the Vault driver library.</p>
 *
 * <p>JSON parsing functionality. The classes in this package are adapted from Ralf Sternberg's excellent
 * <a href="https://github.com/ralfstx/minimal-json">"minimal-json"</a> library, available under the MIT License.
 * The package names have all been changed, to prevent any conflicts should you happen to be using a different
 * version of this library elsewhere in your project dependencies.</p>
 */

```

Found in path(s):

```

* /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-

```

jar/com/bettercloud/vault/json/package-info.java

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jar/com/bettercloud/vault/json/Json.java

* /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
jar/com/bettercloud/vault/json/PrettyPrint.java

* /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
jar/com/bettercloud/vault/json/WritingBuffer.java

* /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
jar/com/bettercloud/vault/json/WriterConfig.java

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 jar/com/bettercloud/vault/json/JsonParser.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonWriter.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonLiteral.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonArray.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonObject.java
 *
 /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonString.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonValue.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/ParseException.java
 * /opt/cola/permits/1268276294_1644386808.09/0/vault-java-driver-4-1-0-sources-
 jar/com/bettercloud/vault/json/JsonNumber.java

1.230 open-ldap 2.4.44-25.el7_9

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Version 2.8.1, 25 November 2003

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1.231 javax-annotation-api 1.3.2

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1.232 slf4j 1.7.36

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1.233 jul-to-slf4j 1.7.36

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jar/org/slf4j/bridge/SLF4JBridgeHandler.java
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* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/RestrictedApi.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/MustBeClosed.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/CompatibleWith.java
*
/opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/DoNotMock.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/FormatMethod.java

* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/FormatString.java

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Found in path(s):

* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/META-INF/maven/com.google.errorprone/error_prone_annotations/pom.xml

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* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/InlineMeValidationDisabled.java

* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/InlineMe.java

* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/Modifier.java

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```
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/DoNotCall.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/CheckReturnValue.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/concurrent/GuardedBy.java
*
/opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java
```

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Found in path(s):

```
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
```

```
jar/com/google/errorprone/annotations/RequiredModifiers.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/concurrent/LazyInit.java
*
/opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/Var.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/CompileTimeConstant.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/Immutable.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/IncompatibleModifiers.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/SuppressPackageLocation.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/ForOverride.java
```

1.235 jcl-over-slf4j 1.7.36

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Found in path(s):

```
* /opt/cola/permits/1288583223_1647358914.34/0/jcl-over-slf4j-1-7-36-jar/META-INF/maven/org.slf4j/jcl-over-
slf4j/pom.xml
```

1.236 logback-access 1.2.11

1.236.1 Available under license :

```
/**
```

```
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1.237 logback-core 1.2.11

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1.238 error_prone_annotations 2.11.0

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1.239 protobuf-java 3.19.2

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Found in path(s):

* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/FloatArrayList.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/StructuralMessageInfo.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/BlockingService.java
*

/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/google/protobuf/wrappers.proto
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/AllocatedBuffer.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/ExtensionSchemaFull.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/Android.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/GeneratedMessageInfoFactory.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/ProtocolStringList.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/UnknownFieldSetSchema.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/NewInstanceSchemas.java
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/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/AbstractMessageLite.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/ExtensionSchemaLite.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/BooleanArrayList.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/TextFormatParseLocation.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/MessageInfo.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/SmallSortedMap.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/CodedInputStream.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/google/protobuf/source_context.proto
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/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/UnknownFieldSet.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/MessageReflection.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/ExtensionSchemas.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/FieldSet.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/google/protobuf/any.proto
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/RpcCallback.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/google/protobuf/type.proto
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/AbstractParser.java
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/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/BinaryWriter.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/ManifestSchemaFactory.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/AbstractMessage.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/MapFieldSchema.java
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/LazyFieldLite.java
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/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/Parser.java
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/DiscardUnknownFieldsParser.java
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/ExtensionRegistry.java
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/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/google/protobuf/descriptor.proto
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/UnknownFieldSetLiteSchema.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/MessageInfoFactory.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/RpcController.java

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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/SingleFieldBuilderV3.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/Internal.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/NewInstanceSchemaFull.java
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-jar/com/google/protobuf/AbstractProtobufList.java
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-


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jar/com/google/protobuf/BinaryReader.java
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jar/com/google/protobuf/GeneratedMessageV3.java
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jar/com/google/protobuf/MapFieldSchemaFull.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-
jar/com/google/protobuf/UnmodifiableLazyStringList.java
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jar/com/google/protobuf/RepeatedFieldBuilderV3.java
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-
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* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-
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/opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-
jar/com/google/protobuf/RpcUtil.java
* /opt/cola/permits/1297303028_1648662100.27/0/protobuf-java-3-19-2-sources-
jar/com/google/protobuf/LazyField.java

```

1.240 cyrus-sasl 2.1.26-24.el7_9

1.240.1 Available under license :

```

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* Tim Martin
* Rob Earhart
* Rob Siemborski
*/
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/* CMU libsasl

* Tim Martin

* Rob Earhart

* Rob Siemborski

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1.241 libqrencode 3.4.1-3.el7

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/*
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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```

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```

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataInput.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/Cut.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/Callables.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/annotations/GwtIncompatible.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/annotations/GwtCompatible.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/escape/Escapers.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/SignedBytes.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/SparseImmutableTable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/LocalCache.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedCharEscaper.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/net/HostSpecifier.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/escape/Platform.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/CacheBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/UnsignedBytes.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFuture.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/net/InternetDomainName.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFluentFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingListenableFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/Service.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/reflect/TypeResolver.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Splitter.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/LineProcessor.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java

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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/ReferenceEntry.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableTable.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractIdleService.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/net/UrlEscapers.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Platform.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedEscaperMap.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractService.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/DenseImmutableTable.java

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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/ByteProcessor.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/SettableFuture.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataOutput.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/html/HtmlEscapers.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/package-info.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/FinalizablePhantomReference.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/LineBuffer.java

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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Function.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/LittleEndianDataOutputStream.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Throwables.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/CountingOutputStream.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/Closeables.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/eventbus/DeadEvent.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Preconditions.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableFuture.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/package-info.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/LineReader.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/Interners.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/eventbus/AsyncEventBus.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/CountingInputStream.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/package-info.java

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jar/com/google/common/eventbus/AllowConcurrentEvents.java
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jar/com/google/common/collect/HashBiMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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jar/com/google/common/base/Defaults.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/Files.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/Flushables.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/eventbus/EventBus.java
*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/LittleEndianDataInputStream.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Predicates.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java  
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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/FilteredEntryMultimap.java  
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableAsList.java  
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashSet.java  
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/TransformedIterator.java  
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/DescendingImmutableSortedSet.java  
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashMap.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/AbstractNavigableMap.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/UnmodifiableSortedMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingBlockingDeque.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/TreeTraverser.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingNavigableSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/SortedMultisetBridge.java
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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/RangeMap.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/CompactHashSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/CompactHashMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/TransformedListIterator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/TreeRangeMap.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/LittleEndianByteArray.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/CombinedFuture.java

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jar/com/google/common/io/ReaderInputStream.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/InterruptibleTask.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AggregateFutureState.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/FarmHashFingerprint64.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AsyncCallable.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ConsumingQueueIterator.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/MultimapBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ImmutableMapEntry.java
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*/
/**
* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular
* version.
*/

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/FloatsMethodsForWeb.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/BaseEncoding.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ImmutableRangeMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/Stats.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/PairedStats.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/StatsAccumulator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/xml/package-info.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/Closer.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/reflect/package-info.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/SmoothRateLimiter.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/SipHashFunction.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/reflect/Parameter.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/FileWriteMode.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/PairedStatsAccumulator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/CartesianList.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/reflect/TypeCapture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/LongAddable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-

jar/com/google/common/hash/LongAddables.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/cache/LongAddable.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/escape/package-info.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/ServiceManager.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/Invokable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/cache/LongAddables.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/html/package-info.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/CharSource.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/StandardSystemProperty.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/ChecksumHashFunction.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/AbstractByteHasher.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/ClassPath.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/TypeToInstanceMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/math/LinearTransformation.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/CharSink.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/ByteSink.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/AbstractInvocationHandler.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableRangeSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/MutableTypeToInstanceMap.java
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 */
/**
 * Holder for extra methods of {@code Objects} only in web. Intended to be empty for regular
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 */
```

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jar/com/google/common/hash/LongAdder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/cache/LongAdder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/cache/Striped64.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/Striped64.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AtomicDoubleArray.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/LinkedHashSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/UsingToStringOrdering.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/MutableClassToInstanceMap.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingListIterator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ArrayListMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/Synchronized.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ImmutableSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-

jar/com/google/common/collect/ForwardingSortedSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ComparatorOrdering.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ListMultimap.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapEntry.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ConcurrentHashMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Iterables.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/NullsFirstOrdering.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/EnumBiMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/TreeMultiset.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ExplicitOrdering.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Lists.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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jar/com/google/common/collect/ForwardingMapEntry.java
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jar/com/google/common/collect/ReverseNaturalOrdering.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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jar/com/google/common/collect/HashMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractSortedSetMultimap.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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 jar/com/google/common/collect/Iterators.java
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 jar/com/google/common/collect/ForwardingConcurrentMap.java
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 jar/com/google/common/collect/SortedSetMultimap.java
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 * /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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 * /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
 jar/com/google/common/collect/package-info.java
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 * /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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 jar/com/google/common/collect/MapDifference.java
 *
 /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
 jar/com/google/common/collect/Sets.java
 * /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-


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jar/com/google/common/collect/Interner.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SetMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/NullsLastOrdering.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractIterator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingIterator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingList.java
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jar/com/google/common/collect/ForwardingMultimap.java
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jar/com/google/common/collect/Multisets.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingObject.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Maps.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractSetMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Multimaps.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/CompoundOrdering.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingCollection.java
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Found in path(s):

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SortedMultiset.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SortedMultisets.java

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*/

/**

* Returns an array containing all of the elements in the specified collection. This method

* returns the elements in the order they are returned by the collection's iterator. The returned

* array is "safe" in that no references to it are maintained by the collection. The caller is

* thus free to modify the returned

array.

*

* <p>This method assumes that the collection size doesn't change while the method is running.

*

* <p>TODO(kevinb): support concurrently modified collections?

*

* @param c the collection for which to return an array of elements

*/

Found in path(s):

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ObjectArrays.java

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*/
/*
* This method was rewritten in Java from an intermediate step of the Murmur hash function in
* http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
* following header:
*
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disclaims copyright to this source code.
*/
```

Found in path(s):

```
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Hashing.java
```

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```

Found in path(s):

```
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/Traverser.java
```

```
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
```

jar/com/google/common/util/concurrent/ClosingFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/AbstractBaseGraph.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/BaseGraph.java
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Found in path(s):
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Streams.java
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Found in path(s):
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/IndexedImmutableSet.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableBiMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableMap.java

*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/BaseImmutableMultimap.java

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*/

/**

* Holder for web specializations of methods of { @code Shorts }. Intended to be empty for regular
* version.

*/

Found in path(s):

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/ShortsMethodsForWeb.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/Atomics.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/package-info.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/SortedLists.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/net/package-info.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/annotations/Beta.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ContiguousSet.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Ascii.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Equivalence.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-

jar/com/google/common/util/concurrent/ListeningExecutorService.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/Monitor.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/Strings.java
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jar/com/google/common/util/concurrent/ForwardingLock.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingCondition.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/primitives/ImmutableIntArray.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/AbstractHashFunction.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/primitives/ImmutableDoubleArray.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/primitives/ImmutableLongArray.java
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jar/com/google/common/primitives/Platform.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/Internal.java

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*/

/**

* Holder for web specializations of methods of { @code Doubles }. Intended to be empty for regular
* version.

*/

Found in path(s):

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jar/com/google/common/primitives/DoublesMethodsForWeb.java

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*/
/*
 * This method was written by Doug Lea with assistance from members of JCP JSR-166 Expert Group
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 *
 * As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's
 * java.util.HashMap
class.
*/
```

Found in path(s):

```
*/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/Striped.java
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```
*/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/ServiceManagerBridge.java
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*/  
/**  
 * Not supported. <b>You are attempting to create a map that may contain a non-{@code Comparable}  
 * key.</b> Proper calls will resolve to the version in {@code ImmutableSortedMap}, not this dummy  
 * version.  
 *  
 * @throws UnsupportedOperationException always  
 * @deprecated <b>Pass a key of type {@code Comparable}  
 to use {@link  
 *   ImmutableSortedMap#of(Comparable, Object)}.</b>  
 */
```

Found in path(s):

```
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
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```
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jar/com/google/common/hash/package-info.java
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*/
/***

* Outer class that exists solely to let us write { @code Partially.GwtIncompatible } instead of plain
* { @code GwtIncompatible }. This is more accurate for { @link Futures#catching }, which is available
* under GWT but with a slightly different signature.

*

* <p>We can't use { @code PartiallyGwtIncompatible } because then the GWT compiler
wouldn't recognize
* it as a { @code GwtIncompatible } annotation. And for { @code Futures.catching }, we need the GWT
* compiler to autostrip the normal server method in order to expose the special, inherited GWT
* version.

*/

Found in path(s):

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/Partially.java

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jar/com/google/common/graph/Network.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/PredecessorsFunction.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/ImmutableGraph.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/MutableGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/RecursiveDeleteOption.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/SuccessorsFunction.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/Graph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/ImmutableNetwork.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/Graphs.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/TopKSelector.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/MutableNetwork.java
*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/InsecureRecursiveDeleteException.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/ImmutableSupplier.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionSequencer.java
*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableMultiset.java

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jar/com/google/common/collect/RegularImmutableSortedSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableAsList.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ComparisonChain.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableClassToInstanceMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableList.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/TableCollectors.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/DiscreteDomain.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableTable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableEnumSet.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/EmptyImmutableSetMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractIndexedListIterator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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jar/com/google/common/collect/ImmutableTable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ComputationException.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSetMultimap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ForwardingTable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ArrayTable.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-  
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/UnmodifiableIterator.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableBiMap.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Range.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/EmptyImmutableListMultimap.java
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jar/com/google/common/base/NullnessCasts.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/NullnessCasts.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/primitives/UnsignedLongs.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-


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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/HashingOutputStream.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionError.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/HashFunction.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/package-info.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/CacheBuilderSpec.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/Cache.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/EmptyContiguousSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractScheduledService.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/Hashing.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/AbstractSortedMultiset.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/RemovalCause.java
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/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/AbstractCompositeHashFunction.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/RemovalNotification.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/BloomFilterStrategies.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/cache/RemovalListeners.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Queues.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
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*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/ForwardingGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/AbstractGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/ElementOrder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/NetworkConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/UndirectedNetworkConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/EdgesConnecting.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/MultiEdgesConnecting.java
```

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/Comparators.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/AbstractGraphBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/GraphConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/AbstractDirectedNetworkConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/AbstractNetwork.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/ImmutableValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/ValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/UndirectedGraphConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/MapRetrievalCache.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/ValueGraphBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/StandardMutableNetwork.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/NetworkBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/MutableValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/StandardMutableValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/ForwardingValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/GraphConstants.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/StandardMutableGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/EndpointPair.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/AbstractValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/StandardValueGraph.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-

jar/com/google/common/graph/DirectedMultiNetworkConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/GraphBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/RangeGwtSerializationDependencies.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/DirectedGraphConnections.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/MapIteratorCache.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/CollectCollectors.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/MoreCollectors.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/StandardNetwork.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/DirectedNetworkConnections.java
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jar/com/google/common/hash/Fingerprint2011.java
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/graph/IncidentEdgeSet.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Joiner.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/net/InetAddresses.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/MultiReader.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/FluentIterable.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/net/PercentEscaper.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Doubles.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Chars.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Bytes.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/SequentialExecutor.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Longs.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Ints.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Booleans.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableFutureTask.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/escape/Escaper.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Shorts.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/internal/Finalizer.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/FileBackedOutputStream.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/thirdparty/publicsuffix/TrieParser.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Stopwatch.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/CharMatcher.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/Floats.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Converter.java

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/**

* Holder for web specializations of methods of { @code Ints }. Intended to be empty for regular
* version.

*/

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/primitives/IntsMethodsForWeb.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/eventbus/Subscriber.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/MoreObjects.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenerCallQueue.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/Quantiles.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/eventbus/Dispatcher.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/eventbus/SubscriberRegistry.java

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jar/com/google/common/collect/ForwardingSortedMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/GeneralRange.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/Count.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableSortedMultiset.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SortedIterable.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/RangeSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/AbstractRangeSet.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/SortedIterables.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMultiset.java
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jar/com/google/common/util/concurrent/AtomicLongMap.java
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jar/com/google/common/collect/GwtTransient.java
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jar/com/google/common/graph/package-info.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ImmutableBiMapFauxverideShim.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/CollectSpliterators.java
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jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/math/BigDecimalMath.java
```

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/io/Java8Compatibility.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/hash/Java8Compatibility.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/math/ToDoubleRounder.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/base/Java8Compatibility.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/UnmodifiableListIterator.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/RowSortedTable.java

*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/MinMaxPriorityQueue.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableCollection.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/AbstractSequentialIterator.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/SortedMapDifference.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedSetMultimap.java

* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-jar/com/google/common/collect/ForwardingSetMultimap.java

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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/net/ParametricNullness.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/math/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/xml/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/cache/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/eventbus/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/primitives/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/html/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ElementTypesAreNonnullByDefault.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/cache/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
```

jar/com/google/common/escape/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/hash/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/math/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/ElementTypesAreNonnullByDefault.java
*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/xml/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/primitives/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/collect/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/eventbus/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/net/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/ParametricNullness.java
*

/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/escape/ParametricNullness.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/graph/ParametricNullness.java

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jar/com/google/common/base/PatternCompiler.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/JdkPattern.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/CommonMatcher.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/base/CommonPattern.java

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jar/com/google/common/util/concurrent/ImmediateFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/FakeTimeLimiter.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/escape/CharEscaperBuilder.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/TimeoutFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/Futures.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/CollectionFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-

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jar/com/google/common/base/CaseFormat.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/GwtFluentFutureCatchingSpecialization.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/annotations/VisibleForTesting.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/FuturesGetChecked.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/UncheckedTimeoutException.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/TimeLimiter.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/reflect/TypeToken.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractCatchingFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/escape/CharEscaper.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractTransformFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/SimpleTimeLimiter.java
*
/opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/FluentFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/AppendableWriter.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/AggregateFuture.java
* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/io/PatternFilenameFilter.java
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* This following method is a modified version of one found in
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* which contained the following notice:
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* /opt/cola/permits/1301953781_1649307346.56/0/guava-31-1-jre-sources-1-
jar/com/google/common/util/concurrent/MoreExecutors.java

1.243 guava 31.0.1-android

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/Quantiles.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/SubscriberRegistry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/Dispatcher.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/MoreObjects.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/TrustedListenableFutureTask.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListenerCallQueue.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/Subscriber.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableMap.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMapValues.java

*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/StandardRowSortedTable.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Collections2.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Platform.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedSet.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Table.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Range.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/PeekingIterator.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableCollection.java

*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/HashBasedTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Serialization.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMapKeySet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/StandardTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableBiMap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableEntry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeBasedTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMapEntrySet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableIterator.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EmptyImmutableListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CollectPreconditions.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ExecutionSequencer.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Java8Compatibility.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/ToDoubleRounder.java
*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Java8Compatibility.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Present.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListeningScheduledExecutorService.java
*
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/RemovalListeners.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Hashing.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/CacheStats.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/MathPreconditions.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/FutureCallback.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractCompositeHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/package-info.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/DoubleMath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Funnels.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EmptyContiguousSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Hasher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/WrappingExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/hash/BloomFilter.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/CacheBuilderSpec.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Murmur3_32HashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/HashCode.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/ForwardingLoadingCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeParameter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/UnsignedLongs.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/DoubleUtils.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/MediaType.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/RemovalCause.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Optional.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/HashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/RemovalListener.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/LongMath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Murmur3_128HashFunction.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractScheduledService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractSortedMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/UnsignedLong.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Funnel.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Ticker.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/UnsignedInteger.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingListeningExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FunctionalEquivalence.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/Types.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/RemovalNotification.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/IntMath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/BloomFilterStrategies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Enums.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ForwardingCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/Cache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/CacheLoader.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/HostAndPort.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularContiguousSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractNonStreamingHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/BigIntegerMath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ExecutionError.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LoadingCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/MessageDigestHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/AbstractCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/CycleDetectingLockFactory.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/PairwiseEquivalence.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/util/concurrent/UncheckedExecutionException.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeRangeSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/DescendingImmutableSortedMultiset.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/HttpHeaders.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/HashingOutputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/BoundType.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/AbstractLoadingCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/PrimitiveSink.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ParseRequest.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Queues.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/AbstractStreamingHasher.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Absent.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/Weigher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Crc32cHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/AbstractHasher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Uninterruptibles.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingLock.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ImmutableDoubleArray.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ImmutableIntArray.java

*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractHashFunction.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ImmutableLongArray.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingCondition.java

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*/

/**

* Holder for web specializations of methods of { @code Shorts }. Intended to be empty for regular version.

*/

Found in path(s):

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ShortsMethodsForWeb.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/BaseImmutableMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/IndexedImmutableSet.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSequentialIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedMapDifference.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSortedSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RowSortedTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableListIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/collect/ForwardingImmutableCollection.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MinMaxPriorityQueue.java
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jar/com/google/common/graph/IncidentEdgeSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CompactHashing.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Runnables.java

```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionContext.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeVisitor.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/HashingInputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/WrappingScheduledExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CharSequenceReader.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Utf8.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/VerifyException.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixType.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionHandler.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Verify.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FilteredMultimapValues.java
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*/
/**
* Returns an array containing all of the elements in the specified collection. This method
* returns the elements in the order they are returned by the collection's iterator. The returned
* array is "safe" in that no references to it are maintained by the collection. The caller is
* thus free to modify the returned

```

array.

```
*  
* <p>This method assumes that the collection size doesn't change while the method is running.  
*  
* <p>TODO(kevinb): support concurrently modified collections?  
*  
* @param c the collection for which to return an array of elements  
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ObjectArrays.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/GwtTransient.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Strings.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Atomics.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedLists.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Monitor.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Ascii.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListeningExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ContiguousSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/Beta.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Equivalence.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/package-info.java

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/**
* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular
* version.
*/

Found in path(s):

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/FloatsMethodsForWeb.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/MapRetrievalCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/DirectedNetworkConnections.java
*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ForwardingNetwork.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/UndirectedGraphConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Comparators.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/EdgesConnecting.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/graph/NetworkBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardMutableValueGraph.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardNetwork.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ForwardingValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ValueGraphBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/MapIteratorCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardMutableGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/NetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/GraphBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractDirectedNetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedHashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/GraphConstants.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RangeGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/EndpointPairIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ImmutableValueGraph.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/EndpointPair.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/GraphConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/UndirectedMultiNetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ForwardingGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/MultiEdgesConnecting.java


```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/MutableValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/UndirectedNetworkConnections.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractGraphBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/DirectedMultiNetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardMutableNetwork.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/DirectedGraphConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractNetwork.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ElementOrder.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractGraph.java
```

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```

```
*/
```

```
/**
```

```
* Holder for extra methods of { @code Objects } only in web. Intended to be empty for regular
* version.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/ExtraObjectsMethodsForWeb.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SortedMultisets.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SortedMultiset.java
```

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/DescendingImmutableSortedSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CompactLinkedHashSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RangeMap.java
```

*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingDeque.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableAsList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EvictingQueue.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredEntryMultimap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractNavigableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableSortedMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TransformedIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeRangeMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeTraverser.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedMultisetBridge.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AllEqualOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactHashSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingNavigableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactHashMap.java
*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableEnumMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingNavigableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingBlockingDeque.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DescendingMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredKeySetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactLinkedHashMap.java
*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TransformedListIterator.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AsyncCallable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/LittleEndianByteArray.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AggregateFutureState.java
*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/MacHashFunction.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/FarmHashFingerprint64.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Platform.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ReaderInputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ConsumingQueueIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/InterruptibleTask.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/CombinedFuture.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Striped64.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/LongAdder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LongAdder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AtomicDoubleArray.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/Striped64.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/reflect/Reflection.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/Subscribe.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/MultiInputStream.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Objects.java

*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/FinalizableSoftReference.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/LineReader.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Charsets.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/FinalizableWeakReference.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/LineBuffer.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Predicate.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ExecutionList.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteStreams.java

*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Function.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/Files.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

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jar/com/google/common/eventbus/AsyncEventBus.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/AbstractIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/DeadEvent.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/FinalizablePhantomReference.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/FinalizableReferenceQueue.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Interners.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Predicates.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CountingInputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CharStreams.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Suppliers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListenableFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Supplier.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Primitives.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/EventBus.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CountingOutputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/Closeables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Defaults.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/Flushables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Throwables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashBiMap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/AllowConcurrentEvents.java

```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LittleEndianDataInputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Functions.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Resources.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableReference.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EnumMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/package-info.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Preconditions.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LittleEndianDataOutputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/DirectExecutor.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/SuccessorsFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableGraph.java

*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Network.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/PredecessorsFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Graphs.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TopKSelector.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableNetwork.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableNetwork.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MultimapBuilder.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/package-info.java

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*

* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's

* `java.util.HashMap`

class.

*/

Found in path(s):

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Striped.java

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*/
/**
* Not supported. <b>You are attempting to create a map that may contain a non-{@code Comparable}
* key.</b> Proper calls will resolve to the version in { @code ImmutableSortedMap}, not this dummy
* version.
*
* @throws UnsupportedOperationException always
* @deprecated <b>Pass a key of type { @code Comparable}
to use { @link
*   ImmutableSortedMap#of(Comparable, Object)}.</b>
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Platform.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/html/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/BaseEncoding.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteSink.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/StandardSystemProperty.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CartesianList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ServiceManager.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableRangeMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/PairedStatsAccumulator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractByteHasher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Closer.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/PairedStats.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/SipHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/LongAddable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/ClassPath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CharSink.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/reflect/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/ChecksumHashFunction.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeCapture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FilteredKeyMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/FileWriteMode.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/Invokable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableRangeSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LongAddable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CharSource.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/MutableTypeToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/LinearTransformation.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SmoothRateLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/LongAddables.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/StatsAccumulator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/Stats.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LongAddables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/Parameter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/AbstractInvocationHandler.java

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jar/com/google/common/collect/ObjectCountLinkedHashMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ClosingFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractBaseGraph.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/Traverser.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/BaseGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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 */
```

```
/*
 * This following method is a modified version of one found in
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 * which contained the following notice:
 *
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 *
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 *
 * Other contributors include Andrew Wright, Jeffrey Hayes, Pat Fisher, Mike Judd.
 */
```

Found in path(s):

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/MoreExecutors.java
```

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 */
```

Found in path(s):

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Floats.java
```

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SequentialExecutor.java
```

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Shorts.java
```

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Ints.java
```

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/InetAddresses.java
```

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Longs.java
```

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/MultiReader.java
```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/UnicodeEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Doubles.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListenableFutureTask.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Chars.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/PercentEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/internal/Finalizer.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/CharMatcher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/thirdparty/publicsuffix/TrieParser.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Joiner.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/Escaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Converter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Booleans.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Stopwatch.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FluentIterable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Bytes.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/FileBackedOutputStream.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ArrayTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSetMultimap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableSortedSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ComputationException.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractIndexedListIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EmptyImmutableSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableClassToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableEnumSet.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ComparisonChain.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableAsList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SingletonImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DiscreteDomain.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingTable.java
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*/
/**
* Outer class that exists solely to let us write { @code Partially.GwtIncompatible } instead of plain
* { @code GwtIncompatible }. This is more accurate for { @link Futures#catching }, which is available
* under GWT but with a slightly different signature.
*
* <p>We can't use { @code PartiallyGwtIncompatible } because then the GWT compiler
wouldn't recognize
* it as a { @code GwtIncompatible } annotation. And for { @code Futures.catching }, we need the GWT
* compiler to autostrip the normal server method in order to expose the special, inherited GWT
* version.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Partially.java
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Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMapEntry.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ExplicitOrdering.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
```

jar/com/google/common/collect/Multiset.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LexicographicalOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractSortedSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/UsingToStringOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingObject.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingQueue.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EnumBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EnumHashBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ConcurrentHashMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NullsFirstOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Multimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CompoundOrdering.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ByFunctionOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SortedSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashMultimap.java

```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSet.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMapEntry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Lists.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingListIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NaturalOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMultiset.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedHashMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ReverseNaturalOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSortedMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SetMultimap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Multisets.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SingletonImmutableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MutableClassToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MapDifference.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NullsLastOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Ordering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

```

jar/com/google/common/collect/ImmutableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeMultiset.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Sets.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingCollection.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Synchronized.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ReverseOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Multimaps.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ArrayListMultimap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSortedSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingConcurrentMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ClassToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Iterators.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Maps.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ComparatorOrdering.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedHashMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Interner.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/BiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Iterables.java
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```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ServiceManagerBridge.java
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 */
```

Found in path(s):

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/package-info.java
```

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*/
/*
* This method was rewritten in Java from an intermediate step of the Murmur hash function in
* http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
* following header:
*
* MurmurHash3 was written by Austin Appleby, and is placed in the public domain. The author
* hereby
disclaims copyright to this source code.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Hashing.java
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Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/PatternCompiler.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/CommonPattern.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/JdkPattern.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/CommonMatcher.java
```

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 */
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 * This method was rewritten in Java from an intermediate step of the Murmur hash function in
 * http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
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 */
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/SmallCharMatcher.java
```

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```

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
```


jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MapMakerInternalMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/HostSpecifier.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeResolver.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Platform.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/annotations/GwtIncompatible.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/annotations/GwtCompatible.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractIdleService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/ReferenceEntry.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/UnsignedBytes.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/ArrayBasedCharEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteProcessor.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/html/HtmlEscapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/UrlEscapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Cut.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Callables.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/InternetDomainName.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteArrayDataInput.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/ArrayBasedEscaperMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MapMaker.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingFluentFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/JdkFutureAdapters.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingListenableFuture.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/Escapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DenseImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/CacheBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteArrayDataOutput.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/SettableFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Service.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/Platform.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LocalCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineProcessor.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/XmlEscapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SparseImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Splitter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/SignedBytes.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/TimeoutFuture.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/FluentFuture.java

*

/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/CharEscaper.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/UncheckedTimeoutException.java

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/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ImmediateFuture.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeToken.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/VisibleForTesting.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractCatchingFuture.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/CaseFormat.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/AppendableWriter.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/GwtFluentFutureCatchingSpecialization.java

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/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/TimeLimiter.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/util/concurrent/FakeTimeLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/CharEscaperBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AggregateFuture.java
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jar/com/google/common/util/concurrent/NullnessCasts.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/NullnessCasts.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NullnessCasts.java
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*/  
/**  
* Holder for web specializations of methods of { @code Doubles}. Intended to be empty for regular  
* version.
```

*/

Found in path(s):

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/DoublesMethodsForWeb.java

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/ParametricNullness.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/ParametricNullness.java

*

*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/ElementTypesAreNonnullByDefault.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/html/ElementTypesAreNonnullByDefault.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ParametricNullness.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ParametricNullness.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/ElementTypesAreNonnullByDefault.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/ParametricNullness.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ParametricNullness.java

*

*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/ElementTypesAreNonnullByDefault.java

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/html/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ParametricNullness.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ParametricNullness.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ElementTypesAreNonnullByDefault.java
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```
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
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```
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/TreeTypeAdapter.java
```

```
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
```

jar/com/google/gson/internal/bind/DateTypeAdapter.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/ConstructorConstructor.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/sql/SqlDateTypeAdapter.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/UnsafeAllocator.java
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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/ArrayTypeAdapter.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/JsonTreeReader.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/MapTypeAdapterFactory.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/TypeAdapterFactory.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/JsonReaderInternalAccess.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/TypeAdapters.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/ObjectTypeAdapter.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/TypeAdapter.java
*

/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/JsonTreeWriter.java

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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonObject.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonArray.java

*

/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/FieldNamingStrategy.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/annotations/SerializedName.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonDeserializationContext.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/Excluder.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/FieldNamingPolicy.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/\$Gson\$Preconditions.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/DefaultDateTypeAdapter.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-

jar/com/google/gson/JsonSerializationContext.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/JsonParseException.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/ObjectConstructor.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/Gson.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/JsonIOException.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/reflect/TypeToken.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/JsonDeserializer.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/annotations/Expose.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/internal/Primitives.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/GsonBuilder.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/JsonSerializer.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/annotations/Since.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/JsonPrimitive.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/ExclusionStrategy.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/annotations/Until.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/InstanceCreator.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonNull.java
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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/JsonAdapterAnnotationTypeAdapterFactory.java

* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/annotations/JsonAdapter.java

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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/LinkedTreeMap.java

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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonReader.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/MalformedJsonException.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonScope.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonToken.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonWriter.java

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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/reflect/ReflectionAccessor.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/reflect/UnsafeReflectionAccessor.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/PreJava9DateFormatProvider.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/JavaVersion.java

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jar/com/google/gson/ToNumberPolicy.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/ToNumberStrategy.java
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* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonSyntaxException.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/Streams.java

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- * /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/LongSerializationPolicy.java
- * /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/FieldAttributes.java
- *
- /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonParser.java

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However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major

components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year>  
<name of author>
```

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Also add information on how to contact you by electronic and paper mail.

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```
<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice
```

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[This is the first released version of the Lesser GPL. It also counts
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@subheading Preamble

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For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
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We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it,

either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must

cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2,

instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise,
if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

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@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than

copying library functions into the executable,
and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

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If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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For an executable, the required form of the ``work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

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@enumerate a

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Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

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@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

```
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@var{one line to give the library's name and an idea of what it does.}
Copyright (C) @var{year} @var{name of author}
```

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1.248 rocksdbjni 6.29.4.1

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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/RocksMutableObject.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/AbstractNativeReference.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/AbstractImmutableNativeReference.java
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```
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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/MutableOptionValue.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/SkipListMemTableConfig.java
```

```
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/AbstractMutableOptions.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/InfoLogLevel.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/util/Environment.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/AbstractTableFilter.java
*
/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/MutableDBOptionsInterface.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TransactionLogIterator.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/HashLinkedListMemTableConfig.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/NativeLibraryLoader.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TableFilter.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TableProperties.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/HashSkipListMemTableConfig.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/CompactionStopStyle.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/SizeApproximationFlag.java
*
/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/VectorMemTableConfig.java
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jar/org/rocksdb/CassandraCompactionFilter.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/CassandraValueMergeOperator.java
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jar/org/rocksdb/MergeOperator.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/StringAppendOperator.java
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```
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jar/org/rocksdb/LRUCache.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/MutableDBOptions.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/AbstractTraceWriter.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/RocksCallbackObject.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/WriteStallCondition.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/BackupEngine.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/LiveFileMetaData.java  
*  
/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/WalProcessingOption.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/OperationType.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/WriteBatchWithIndex.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/TableFileDeletionInfo.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Cache.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/AbstractRocksIterator.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/CompactRangeOptions.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-  
jar/org/rocksdb/DBOptions.java  
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Range.java
```

```

*
/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TransactionalDB.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/SstFileManager.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/IndexType.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/NativeComparatorWrapper.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/CompactionOptionsFIFO.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/ComparatorType.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/EncodingType.java
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jar/org/rocksdb/TimedEnv.java
*
/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TableFileCreationInfo.java
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jar/org/rocksdb/OptionsUtil.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/WBWIRocksIterator.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TickerType.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/AbstractCompactionFilter.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/Experimental.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/EventListener.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/AbstractComparatorJniBridge.java
*
/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/AbstractWalFilter.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/EnvOptions.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Status.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/BackupInfo.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/AccessHint.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/RocksDBException.java

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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/TableFormatConfig.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/ReadTier.java
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 /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/SstFileReader.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Transaction.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/OptimisticTransactionOptions.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/WriteBatchInterface.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/MemoryUsageType.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/KeyMayExist.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/StateType.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/TransactionDBOptions.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/AbstractTransactionNotifier.java
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 /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Logger.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/RocksObject.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Env.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/SstFileWriter.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/TableFileCreationBriefInfo.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/FileOperationInfo.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Slice.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/RemoveEmptyValueCompactionFilter.java
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 /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/AdvancedColumnFamilyOptionsInterface.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/StatsLevel.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/WalFileType.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/StatisticsCollectorCallback.java
 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/WriteBufferManager.java

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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
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jar/org/rocksdb/TraceWriter.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Statistics.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
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/opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/TraceOptions.java
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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/Priority.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/RocksIterator.java
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jar/org/rocksdb/TransactionalOptions.java
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jar/org/rocksdb/ColumnFamilyMetaData.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/HdfsEnv.java
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jar/org/rocksdb/Snapshot.java
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jar/org/rocksdb/MutableColumnFamilyOptionsInterface.java
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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-
jar/org/rocksdb/FlushJobInfo.java

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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/AbstractSlice.java
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 * /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/TransactionDB.java
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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/OperationStage.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/StatisticsCollector.java
* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/WALRecoveryMode.java
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* /opt/cola/permits/1337889341_1654234492.4138217/0/rocksdbjni-6-29-4-1-sources-jar/org/rocksdb/TxnDBWritePolicy.java
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1.249 free-type 2.12.1

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--- end of FTL.TXT ---

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#

All lines in this file are patterns, including the comment lines; this

means that e.g. `FTL.TXT' matches all files that have this string in

the file name (including the path relative to the current directory,

always starting with `./').

#

Don't put empty lines into this file!

#

builds/unix/pkg.m4

#

docs/FTL.TXT

docs/GPLv2.TXT

#

include/freetype/internal/fthash.h

#

src/base/fthash.c

```
src/base/md5.c
src/base/md5.h
#
src/bdf/bdf.c
src/bdf/bdf.h
src/bdf/bdfdrivr.c
src/bdf/bdfdrivr.h
src/bdf/bdferror.h
src/bdf/bdflib.c
src/bdf/module.mk
src/bdf/README
src/bdf/rules.mk
#
src/pcf/module.mk
src/pcf/pcf.c
src/pcf/pcf.h
src/pcf/pcfdrivr.c
src/pcf/pcfdrivr.h
src/pcf/pcferror.h
src/pcf/pcfread.c
src/pcf/pcfread.h
src/pcf/pcfutil.c
src/pcf/pcfutil.h
src/pcf/README
src/pcf/rules.mk
#
src/gzip/adler32.c
src/gzip/infblock.c
src/gzip/infblock.h
src/gzip/infcodes.c
src/gzip/infcodes.h
src/gzip/inffixed.h
src/gzip/inflate.c
src/gzip/inftrees.c
src/gzip/inftrees.h
src/gzip/infutil.c
src/gzip/infutil.h
src/gzip/zconf.h
src/gzip/zlib.h
src/gzip/zutil.c
src/gzip/zutil.h
#
src/tools/apinames.c
src/tools/ftrandom/ftrandom.c
#
subprojects/dlg
#
#
```

EOF

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```

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(at your option) any later version.
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GNU General Public License for more details.
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1.251 okhttp 4.10.0

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1.252 antlr 3.5.3

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*/

/** Templates for building ASTs during normal parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* The situation is not too bad as rewrite (->) usage makes ^ and

!

* invalid. There is no huge explosion of combinations.

*/

```
@rule.setErrorReturnValue() ::= <<
```

```
retval.Tree = (<ASTLabelType>)adaptor.ErrorNode(input, retval.Start, input.LT(-1), re);
```

```
<! System.out.WriteLine("<ruleName> returns "+((CommonTree)retval.tree).toStringTree()); !>
```

```
>>
```

```
// TOKEN AST STUFF
```

```
/** ID and output=AST */
```

```
tokenRef(token,label,elementIndex,terminalOptions={ }) ::= <<
```

```
<super.tokenRef(...)>
```

```
<if(backtracking)>if (state.backtracking == 0) {<endif>
```

```
<label>_tree = <createNodeFromToken(...)>;
```

```
adaptor.AddChild(root_0, <label>_tree);
```

```
<if(backtracking)>}<endif>
```

```
>>
```

```
/** ID! and output=AST (same as plain tokenRef) */
```

```
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"
```

```
/** ID^ and output=AST */
```

```
tokenRefRuleRoot(token,label,elementIndex,terminalOptions={ }) ::= <<
```

```
<super.tokenRef(...)>
```

```
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
```

```
<label>_tree = <createNodeFromToken(...)>;
```

```
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
```

```
<if(backtracking)>}<endif>
```

```
>>
```



```

/**
ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefBang(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefRuleRoot(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
//
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <<
<super.matchSet(postmatchCode={<if(backtracking)>if (<actions.(actionScope).synpredgate>
<endif>adaptor.AddChild(root_0, <createNodeFromToken(...)>);}, ...)>
>>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={}) ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={}) ::= <<

```

```

<if(label)>
<label>=(<labelType>)input.LT(1);
<endif>
<super.matchSet(postmatchCode={ <if(backtracking)>if
(<actions.(actionScope).synpredgate>) <endif>root_0 =
(<ASTLabelType>)adaptor.BecomeRoot(<createNodeFromToken(...)>, root_0);}, ...)>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>adaptor.AddChild(root_0, <label>.Tree);
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_0 =
(<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_0);
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope)
::: <<
<ruleRefBang(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

// WILDCARD AST

wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<

```

```

<super.wildcard(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)>}<endif>
>>

```

```
wildcardBang(label,elementIndex) ::= "<super.wildcard(token=[],...)>"
```

```

wildcardRuleRoot(token,label,elementIndex,terminalOptions={ }) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)>}<endif>
>>

```

```

createNodeFromToken(label,terminalOptions={ })
::= <%
<if(terminalOptions.node)>
new
<terminalOptions.node><if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.text)>,<terminalOptions.text; format="string"><endif>
<else>
(<ASTLabelType>)adaptor.Create(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.text)>,<terminalOptions.text; format="string"><endif>
<endif>
%>

```

```

ruleCleanup() ::= <<
<super.ruleCleanup()>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
retval.Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
adaptor.SetTokenBoundaries(retval.Tree, retval.Start, retval.Stop);
<if(backtracking)>}<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp2/ASTParser.stg

```

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```

/*
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*
* Conversion to C#:

```

```

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* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*/
/** Template subgroup to add template rewrite output
* If debugging, then you'll also get STDbg.stg loaded.
*/

@outputFile.imports() ::= <<
<@super.imports()>
using Antlr3.ST;
using Antlr3.ST.Language;
>>

@genericParser.members() ::= <<
<@super.members()>
private StringTemplateGroup _templateGroup = new StringTemplateGroup("<name>Templates",
    typeof(AngleBracketTemplateLexer) );

public StringTemplateGroup TemplateGroup
{
    get { return _templateGroup; }
    set { _templateGroup = value; }
}
>>

```

```

ruleReturnBaseType() ::= <%
Template<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope\<StringTemplate, <labelType>>
%>

/** x+=rule when output=template */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelElem(elem={<label>.Template},elemType="StringTemplate",...)>
>>

rewriteTemplate(alts) ::= <<

// TEMPLATE REWRITE
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
}
<else>
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
<endif>
>>

replaceTextInLine() ::= <<
<if(TREE_PARSER)>
((TokenRewriteStream)input.TokenStream).Replace(
input.TreeAdaptor.GetTokenStartIndex(retval.Start),
input.TreeAdaptor.GetTokenStopIndex(retval.Start),
retval.Template);
<else>
((TokenRewriteStream)input).Replace(
retval.Start.TokenIndex,
input.LT(-1).TokenIndex,
retval.Template);
<endif>
>>

rewriteTemplateAlt(it)
::= <<
// <it.description>
<if(it.pred)>
if (<it.pred>)
{
retval.Template = <it.alt>;
}<\n>
<else>

```

```

{
    retval.Template = <it.alt>;
}
<\n>
<endif>
>>

rewriteEmptyTemplate(alts) ::= <<
null;
>>

/** Invoke a template with a set of attribute name/value pairs.
 * Set the value of the rule's template *after* having set
 * the attributes because the rule's template might be used as
 * an attribute to build a bigger template; you get a self-embedded
 * template.
 */
rewriteExternalTemplate(name,args) ::= <%
TemplateGroup.GetInstanceOf("<name>"<optionalArguments(args)>)
%>

/** expr is a string expression that says what template to load */
rewriteIndirectTemplate(expr,args) ::= <%
TemplateGroup.GetInstanceOf(<expr>"<optionalArguments(args)>")
%>

/** Invoke an inline template with a set of attribute name/value pairs */
rewriteInlineTemplate(args,
    template) ::= <%
new StringTemplate(TemplateGroup, "<template>"<optionalArguments(args)>)
%>

optionalArguments(args) ::= <<
<if(args)>,
    new Dictionary<string, object>() { <args:optionalArgument(); separator=", "> }
<endif>
>>

optionalArgument(it) ::= <<
{"<it.name>", <it.value>}
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
<action>
>>

/** An action has %st.attrName=expr; or % {st}.attrName=expr; */
actionSetAttribute(st,attrName,expr) ::= <<

```

```
(<st>).SetAttribute("<attrName>",<expr>);
```

```
>>
```

```
/** Translate %{stringExpr} */
```

```
actionStringConstructor(stringExpr) ::= <<
```

```
new StringTemplate(TemplateGroup,<stringExpr>)
```

```
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/CSharp3/ST.stg
```

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```
*/
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
```

```
jar/org/antlr/codegen/templates/Python3/ASTDbg.stg
```

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```
/*
```

```
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*/

/*

New style messages. This file only contains the messages in English, but no information about which file, line, or column it occurred in.

The location and message ids are taken out of the formats directory.

Kay Roepke

*/

group en_US;

// TOOL ERRORS

// file errors

CANNOT_WRITE_FILE(arg,exception,stackTrace) ::= <<

cannot write file <arg>: <exception>

<stackTrace; separator="\n">

>>

CANNOT_CLOSE_FILE(arg,exception,stackTrace) ::= "cannot close file <arg>: <exception>"

CANNOT_FIND_TOKENS_FILE(arg)

::= "cannot find tokens file <arg>"

ERROR_READING_TOKENS_FILE(arg,exception,stackTrace) ::= <<

problem reading token vocabulary file <arg>: <exception>

<stackTrace; separator="\n">

>>

DIR_NOT_FOUND(arg,exception,stackTrace) ::= "directory not found: <arg>"

OUTPUT_DIR_IS_FILE(arg,exception,stackTrace) ::= "output directory is a file: <arg>"

CANNOT_OPEN_FILE(arg,exception,stackTrace) ::= "cannot find or open file: <arg><if(exception)>; reason: <exception><endif>"


```

CIRCULAR_DEPENDENCY() ::= "your grammars contain a circular dependency and cannot be sorted into a valid
build order."

INTERNAL_ERROR(arg,arg2,exception,stackTrace) ::= <<
internal error: <arg> <arg2><if(exception)>: <exception><endif>
<stackTrace; separator="\n">
>>
INTERNAL_WARNING(arg) ::= "internal warning: <arg>"
ERROR_CREATING_ARTIFICIAL_RULE(arg,exception,stackTrace) ::= <<
problems creating lexer rule listing all tokens: <exception>
<stackTrace; separator="\n">
>>
TOKENS_FILE_SYNTAX_ERROR(arg,arg2)
::=
"problems parsing token vocabulary file <arg> on line <arg2>"
CANNOT_GEN_DOT_FILE(arg,exception,stackTrace) ::=
"cannot write DFA DOT file <arg>: <exception>"
BAD_ACTION_AST_STRUCTURE(exception,stackTrace) ::=
"bad internal tree structure for action '<arg>': <exception>"
BAD_AST_STRUCTURE(arg,exception,stackTrace) ::= <<
bad internal tree structure '<arg>': <exception>
<stackTrace; separator="\n">
>>
FILE_AND_GRAMMAR_NAME_DIFFER(arg,arg2) ::=
"file <arg2> contains grammar <arg>; names must be identical"
FILENAME_EXTENSION_ERROR(arg) ::=
"file <arg> must end in a file extension, normally .g"

// code gen errors
MISSING_CODE_GEN_TEMPLATES(arg) ::=
"cannot find code generation templates <arg>.stg"
MISSING_CYCLIC_DFA_CODE_GEN_TEMPLATES() ::=
"cannot find code generation cyclic DFA templates for language <arg>"
CODE_GEN_TEMPLATES_INCOMPLETE(arg) ::=
"at least one code generation template missing for language <arg>"
CANNOT_CREATE_TARGET_GENERATOR(arg,exception,stackTrace)
::=
"cannot create target <arg> code generator: <exception>"
STRING_TEMPLATE_ERROR(arg,exception,stackTrace) ::=
"template error: <arg>"
CANNOT_COMPUTE_SAMPLE_INPUT_SEQ() ::=
"cannot generate a sample input sequence from lookahead DFA"

// grammar interpretation errors
/*
NO_VIABLE_DFA_ALT(arg,arg2) ::=
"no viable transition from state <arg> on <arg2> while interpreting DFA"
*/

```

```

// GRAMMAR ERRORS
SYNTAX_ERROR(arg) ::= "syntax error: <arg>"
RULE_REDEFINITION(arg) ::=
    "rule <arg> redefinition"
LEXER_RULES_NOT_ALLOWED(arg) ::=
    "lexer rule <arg> not allowed in parser"
PARSER_RULES_NOT_ALLOWED(arg) ::=
    "parser rule <arg> not allowed in lexer"
CANNOT_FIND_ATTRIBUTE_NAME_IN_DECL(arg) ::=
    "cannot find an attribute name in attribute declaration"
NO_TOKEN_DEFINITION(arg) ::=
    "no lexer rule corresponding to token: <arg>"
UNDEFINED_RULE_REF(arg) ::=
    "reference to undefined rule: <arg>"
LITERAL_NOT_ASSOCIATED_WITH_LEXER_RULE(arg) ::=
    "literal has no associated lexer rule: <arg>"
CANNOT_ALIAS_TOKENS_IN_LEXER(arg)
::=
    "literals are illegal in lexer tokens{ } section: <arg>"
ATTRIBUTE_REF_NOT_IN_RULE(arg,arg2) ::=
    "reference to attribute outside of a rule: <arg><if(arg2)>.<arg2><endif>"
UNKNOWN_ATTRIBUTE_IN_SCOPE(arg,arg2) ::=
    "unknown attribute for <arg>: <arg2>"
UNKNOWN_RULE_ATTRIBUTE(arg,arg2) ::=
    "unknown attribute for rule <arg>: <arg2>"
UNKNOWN_SIMPLE_ATTRIBUTE(arg,args2) ::=
    "attribute is not a token, parameter, or return value: <arg>"
ISOLATED_RULE_SCOPE(arg) ::=
    "missing attribute access on rule scope: <arg>"
INVALID_RULE_PARAMETER_REF(arg,arg2) ::=
    "cannot access rule <arg>'s parameter: <arg2>"
INVALID_RULE_SCOPE_ATTRIBUTE_REF(arg,arg2) ::=
    "cannot access rule <arg>'s dynamically-scoped attribute: <arg2>"
SYMBOL_CONFLICTS_WITH_GLOBAL_SCOPE(arg) ::=
    "symbol <arg> conflicts with global dynamic scope with same name"
WRITE_TO_READONLY_ATTR(arg,arg2,arg3) ::=
    "cannot write to read only attribute: $<arg><if(arg2)>.<arg2><endif>"
LABEL_CONFLICTS_WITH_RULE(arg)
::=
    "label <arg> conflicts with rule with same name"
LABEL_CONFLICTS_WITH_TOKEN(arg) ::=
    "label <arg> conflicts with token with same name"
LABEL_CONFLICTS_WITH_RULE_SCOPE_ATTRIBUTE(arg,arg2) ::=
    "label <arg> conflicts with rule <arg2>'s dynamically-scoped attribute with same name"
LABEL_CONFLICTS_WITH_RULE_ARG_RETVAL(arg,arg2) ::=
    "label <arg> conflicts with rule <arg2>'s return value or parameter with same name"
ATTRIBUTE_CONFLICTS_WITH_RULE(arg,arg2) ::=

```

```

"rule <arg2>'s dynamically-scoped attribute <arg> conflicts with the rule name"
ATTRIBUTE_CONFLICTS_WITH_RULE_ARG_RETVAL(arg,arg2) ::=
"rule <arg2>'s dynamically-scoped attribute <arg> conflicts with<arg2>'s return value or parameter with same
name"
LABEL_TYPE_CONFLICT(arg,arg2) ::=
"label <arg> type mismatch with previous definition: <arg2>"
ARG_RETVAL_CONFLICT(arg,arg2) ::=
"rule <arg2>'s argument <arg> conflicts a return value with same name"
NONUNIQUE_REF(arg) ::=
"<arg> is a non-unique reference"
FORWARD_ELEMENT_REF(arg)
::=
"illegal forward reference: <arg>"
MISSING_RULE_ARGS(arg) ::=
"missing parameter(s) on rule reference: <arg>"
RULE_HAS_NO_ARGS(arg) ::=
"rule <arg> has no defined parameters"
ARGS_ON_TOKEN_REF(arg) ::=
"token reference <arg> may not have parameters"
ILLEGAL_OPTION(arg) ::=
"illegal option <arg>"
LIST_LABEL_INVALID_UNLESS_RETVAL_STRUCT(arg) ::=
"rule '+=' list labels are not allowed w/o output option: <arg>"
UNDEFINED_TOKEN_REF_IN_REWRITE(arg) ::=
"reference to undefined token in rewrite rule: <arg>"
REWRITE_ELEMENT_NOT_PRESENT_ON_LHS(arg) ::=
"reference to rewrite element <arg> without reference on left of ->"
UNDEFINED_LABEL_REF_IN_REWRITE(arg) ::=
"reference to undefined label in rewrite rule: $<arg>"
NO_GRAMMAR_START_RULE (arg) ::=
"grammar <arg>: no start rule (no rule can obviously be followed by EOF)"
EMPTY_COMPLEMENT(arg) ::= <<
<if(arg)>
set complement ~<arg> is empty
<else>
set complement is empty
<endif>
>>
UNKNOWN_DYNAMIC_SCOPE(arg) ::=
"unknown
dynamic scope: <arg>"
UNKNOWN_DYNAMIC_SCOPE_ATTRIBUTE(arg,arg2) ::=
"unknown dynamically-scoped attribute for scope <arg>: <arg2>"
RULE_REF_AMBIG_WITH_RULE_IN_ALT(arg) ::=
"reference $<arg> is ambiguous; rule <arg> is enclosing rule and referenced in the production (assuming enclosing
rule)"
ISOLATED_RULE_ATTRIBUTE(arg) ::=
"reference to locally-defined rule scope attribute without rule name: <arg>"

```

INVALID_ACTION_SCOPE(arg,arg2) ::=
 "unknown or invalid action scope for <arg2> grammar: <arg>"

ACTION_REDEFINITION(arg) ::=
 "redefinition of <arg> action"

DOUBLE_QUOTES_ILLEGAL(arg) ::=
 "string literals must use single quotes (such as \'begin\'): <arg>"

INVALID_TEMPLATE_ACTION(arg) ::=
 "invalid StringTemplate % shorthand syntax: '<arg>'"

MISSING_ATTRIBUTE_NAME() ::=
 "missing attribute name on \$ reference"

ARG_INIT_VALUES_ILLEGAL(arg) ::=
 "rule parameters may not have init values: <arg>"

REWRITE_OR_OP_WITH_NO_OUTPUT_OPTION(arg) ::=
 "<if(arg)>rule <arg> uses <endif>rewrite
 syntax or operator with no output option; setting output=AST"

AST_OP_WITH_NON_AST_OUTPUT_OPTION(arg) ::=
 "AST operator with non-AST output option: <arg>"

NO_RULES(arg) ::= "grammar file <arg> has no rules"

MISSING_AST_TYPE_IN_TREE_GRAMMAR(arg) ::=
 "tree grammar <arg> has no ASTLabelType option"

REWRITE_FOR_MULTI_ELEMENT_ALT(arg) ::=
 "with rewrite=true, alt <arg> not simple node or obvious tree element; text attribute for rule not guaranteed to be correct"

RULE_INVALID_SET(arg) ::=
 "Cannot complement rule <arg>; not a simple set or element"

HETERO_ILLEGAL_IN_REWRITE_ALT(arg) ::=
 "alts with rewrites can't use heterogeneous types left of ->"

NO_SUCH_GRAMMAR_SCOPE(arg,arg2) ::=
 "reference to undefined grammar in rule reference: <arg>.<arg2>"

NO_SUCH_RULE_IN_SCOPE(arg,arg2) ::=
 "rule <arg2> is not defined in grammar <arg>"

TOKEN_ALIAS_CONFLICT(arg,arg2) ::=
 "cannot alias <arg>; string already assigned to <arg2>"

TOKEN_ALIAS_REASSIGNMENT(arg,arg2) ::=
 "cannot alias <arg>;
 token name already assigned to <arg2>"

TOKEN_VOCAB_IN_DELEGATE(arg,arg2) ::=
 "tokenVocab option ignored in imported grammar <arg>"

INVALID_IMPORT(arg,arg2) ::=
 "<arg.grammarTypeString> grammar <arg.name> cannot import <arg2.grammarTypeString> grammar
 <arg2.name>"

IMPORTED_TOKENS_RULE_EMPTY(arg,arg2) ::=
 "no lexer rules contributed to <arg> from imported grammar <arg2>"

IMPORT_NAME_CLASH(arg,arg2) ::=
 "combined grammar <arg.name> and imported <arg2.grammarTypeString> grammar <arg2.name> both generate
 <arg2.recognizerName>; import ignored"

AST_OP_IN_ALT_WITH_REWRITE(arg,arg2) ::=
 "rule <arg> alt <arg2> uses rewrite syntax and also an AST operator"

WILDCARD_AS_ROOT(arg) ::= "Wildcard invalid as root; wildcard can itself be a tree"
CONFLICTING_OPTION_IN_TREE_FILTER(arg,arg2) ::= "option <arg>=<arg2> conflicts with tree grammar filter mode"
ILLEGAL_OPTION_VALUE(arg, arg2) ::= "value '<arg2>' invalid for option <arg>"
ALL_OPS_NEED_SAME_ASSOC(arg) ::= "all operators of alt <alt> of left-recursive rule must have same associativity"
RANGE_OP_ILLEGAL(arg) ::= "the .. range operator isn't allowed in parser rules"

// GRAMMAR WARNINGS

GRAMMAR_NONDETERMINISM(input,conflictingAlts,paths,disabled,hasPredicateBlockedByAction) ::= <<
<if(paths)>
Decision can match input such as "<input>" using multiple alternatives:
<paths:{ it | alt <it.alt> via NFA path <it.states; separator=","><\n>}>
<else>
Decision can match input such as "<input>" using multiple alternatives: <conflictingAlts; separator=",">
<endif>
<if(disabled)><\n>As a result, alternative(s) <disabled; separator=","> were disabled for that input<endif><if(hasPredicateBlockedByAction)><\n>Semantic predicates were present but were hidden by actions.<endif>
>>

DANGLING_STATE(danglingAlts,input) ::= <<
the decision cannot distinguish between alternative(s) <danglingAlts; separator=","> for input such as "<input>"
>>

UNREACHABLE_ALTS(alts) ::= <<
The following alternatives can never be matched: <alts; separator=","><\n>
>>

INSUFFICIENT_PREDICATES(upon,altToLocations,hasPredicateBlockedByAction) ::= <<
Input such as "<upon>" is insufficiently covered with predicates at locations: <altToLocations.keys:{ alt|alt <alt>: <altToLocations.(alt):{loc| line <loc.line>:<loc.column> at <loc.text>} }; separator=","> ; separator=",">
>><if(hasPredicateBlockedByAction)><\n>Semantic predicates were present but were hidden by actions.<endif>
>>

DUPLICATE_SET_ENTRY(arg) ::=
"duplicate token type <arg> when collapsing subrule into set"

ANALYSIS_ABORTED(enclosingRule) ::= <<
ANTLR could not analyze this decision in rule <enclosingRule>; often this is because of recursive rule references visible from the left edge of alternatives. ANTLR will re-analyze the decision with a fixed lookahead of k=1. Consider using "options {k=1;}" for that decision and possibly adding a syntactic predicate.
>>

RECURSION_OVERFLOW(alt,input,targetRules,callSiteStates) ::= <<

Alternative <alt>: after matching input such as <input> decision
cannot predict what comes next due to recursion overflow <targetRules,callSiteStates:{t,c|to <t> from
<c:{s|<s.enclosingRule.name>};separator=", ">; separator=" and ">
>>

LEFT_RECURSION(targetRules,alt,callSiteStates) ::= <<
Alternative <alt> discovers infinite left-recursion <targetRules,callSiteStates:{t,c|to <t> from
<c:{s|<s.enclosingRule>};separator=", ">; separator=" and ">
>>

UNREACHABLE_TOKENS(tokens) ::= <<
The following token definitions can never be matched because prior tokens match the same input: <tokens;
separator=", ">
>>

TOKEN_NONDETERMINISM(input,conflictingTokens,paths,disabled,hasPredicateBlockedByAction) ::= <<
<<
<if(paths)>
Decision can match input such as "<input>" using multiple alternatives:
<paths:{ it | alt <it.alt> via NFA path <it.states; separator=", "><\n> }>
<else>
Multiple token rules can match input such as "<input>": <conflictingTokens; separator=", "><\n>
<endif>
<if(disabled)><\n>As a result, token(s) <disabled; separator=", "> were disabled for
that input<endif><if(hasPredicateBlockedByAction)><\n>Semantic predicates were present but were hidden by
actions.<endif>
>>

LEFT_RECURSION_CYCLES(listOfCycles) ::= <<
The following sets of rules are mutually left-recursive <listOfCycles:{c| [<c:{r|<r.name>}; separator=", ">];
separator=" and ">
>>

NONREGULAR_DECISION(ruleName,alts) ::= <<
[fatal] rule <ruleName> has non-LL(*) decision due to recursive rule invocations reachable from alts <alts;
separator=", ">. Resolve by left-factoring or using syntactic predicates or using backtrack=true option.
>>

```
/* 110n for message levels */  
warning() ::= "warning"  
error() ::= "error"
```

Found in path(s):
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/tool/templates/messages/languages/en.stg
No license file was found, but licenses were detected in source scan.

```
/*
```

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*/

/*

New style messages. This file contains the actual layout of the messages emitted by ANTLR. The text itself is coming out of the languages/*stg files, according to the chosen locale. This file contains the format that mimicks GCC output.

*/

group gnu;

location(file, line, column) ::= "<file>:<line>:"

message(id, text) ::= "<text> (<id>)"

report(location, message, type) ::= "<location> <type>: <message>"

wantsSingleLineMessage() ::= "true"

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/tool/templates/messages/formats/gnu.stg

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*/

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/ObjC/Dbg.stg

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*/

```
csharpVisibilityMap ::= [
  "private":"private",
  "protected":"protected",
  "public":"public",
  "fragment":"private",
  default:"private"
]
```

```
/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
```

```
outputFile( LEXER,PARSER,TREE_PARSER, actionScope, actions,
  docComment, recognizer,
  name,
  tokens, tokenNames, rules, cyclicDFAs,
  bitsets, buildTemplate, buildAST, rewriteMode, profile,
  backtracking, synpreds, memoize, numRules,
  fileName, ANTLRVersion, generatedTimestamp, trace,
  scopes, superClass, literals) ::=
```

```
<<
//-----
// \<auto-generated>
//   This code was generated by a tool.
//   ANTLR Version: <ANTLRVersion>
//
//   Changes to this file may cause incorrect behavior and will be lost if
//   the code is regenerated.
// \</auto-generated>
//-----
```

```
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
```

```

// The variable 'variable' is assigned but its value is never used.
#pragma warning disable 219
// Unreachable code detected.
#pragma warning disable 162
// Missing XML comment for publicly visible type or member 'Type_or_Member'
#pragma warning disable 1591
// CLS compliance checking will not
    be performed on 'type' because it is not visible from outside this assembly.
#pragma warning disable 3019

<actions.(actionScope).header>

<@imports>
using System.Collections.Generic;
using Antlr.Runtime;
using Antlr.Runtime.Misc;
<if(TREE_PARSER)>
using Antlr.Runtime.Tree;
using RewriteRuleITokenStream = Antlr.Runtime.Tree.RewriteRuleTokenStream;
<endif>
<@end>
<if(actions.(actionScope).namespace)>
namespace <actions.(actionScope).namespace>
{
<endif>
<docComment>
<recognizer>
<if(actions.(actionScope).namespace)>

} // namespace <actions.(actionScope).namespace>
<endif>
>>

lexerInputStreamType() ::= <<
<actions.(actionScope).inputStreamType; null="ICharStream">
>>

lexer(grammar, name, tokens, scopes, rules, numRules, filterMode, labelType="CommonToken",
superClass={ <if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else>Antlr.Runtime.Lexer
<endif>},
    rewriteElementType={}, ASTLabelType={}) ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<ANTLRVersion>")]
[System.CLSCompliant(false)]
<parserModifier(grammar=grammar,
actions=actions)> partial class <grammar.recognizerName> : <@superClassName><superClass><@end>
{
    <tokens: {it|public const int <it.name; format="id">=<it.type>;}; separator="\n">

```

```

<scopes: { it | <if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif> }>
<actions.lexer.members>

// delegates
<grammar.delegates:
  { g | private <g.recognizerName> <g.delegateName(>); }; separator="\n">
// delegators
<grammar.delegators:
  { g | private <g.recognizerName> <g.delegateName(>); }; separator="\n">
<last(grammar.delegators): { g | private <g.recognizerName> gParent; }>

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<! needed by subclasses !>
{
  OnCreated();
}

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<lexerInputStreamType(>
input<grammar.delegators: { g |, <g.recognizerName> <g.delegateName(> }> )
: this(input, new RecognizerSharedState(<grammar.delegators: { g |,
<g.delegateName(> }> )
{
}

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<lexerInputStreamType(> input,
RecognizerSharedState state<grammar.delegators: { g |, <g.recognizerName> <g.delegateName(> }> )
: base(input, state)
{
<if(memoize)>
<if(grammar.grammarIsRoot)>
  state.ruleMemo = new System.Collections.Generic.Dictionary<int, int>[<numRules>+1];<\n><! index from 1..n !>
<endif>
<endif>
  <grammar.directDelegates:
    { g | <g.delegateName(> = new <g.recognizerName>(input, this.state<trunc(g.delegators): { p |,
<p.delegateName(> }>, this); }; separator="\n">
  <grammar.delegators:
    { g | this.<g.delegateName(> = <g.delegateName(>); }; separator="\n">
  <last(grammar.delegators): { g | gParent = <g.delegateName(> }>

  OnCreated();
}
public override string GrammarFileName { get { return "<fileName>"; } }

<if(grammar.hasDelegates)>
public override <lexerInputStreamType(> CharStream
{
  get
  {

```

```

return base.CharStream;
}
set
{
base.CharStream
= value;
<grammar.directDelegates:
{g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegates):{p|, <p.delegateName()>}>,
this);}; separator="\n">
<grammar.delegates:
{g|this.<g.delegateName()> = <g.delegateName()>}; separator="\n">
<last(grammar.delegates):{g|gParent = <g.delegateName()>};>
}
}

<if(grammar.delegates)>
public override void SetState(RecognizerSharedState state)
{
base.SetState(state);
<grammar.delegates:{g|<g.delegateName()>.SetState(state);}; separator="\n">
}
<endif>

<endif>
<if(filterMode)>
<filteringNextToken()>
<endif>

partial void OnCreated();
partial void EnterRule(string ruleName, int ruleIndex);
partial void LeaveRule(string ruleName, int ruleIndex);

<rules; separator="\n">

<insertLexerSynpreds(synpreds)>

#region DFA
<cyclicDFAs:{dfa | DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>}; separator="\n">

protected override void InitDFAs()
{
base.InitDFAs();
<cyclicDFAs:{dfa | dfa<dfa.decisionNumber>
= new DFA<dfa.decisionNumber>(this<if(dfa.specialStateSTs)>,
SpecialStateTransition<dfa.decisionNumber><endif>);}; separator="\n">
}

```

```

<cyclicDFAs:cyclicDFA()><! dump tables for all DFA !>
#endregion

}
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
public override IToken NextToken()
{
while (true)
{
if (input.LA(1) == CharStreamConstants.EndOfFile)
{
IToken eof = new CommonToken((ICharStream)input, CharStreamConstants.EndOfFile, TokenChannels.Default,
input.Index, input.Index);
eof.Line = Line;
eof.CharPositionInLine = CharPositionInLine;
return eof;
}
state.token = null;
state.channel = TokenChannels.Default;
state.tokenStartCharIndex
= input.Index;
state.tokenStartCharPositionInLine = input.CharPositionInLine;
state.tokenStartLine = input.Line;
state.text = null;
try
{
int m = input.Mark();
state.backtracking=1;<! means we won't throw slow exception !>
state.failed=false;
mTokens();
state.backtracking=0;
<! mTokens backtracks with synpred at backtracking==2
and we set the synpredgate to allow actions at level 1. !>
if (state.failed)
{
input.Rewind(m);
input.Consume();<! advance one char and try again !>
}
else
{

```

```

    Emit();
    return state.token;
}
}
catch (RecognitionException re)
{
    // shouldn't happen in backtracking mode, but...
    ReportError(re);
    Recover(re);
}
}
}

public override void Memoize(IIntStream input, int ruleIndex, int ruleStartIndex)
{
    if (state.backtracking > 1)
        base.Memoize(input, ruleIndex, ruleStartIndex);
}

public override bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
    if (state.backtracking > 1)
        return
            base.AlreadyParsedRule(input, ruleIndex);

    return false;
}
>>

actionGate() ::= "state.backtracking == 0"

filteringActionGate() ::= "state.backtracking == 1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
    bitsets, inputStreamType, superClass,
    labelType, members, rewriteElementType,
    filterMode, ASTLabelType="object") ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<ANTLRVersion>")]
[System.CLSCompliant(false)]
<parserModifier(grammar=grammar, actions=actions)> partial class <grammar.recognizerName> :
<@superClassName><superClass><@end>
{
<if(grammar.grammarIsRoot)>
    internal static readonly string[] tokenNames = new string[] {
        "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
    };
<endif>

```

```
<tokens:{it|public const int <it.name; format="id">=<it.type>;}; separator="\n">
```

```
<if(grammar.delegates)>
```

```
// delegates
```

```
<grammar.delegates:
```

```
{g|private <g.recognizerName>
```

```
<g:delegateName()>;}; separator="\n">
```

```
<endif>
```

```
<if(grammar.delegators)>
```

```
// delegators
```

```
<grammar.delegators:
```

```
{g|private <g.recognizerName> <g:delegateName()>;}; separator="\n">
```

```
<last(grammar.delegators):{g|private <g.recognizerName> gParent;}>
```

```
<endif>
```

```
<if(grammar.delegates)>
```

```
public override void SetState(RecognizerSharedState state)
```

```
{
```

```
base.SetState(state);
```

```
<grammar.delegates:{g|<g:delegateName()>.SetState(state);}; separator="\n">
```

```
}
```

```
<if(TREE_PARSER)>
```

```
public override void SetTreeNodeStream(ITreeNodeStream input)
```

```
{
```

```
base.SetTreeNodeStream(input);
```

```
<grammar.delegates:{g|<g:delegateName()>.SetTreeNodeStream(input);}; separator="\n">
```

```
}
```

```
<endif>
```

```
<endif>
```

```
<scopes:{it|<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
```

```
<@members()>
```

```
public override string[] TokenNames { get { return
```

```
<grammar.composite.rootGrammar.recognizerName>.tokenNames; } }
```

```
public override string GrammarFileName { get { return "<fileName>"; } }
```

```
<members>
```

```
partial void
```

```
OnCreated();
```

```
partial void EnterRule(string ruleName, int ruleIndex);
```

```
partial void LeaveRule(string ruleName, int ruleIndex);
```

```
#region Rules
```

```
<rules; separator="\n">
```

```
#endregion Rules
```

```

<if(grammar.delegatedRules)>
<! generate rule/method definitions for imported rules so they
  appear to be defined in this recognizer. !>
#region Delegated rules
<grammar.delegatedRules:{ruleDescriptor|
  <ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> <return Type(ruleDescriptor)>
  <ruleDescriptor.name; format="id"><ruleDescriptor.parameterScope:parameterScope()><!throws
  RecognitionException !>{ <if(ruleDescriptor.hasReturnValue)>return
  <endif><ruleDescriptor.grammar.delegateName()>.<ruleDescriptor.name;
  format="id"><ruleDescriptor.parameterScope><ruleDescriptor.parameterScope.attributes:{a|<a.name;
  format="id">}; separator=", "><endif>}; \}}; separator="\n">
#endregion Delegated rules
<endif>

<insertSynpreds(synpreds)>

<if(cyclicDFAs)>
#region DFA
<cyclicDFAs:{ dfa | private
  DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">

protected override void InitDFAs()
{
  base.InitDFAs();
  <cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = new DFA<dfa.decisionNumber>( this<if(dfa.specialStateSTs)>,
  SpecialStateTransition<dfa.decisionNumber><endif> );}; separator="\n">
}

<cyclicDFAs:cyclicDFA()><! dump tables for all DFA !>
#endregion DFA
<endif>

<if(bitsets)>
#region Follow sets
private static class Follow
{
  <bitsets:{it|bitset(name={_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>}; separator="\n">
}
#endregion Follow sets
<endif>
}
>>

@genericParser.members() ::= <<
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName><(<inputStreamType>
input<grammar.delegators:{g|, <g.recognizerName> <g.delegateName()>}>>)

```



```

: this(input, new RecognizerSharedState(<grammar.delegators:{ g|, <g:delegateName()>}>))
{
}
<actions.(actionScope).ctorModifier; null="public">
<grammar.recognizerName>(<inputStreamType> input, RecognizerSharedState state<grammar.delegators:{ g|,
<g.recognizerName> <g:delegateName()>}>))
: base(input, state)
{
<if(grammar.directDelegates)>
<grammar.directDelegates:
{ g|<g:delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{ p|, <p:delegateName()>}>,
this);}; separator="\n">
<endif>
<if(grammar.indirectDelegates)>
<grammar.indirectDelegates:{ g | <g:delegateName()> = <g.delegate:delegateName()>.<g:delegateName()>};
separator="\n">
<endif>
<if(grammar.delegators)>
<last(grammar.delegators):{ g|gParent = <g:delegateName()>};>
<endif>
<parserCtorBody()>
OnCreated();
}
>>

// imported grammars are 'public' (can't be internal because their return scope classes must be accessible)
parserModifier(grammar, actions) ::= <<
<if(grammar.grammarIsRoot)><actions.(actionScope).modifier; null="public"><else>public<endif>
>>

parserCtorBody() ::= <<
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo
= new System.Collections.Generic.Dictionary<int, int>[<length(grammar.allImportedRules)>+1];<\n><! index
from 1..n !>
<endif>
<endif>
<grammar.delegators:
{ g|this.<g:delegateName()> = <g:delegateName()>}; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
ASTLabelType="object",
superClass={ <if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else>Antlr.Runtime.Parser
<endif>}, labelType="IToken",
members={ <actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ITokenStream", rewriteElementType="IToken", filterMode=false, ...)>

```

```

>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
    numRules, bitsets, filterMode, labelType={ <ASTLabelType> }, ASTLabelType="object",
    superClass={ <if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else>Antlr.Runtime.Tree.<
if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif><endif> },
    members={ <actions.treeparser.members> }) ::= <<
<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<

partial void EnterRule_<ruleName>_fragment();
partial void LeaveRule_<ruleName>_fragment();

// $ANTLR start <ruleName>
<ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> void
<ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(>))
{
    <ruleLabelDefs(...)>
    EnterRule_<ruleName>_fragment();
    EnterRule("<ruleName>_fragment",
    <ruleDescriptor.index>);
    TraceIn("<ruleName>_fragment", <ruleDescriptor.index>);
    try
    {
        <block>
    }
    finally
    {
        TraceOut("<ruleName>_fragment", <ruleDescriptor.index>);
        LeaveRule("<ruleName>_fragment", <ruleDescriptor.index>);
        LeaveRule_<ruleName>_fragment();
    }
}
// $ANTLR end <ruleName>
>>

```

```

insertLexerSynpreds(synpreds) ::= <<
<insertSynpreds(synpreds)>
>>

```

```

insertSynpreds(synpreds) ::= <<
<if(synpreds)>
#region Synpreds
private bool EvaluatePredicate(System.Action fragment)
{
    bool success = false;
    state.backtracking++;
    <@start(>
    try { DebugBeginBacktrack(state.backtracking);
    int start = input.Mark();
    try
    {
        fragment();
    }
    catch ( RecognitionException re )
    {
        System.Console.Error.WriteLine("impossible: "+re);
    }
    success = !state.failed;
    input.Rewind(start);
    } finally { DebugEndBacktrack(state.backtracking, success); }
    <@stop(>
    state.backtracking--;
    state.failed=false;
    return
    success;
}
#endregion Synpreds
<endif>
>>

```

```

ruleMemoization(name) ::= <<
<if(memoize)>
if (state.backtracking > 0 && AlreadyParsedRule(input, <ruleDescriptor.index>)) { <returnFromRule(> }
<endif>
>>

```

```

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (state.failed) <returnFromRule(><endif>
>>

```

```

/** This rule has failed, exit indicating failure during backtrack */

```

```

ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking>0) {state.failed=true; <returnFromRule(>><endif>
>>

ruleWrapperMap ::= [
"bottomup":{<ruleWrapperBottomup(>>},
"topdown":{<ruleWrapperTopdown(>>},
default:""
]

ruleWrapperBottomup() ::= <<
<if(TREE_PARSER && filterMode)>
protected override <if(buildAST)>IAstRuleReturnScope<else>void<endif> Bottomup() { <if(buildAST)>return
<endif>bottomup(); }
<endif>
>>

ruleWrapperTopdown() ::= <<
<if(TREE_PARSER && filterMode)>
protected override <if(buildAST)>IAstRuleReturnScope<else>void<endif>
Topdown() { <if(buildAST)>return <endif>topdown(); }
<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(ruleDescriptor.returnScope)>
partial void EnterRule_<ruleName>();
partial void LeaveRule_<ruleName>();
<ruleWrapperMap.(ruleName)>
// $ANTLR start "<ruleName>"
// <fileName>:<description>
[GrammarRule("<ruleName>")]
<ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> <returnType(ruleDescriptor)> <ruleName;
format="id">(<ruleDescriptor.parameterScope:parameterScope(>>)
{
EnterRule_<ruleName>();
EnterRule("<ruleName>", <ruleDescriptor.index>);
TraceIn("<ruleName>", <ruleDescriptor.index>);
<ruleScopeSetUp(>
<ruleDeclarations(>
<ruleLabelDefs(...)>
<ruleDescriptor.actions.init>
try { DebugEnterRule(GrammarFileName, "<ruleName>");
DebugLocation(<ruleDescriptor.tree.line>,

```

```

<ruleDescriptor.EORNode.charPositionInLine>;
<@preamble()>
try
{
  <ruleMemoization(name=ruleName)>
  <block>
  <ruleCleanUp()>
  <(ruleDescriptor.actions.after):execAction()>
}
<if(exceptions)>
  <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
  <actions.(actionScope).rulecatch>
<else>
  catch (RecognitionException re)
  {
    ReportError(re);
    Recover(input,re);
    <@setErrorReturnValue()>
  }
<endif>
<endif>
<endif>
  finally
  {
    TraceOut("<ruleName>", <ruleDescriptor.index>);
    LeaveRule("<ruleName>", <ruleDescriptor.index>);
    LeaveRule_<ruleName>();
    <memoize()>
    <ruleScopeCleanUp()>
    <finally>
  }
  DebugLocation(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.charPositionInLine>);
} finally { DebugExitRule(GrammarFileName, "<ruleName>"); }
<@postamble()>
<returnFromRule()><\n>
}
// $ANTLR end "<ruleName>"
>>

// imported grammars need to have internal
rules
ruleModifier(grammar,ruleDescriptor) ::= <<
<if(grammar.grammarIsRoot)><csharp VisibilityMap.(ruleDescriptor.modifier);
null="private"><else>internal<endif>
>>

```

```

// imported grammars need to have public return scopes
returnScopeModifier(grammar,ruleDescriptor) ::= <<
<if(grammar.grammarIsRoot)><csharpVisibilityMap.(ruleDescriptor.modifier);
null="private"><else>public<endif>
>>

catch(decl,action) ::= <<
catch (<e.decl>)
{
<e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType(ruleDescriptor)> retval = new
<returnType(ruleDescriptor)><(if(ruleDescriptor.returnScope.attributes)>this<endif>);
retval.Start = (<labelType>)input.LT(1);
<elseif(ruleDescriptor.returnScope)>
<ruleDescriptor.returnScope.attributes:{ a |
<a.type> <a.name; format="id"> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.Index;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{ it|<it>_stack.Push(new
<it>_scope(this);<it>_scopeInit(<it>_stack.Peek());}; separator="\n">
<ruleDescriptor.ruleScope:{ it|<it.name>_stack.Push(new
<it.name>_scope(this);<it.name>_scopeInit(<it.name>_stack.Peek());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{ it|<it>_scopeAfter(<it>_stack.Peek());<it>_stack.Pop();}; separator="\n">
<ruleDescriptor.ruleScope:{ it|<it.name>_scopeAfter(<it.name>_stack.Peek());<it.name>_stack.Pop();};
separator="\n">
>>

ruleLabelDefs(ruleDescriptor, labelType, ASTLabelType, rewriteElementType) ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wil
dcardTreeListLabels]
:{ it|<labelType> <it.label.text> = default(<labelType>);}; separator="\n"
>
<ruleDescriptor.tokenListLabels

```

```

: {it|List\<<labelType>> list_<it.label.text> = null;}; separator="\n"
>
<[ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: {it|List\<<ASTLabelType>> list_<it.label.text>
= null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
<ruleDescriptor.ruleListLabels:ruleLabelDef(); separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it|<labelType> <it.label.text> = default(<labelType>);}; separator="\n"
>
<[ruleDescriptor.charListLabels,
ruleDescriptor.charLabels]
: {it|int <it.label.text> = 0;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {it|List\<<labelType>> list_<it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.charListLabels: {it|List\<int> list_<it.label.text> = null;}; separator="\n"
>
>>

returnFromRule() ::= <%
return
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<! This comment is a hack to make sure the following
single space appears in the output. !> <ruleDescriptor.singleValueReturnName>
<else>
<!!>
retval
<endif>
<endif>
<endif>
<endif>
;
%>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.Stop = (<labelType>)input.LT(-1);

```

```

<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking > 0) { Memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<

partial void EnterRule_<ruleName>();
partial void LeaveRule_<ruleName>();

// $ANTLR start "<ruleName>"
[GrammarRule("<ruleName>")]
<ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> void
m<ruleName>(<ruleDescriptor.parameterScope:parameterScope()>)
{
EnterRule_<ruleName>();
EnterRule("<ruleName>", <ruleDescriptor.index>);
TraceIn("<ruleName>", <ruleDescriptor.index>);
<ruleScopeSetUp()>
<ruleDeclarations()>
try
{
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<else>
int
_type = <ruleName>;
int _channel = DefaultTokenChannel;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<ruleCleanUp()>
state.type = _type;
state.channel = _channel;

```



```

    <(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally
{
    TraceOut("<ruleName>", <ruleDescriptor.index>);
    LeaveRule("<ruleName>", <ruleDescriptor.index>);
    LeaveRule_<ruleName>();
    <ruleScopeCleanUp()>
    <memoize()>
}
}
// $ANTLR end "<ruleName>"
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<

public override void mTokens()
{
    <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
//
    <fileName>:<description>
    int alt<decisionNumber>=<maxAlt>;
    <decls>
    <@predecision()>
    try { DebugEnterSubRule(<decisionNumber>);
    try { DebugEnterDecision(<decisionNumber>, false<!<decision.dfa.hasSynPred>!>);
    <decision>
    } finally { DebugExitDecision(<decisionNumber>); }
    <@postdecision()>
    <@prebranch()>
    switch (alt<decisionNumber>)
    {
    <alts:{a|altSwitchCase(i,a)}>
    }
    } finally { DebugExitSubRule(<decisionNumber>); }
    <@postbranch()>
>>

```

```

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
try { DebugEnterDecision(<decisionNumber>, false<!<decision.dfa.hasSynPred>!>);
<decision>
} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:{a|altSwitchCase(i,a)}>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description)
::= <<
// <fileName>:<description>
<decls>
<@prealt()>
DebugEnterAlt(1);
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
DebugEnterAlt(1);
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int cnt<decisionNumber>=0;
<decls>
<@preloop()>
try { DebugEnterSubRule(<decisionNumber>);
while (true)
{
int alt<decisionNumber>=<maxAlt>;

```

```

<@predecision(>
try { DebugEnterDecision(<decisionNumber>, false<!<decision.dfa.hasSynPred>!>);
<decision>
} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision(>
switch (alt<decisionNumber>)
{
<alts:{a|<altSwitchCase(i,a)>}>
default:
if (cnt<decisionNumber> >= 1)
goto loop<decisionNumber>;

<ruleBacktrackFailure(>
EarlyExitException
eee<decisionNumber> = new EarlyExitException( <decisionNumber>, input );
DebugRecognitionException(eee<decisionNumber>);
<@earlyExitException(>
throw eee<decisionNumber>;
}
cnt<decisionNumber>++;
}
loop<decisionNumber>:
;

} finally { DebugExitSubRule(<decisionNumber>); }
<@postloop(>
>>

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// <fileName>:<description>
<decls>
<@preloop(>
try { DebugEnterSubRule(<decisionNumber>);
while (true)
{
int alt<decisionNumber>=<maxAlt>;
<@predecision(>
try { DebugEnterDecision(<decisionNumber>, false<!<decision.dfa.hasSynPred>!>);
<decision>
} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision(>
switch ( alt<decisionNumber> )
{
<alts:{a|<altSwitchCase(i,a)>}>

```

```

default:
  goto loop<decisionNumber>;
}
}

loop<decisionNumber>:
;

}
finally { DebugExitSubRule(<decisionNumber>); }
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum,alt) ::= <<
case <altNum>:
  <@prealt()>
  DebugEnterAlt(<altNum>);
  <alt>
  break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
  <@declarations()>
  <elements:element()>
  <rew>
  <@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */

```

```

noRewrite(rewriteBlockLevel,
treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(it) ::= <%
<@prematch()>
DebugLocation(<it.line>, <it.pos>);<\n>
<it.el><\n>
%>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
<if(label)><label>=(<labelType>)<endif>Match(input,<token>,Follow._<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

listLabel(label,elem) ::= <<
#error The listLabel template should not be used with this target.<\n>
>>

listLabelElem(label,elem,elemType) ::= <<
if (list_<label>==null) list_<label>=new List\<<elemType; null={ <labelType> }>\>();
list_<label>.Add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
Match(<char>); <checkRuleBacktrackFailure()>
>>

/**
match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchRange(<a>,<b>); <checkRuleBacktrackFailure()>

```

```

>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="",terminalOptions={}) ::= <<
<if(label)>
<matchSetLabel()>
<endif>
if (<s>)
{
input.Consume();
<postmatchCode>
<if(!LEXER)>state.errorRecovery=false;<endif><if(backtracking)>state.failed=false;<endif>
}
else
{
<ruleBacktrackFailure()>
MismatchedSetException mse = new MismatchedSetException(null,input);
DebugRecognitionException(mse);
<@mismatchedSetException()>
<if(LEXER)>
Recover(mse);
throw mse;
<else>
throw mse;
<! use following code to make it recover inline; remove throw mse;
recoverFromMismatchedSet(input,mse,Follow._set_in_<ruleName><elementIndex>);
!>
<endif>
}<\n>
>>

```

```

matchSetUnchecked(s,label,elementIndex,postmatchCode=false) ::= <%
<if(label)>
<matchSetLabel()><\n>
<endif>
input.Consume();<\n>
<if(postmatchCode)>
<postmatchCode><\n>
<endif>
<if(!LEXER)>state.errorRecovery=false;<endif><if(backtracking)>state.failed=false;<endif>
%>

```

```

matchSetLabel()
::= <%
<if(LEXER)>
<label>= input.LA(1);
<else>
<label>=(<labelType>)input.LT(1);

```

```

<endif>
%>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match a string literal */
lexerStringRef(string,label,elementIndex) ::= <%
<if(label)>
int <label>Start = CharIndex;<\n>
Match(<string>); <checkRuleBacktrackFailure()><\n>
int <label>StartLine<elementIndex> = Line;<\n>
int <label>StartCharPos<elementIndex> = CharPositionInLine;<\n>
<label> = new <labelType>(input, TokenTypes.Invalid, TokenChannels.Default, <label>Start, CharIndex-1);<\n>
<label>.Line = <label>StartLine<elementIndex>;<\n>
<label>.CharPositionInLine = <label>StartCharPos<elementIndex>;
<else>
Match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
%>

wildcard(token,label,elementIndex,terminalOptions={ })
::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<wildcard(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>

```

```

<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(Follow._<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope.delegateName()>.<endif><rule.name>;
format="id"><args; separator=" ">;
PopFollow();
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelElem(elem=label,elemType={<ASTLabelType>},...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <%
<if(label)>
int <label>Start<elementIndex> = CharIndex;<\n>
int <label>StartLine<elementIndex> = Line;<\n>
int <label>StartCharPos<elementIndex> = CharPositionInLine;<\n>
<if(scope)><scope.delegateName()>.<endif>m<rule.name><args; separator=" ">;
<checkRuleBacktrackFailure()><\n>
<label> = new <labelType>(input, TokenTypes.Invalid, TokenChannels.Default, <label>Start<elementIndex>,
CharIndex-1);<\n>
<label>.Line
= <label>StartLine<elementIndex>;<\n>
<label>.CharPositionInLine = <label>StartCharPos<elementIndex>;
<else>
<if(scope)><scope.delegateName()>.<endif>m<rule.name><args; separator=" ">;
<checkRuleBacktrackFailure()>
<endif>
%>

/** i+=INT in lexer */

```



```

lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <%
<if(label)>
int <label>Start<elementIndex> = CharIndex;<\n>
int <label>StartLine<elementIndex> = Line;<\n>
int <label>StartCharPos<elementIndex> = CharPositionInLine;<\n>
Match(EOF); <checkRuleBacktrackFailure()><\n>
<labelType> <label> = new <labelType>(input, EOF, TokenChannels.Default, <label>Start<elementIndex>,
CharIndex-1);<\n>
<label>.Line = <label>StartLine<elementIndex>;<\n>
<label>.CharPositionInLine = <label>StartCharPos<elementIndex>;
<else>
Match(EOF); <checkRuleBacktrackFailure()>
<endif>
%>

// used for left-recursive
rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction() ::= "root_0=$<ruleName>_primary.tree;"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1) == TokenType.Down)
{
Match(input, TokenType.Down, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenType.Up, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, TokenType.Down, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenType.Up, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is

```

```

* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description)
 ::= <<
if (!(<evalPredicate(...>))
{
<ruleBacktrackFailure()>
throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<k> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
else
{
<if(eotPredictsAlt)>
alt<decisionNumber> = <eotPredictsAlt>;
<else>
<ruleBacktrackFailure()>
NoViableAltException nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>,
input, <k>);
DebugRecognitionException(nvae);
<@noViableAltException()>
throw nvae;
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
* for the bypass alternative. It delays error detection but this
* is faster, smaller, and more what people expect. For (X)? people
* expect "if ( LA(1)==X ) match(X);" and that's it.
*/
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)
 ::= <<
int LA<decisionNumber>_<k> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
* loop. If end-of-token (EOT) predicts any of the targets then it
* should act like a default clause (i.e., no error can be generated).
* This is used only in the lexer so that for ('a')* on the end of a rule
* anything other than 'a' predicts exiting.
*/

```

```

dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<k> = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber> = <eotPredictsAlt>;<! if no edges, don't gen ELSE !>
<else>
else
{
alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>";

/** A simple edge with an expression. If the expression is satisfied,
* enter
to the target state. To handle gated productions, we may
* have to evaluate some predicates for this edge.
*/
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr><if(predicates)> && (<predicates>)<endif>
{
<targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
* decides if this is possible: CodeGenerator.canGenerateSwitch().
*/
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
alt<decisionNumber>=<eotPredictsAlt>;
break;<\n>
<else>
{
<ruleBacktrackFailure()>
NoViableAltException nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>,
input, <k>);

```

```

    DebugRecognitionException(nvae);
    <@noViableAltException()>
    throw nvae;
}
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges;
separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
<if(eotPredictsAlt)>
default:
alt<decisionNumber>=<eotPredictsAlt>;
break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels: {it|case <it>:}; separator="\n">
{
<targetState>
}
break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
try
{
alt<decisionNumber> = dfa<decisionNumber>.Predict(input);
}
catch (NoViableAltException nvae)

```

```

{
    DebugRecognitionException(nvae);
    throw;
}
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
* Can't use hex as compiler translates them before compilation.
* These strings are split into multiple, concatenated
strings.
* Java puts them back together at compile time thankfully.
* Java cannot handle large static arrays, so we're stuck with this
* encode/decode approach. See analysis and runtime DFA for
* the encoding methods.
*/
cyclicDFA(dfa) ::= <<
private class DFA<dfa.decisionNumber> : DFA
{
    private const string DFA<dfa.decisionNumber>_eotS =
        "<dfa.javaCompressedEOT; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_eofS =
        "<dfa.javaCompressedEOF; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_minS =
        "<dfa.javaCompressedMin; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_maxS =
        "<dfa.javaCompressedMax; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_acceptS =
        "<dfa.javaCompressedAccept; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_specialS =
        "<dfa.javaCompressedSpecial; wrap=\""+\n\t\t\">>";
    private static readonly string[] DFA<dfa.decisionNumber>_transitionS
    =
    {
        <dfa.javaCompressedTransition:{s|\"<s; wrap=\""+\n\t\t\">"; separator=\",\n\t\t\">
    };

    private static readonly short[] DFA<dfa.decisionNumber>_eot =
    DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eotS);
    private static readonly short[] DFA<dfa.decisionNumber>_eof =
    DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eofS);
    private static readonly char[] DFA<dfa.decisionNumber>_min =
    DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
    private static readonly char[] DFA<dfa.decisionNumber>_max =
    DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
    private static readonly short[] DFA<dfa.decisionNumber>_accept =
    DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
    private static readonly short[] DFA<dfa.decisionNumber>_special =
    DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_specialS);

```

```

private static readonly short[][] DFA<dfa.decisionNumber>_transition;

static DFA<dfa.decisionNumber>()
{
    int numStates = DFA<dfa.decisionNumber>_transitionS.Length;
    DFA<dfa.decisionNumber>_transition
= new short[numStates][];
    for ( int i=0; i < numStates; i++ )
    {
        DFA<dfa.decisionNumber>_transition[i] =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_transitionS[i]);
    }
}

public DFA<dfa.decisionNumber>( BaseRecognizer recognizer<if(dfa.specialStateSTs)>,
SpecialStateTransitionHandler specialStateTransition<endif> )
<if(dfa.specialStateSTs)>
    : base(specialStateTransition)
<endif>
{
    this.recognizer = recognizer;
    this.decisionNumber = <dfa.decisionNumber>;
    this.eot = DFA<dfa.decisionNumber>_eot;
    this.eof = DFA<dfa.decisionNumber>_eof;
    this.min = DFA<dfa.decisionNumber>_min;
    this.max = DFA<dfa.decisionNumber>_max;
    this.accept = DFA<dfa.decisionNumber>_accept;
    this.special = DFA<dfa.decisionNumber>_special;
    this.transition = DFA<dfa.decisionNumber>_transition;
}

public override string Description { get { return "<dfa.description>"; } }

public override void Error(NoViableAltException nvae)
{
    DebugRecognitionException(nvae);
}
}<\n>
<if(dfa.specialStateSTs)>
private
int SpecialStateTransition<dfa.decisionNumber>(DFA dfa, int s, IIntStream _input)<! throws
NoViableAltException!>
{
    <if(LEXER)>
    IIntStream input = _input;
    <endif>
    <if(PARSER)>
    ITokenStream input = (ITokenStream)_input;

```

```

<endif>
<if(TREE_PARSER)>
ITreeNodeStream input = (ITreeNodeStream)_input;
<endif>
int _s = s;
s = -1;
<! pull these outside the switch cases to save space on locals !>
int LA<dfa.decisionNumber>_1 = input.LA(1);
int index<dfa.decisionNumber>_1 = input.Index;
switch (_s)
{
<dfa.specialStateSTs: {state |case <i0>:<! compressed special state numbers 0..n-1 !>
<state>}; separator="\n">

default:
break;
}

if (s >= 0)
return s;

<if(backtracking)>
if (state.backtracking > 0) {state.failed=true; return -1;}
<endif>
NoViableAltException nvae = new NoViableAltException(dfa.Description, <dfa.decisionNumber>, _s, input);
dfa.Error(nvae);
throw nvae;
}
<endif>
>>

/** A state in a cyclic
DFA; it's a special state and part of a big switch on
* state.
*/
cyclicDFASState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
{
<if(semPredState)>
<! get next lookahead symbol to test edges, then rewind !>
input.Rewind();
<endif>
<edges; separator="\nelse ">
<if(semPredState)>
<! return input cursor to state before we rewound !>
input.Seek(index<decisionNumber>_1);
<endif>
break;
}

```

```

>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr><if(predicates)> && (<predicates><endif>)) {s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands)
::= "<operands; separator=\\|\\>"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "EvaluatePredicate(<pred>_fragment)"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<k>===<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)===<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
(LA<decisionNumber>_<k><ge()><lower> && LA<decisionNumber>_<k><le()><upper>)
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::=
"(input.LA(<k>)<ge()><lower> && input.LA(<k>)<le()><upper>)"

le() ::= "\<="
ge() ::= ">="

setTest(ranges) ::= <<

```



```
<ranges; separator="||">
```

```
>>
```

```
// A T T R I B U T E S
```

```
attributeScope(scope) ::= <<
```

```
<if(scope)>
```

```
<if(scope.attributes)>
```

```
protected sealed partial class
```

```
<scope.name>_scope
```

```
{
```

```
<scope.attributes:{it|public <it.decl>;}; separator="\n">
```

```
public <scope.name>_scope(<grammar.recognizerName> grammar) { OnCreated(grammar); }
```

```
partial void OnCreated(<grammar.recognizerName> grammar);
```

```
}
```

```
<if(scope.actions.scopeinit)>
```

```
protected void <scope.name>_scopeInit( <scope.name>_scope scope )
```

```
{
```

```
<scope.actions.scopeinit>
```

```
}
```

```
<else>
```

```
partial void <scope.name>_scopeInit( <scope.name>_scope scope );
```

```
<endif>
```

```
<if(scope.actions.scopeafter)>
```

```
protected void <scope.name>_scopeAfter( <scope.name>_scope scope )
```

```
{
```

```
<scope.actions.scopeafter>
```

```
}
```

```
<else>
```

```
partial void <scope.name>_scopeAfter( <scope.name>_scope scope );
```

```
<endif>
```

```
protected readonly ListStack<<scope.name>_scope> <scope.name>_stack = new
```

```
ListStack<<scope.name>_scope>();
```

```
<endif>
```

```
<endif>
```

```
>>
```

```
globalAttributeScope(scope) ::= <<
```

```
<attributeScope(...)>
```

```
>>
```

```
ruleAttributeScope(scope) ::= <<
```

```
<attributeScope(...)>
```

```
>>
```

```
returnStructName(it) ::= "<it.name>_return"
```

```

returnType(ruleDescriptor) ::= <%
<if(ruleDescriptor.returnScope.attributes
&& ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<elseif(ruleDescriptor.hasMultipleReturnValues)>
<ruleReturnBaseType()>
<elseif(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
%>

```

```

/** Generate the C# type associated with a single or multiple return
* values.
*/

```

```

ruleLabelType(referencedRule) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
<ruleReturnBaseType()>
<elseif(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
%>

```

```

delegateName(it) ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

```

```

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/

```

```

initValue(typeName) ::= <<
default(<typeName>)
>>

```

```

/** Define a rule label including default value */
ruleLabelDef(label) ::= <%
<ruleLabelType(label.referencedRule)> <label.label.text>
= <initValue(ruleLabelType(label.referencedRule))>;
%>

```

```

/** Define a return struct for a rule if the code needs to access its
* start/stop tokens, tree stuff, attributes, ... Leave a hole for
* subgroups to stick in members.
*/

```

```

returnScope(scope) ::= <<

```

```

<if(scope.attributes && ruleDescriptor.hasMultipleReturnValues)>
<returnScopeModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> sealed partial class
<ruleDescriptor:returnStructName()> : <ruleReturnBaseType()><@ruleReturnInterfaces()>
{
  <scope.attributes:{it|public <it.decl>;}; separator="\n">
  <@ruleReturnMembers()>
}
<endif>
>>

ruleReturnBaseType() ::= <%
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope\<<labelType>>
%>

@returnScope.ruleReturnMembers() ::= <<
public <ruleDescriptor:returnStructName()>( <grammar.recognizerName> grammar) { OnCreated(grammar);}
partial void OnCreated(<grammar.recognizerName> grammar);
>>

parameterScope(scope) ::= <<
<scope.attributes:{it|<it.decl>}; separator="," >
>>

parameterAttributeRef(attr)
::= <<
<attr.name; format="id">
>>

parameterSetAttributeRef(attr,expr) ::= <<
<attr.name; format="id"> =<expr>;
>>

scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack[<scope>_stack.Count - <negIndex> - 1].<attr.name; format="id">
<else>
<if(index)>
<scope>_stack[<index>].<attr.name; format="id">
<else>
<scope>_stack.Peek().<attr.name; format="id">
<endif>
<endif>
%>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack[<scope>_stack.Count - <negIndex> - 1].<attr.name; format="id"> = <expr>;
<else>

```

```

<if(index)>
<scope>_stack[<index>].<attr.name; format="id"> = <expr>;
<else>
<scope>_stack.Peek().<attr.name; format="id"> = <expr>;
<endif>
<endif>
%>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.Count>0 && $function::name.Equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/**
 reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?(<<returnType(referencedRule)>><scope>).<attr.name; format="id">:<initValue(attr.type)>)
<else>
<scope>
<endif>
%>

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name; format="id">
<else>
<attr.name; format="id">
<endif>
%>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name; format="id"> =<expr>;
<else>
<attr.name; format="id"> =<expr>;
<endif>
%>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

```

```

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>!=null?<scope>.Text.default(string)"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>!=null?<scope>.Type:0)"
tokenLabelPropertyRef_line(scope,attr)
 ::= "<scope>!=null?<scope>.Line:0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>!=null?<scope>.CharPositionInLine:0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>!=null?<scope>.Channel:0)"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>!=null?<scope>.TokenIndex:0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>!=null?int.Parse(<scope>.Text):0)"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>!=null?(<labelType><scope>.Start):default(<labelType>)"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>!=null?(<labelType><scope>.Stop):default(<labelType>)"
ruleLabelPropertyRef_tree(scope,attr) ::=
 "<scope>!=null?(<ASTLabelType><scope>.Tree):default(<ASTLabelType>)"
ruleLabelPropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
(<scope>!=null?(input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(<scope>.Start),
input.TreeAdaptor.GetTokenStopIndex(<scope>.Start))):default(string)
<else>
(<scope>!=null?input.ToString(<scope>.Start,<scope>.Stop):default(string)
<endif>
%>

ruleLabelPropertyRef_st(scope,attr)
 ::= "<scope>!=null?<scope>.Template:null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
 "<scope>!=null?<scope>.Type:0)"

lexerRuleLabelPropertyRef_line(scope,attr) ::=
 "<scope>!=null?<scope>.Line:0)"

lexerRuleLabelPropertyRef_pos(scope,attr) ::=
 "<scope>!=null?<scope>.CharPositionInLine:-1)"

lexerRuleLabelPropertyRef_channel(scope,attr) ::=
 "<scope>!=null?<scope>.Channel:0)"

lexerRuleLabelPropertyRef_index(scope,attr) ::=
 "<scope>!=null?<scope>.TokenIndex:0)"

lexerRuleLabelPropertyRef_text(scope,attr) ::=
 "<scope>!=null?<scope>.Text.default(string)"

```

```

lexerRuleLabelPropertyRef_int(scope,attr) ::=
    "<scope>!=null?int.Parse(<scope>.Text):0)"

// Somebody may ref
$template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.Start"
rulePropertyRef_stop(scope,attr) ::= "retval.Stop"
rulePropertyRef_tree(scope,attr) ::= "retval.Tree"
rulePropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
input.TokenStream.ToString(
    input.TreeAdaptor.GetTokenStartIndex(retval.Start),
    input.TreeAdaptor.GetTokenStopIndex(retval.Start))
<else>
input.ToString(retval.Start,input.LT(-1))
<endif>
%>
rulePropertyRef_st(scope,attr) ::= "retval.Template"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(CharIndex-1)"
lexerRulePropertyRef_int(scope,attr)
    ::= "int.Parse(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.Tree = <expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.Template =<expr>;"

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <%
<if(backtracking)>
if (<actions.(actionScope).synpredgate><\n>
{<\n>
<@indentedAction()><\n>
}
<else>
<action>
<endif>
%>

```

```

@execAction.indentedAction() ::= <<
  <action>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static readonly BitSet <name> = new BitSet(new ulong[] { <words64: {it|<it>UL}; separator=", "> });
>>

codeFileExtension() ::= ".cs"

true_value() ::= "true"
false_value() ::= "false"

Found in path(s):
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp3/CSharp3.stg
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```

```
*/
```

```
/** Template subgroup to add template rewrite output
```

```
* If debugging, then you'll also get STDbg.stg loaded.
```

```
*/
```

```
@outputFile.imports() ::= <<
```

```
<@super.imports(>
```

```
using Antlr.StringTemplate;
```

```
using Antlr.StringTemplate.Language;
```

```
<if(!backtracking)>
```

```
using Hashtable = System.Collections.Hashtable;
```

```
<endif>
```

```
>>
```

```
/** Add this
```

```
to each rule's return value struct */
```

```
@returnScope.ruleReturnMembers() ::= <<
```

```
private StringTemplate _st;
```

```
public StringTemplate Template { get { return _st; } set { _st = value; } }
```

```
public override string ToString() { return (Template==null) ? string.Empty : Template.ToString(); }
```

```
>>
```

```
@genericParser.members() ::= <<
```

```
<@super.members(>
```

```
protected StringTemplateGroup templateLib = new StringTemplateGroup("<name>Templates",
```

```
typeof(AngleBracketTemplateLexer) );
```

```
public StringTemplateGroup TemplateLib
```

```
{
```

```
get { return this.templateLib; }
```

```
set { this.templateLib = value; }
```

```
}
```

```
/// \<summary> Allows convenient multi-value initialization:
```

```
/// "new STAttrMap().Add(...).Add(...)"
```

```
/// \</summary>
```

```
protected class STAttrMap : Hashtable
```

```
{
```

```
public STAttrMap Add(string attrName, object value)
```

```
{
```

```
base.Add(attrName, value);
```

```
return this;
```



```

}
public STAttrMap Add(string attrName, int value)
{
    base.Add(attrName, value);
    return this;
}
}
>>

/** x+=rule when output=template */
ruleRefAndListLabel(rule,label,elementIndex,args,scope)
::= <<
<ruleRef(...)>
<listLabel(elem=label+".Template",...)>
>>

rewriteTemplate(alts) ::= <<

// TEMPLATE REWRITE
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> )
{
    <alts:rewriteTemplateAlt(); separator="else ">
    <if(rewriteMode)><replaceTextInLine()><endif>
}
<else>
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
<endif>
>>

replaceTextInLine() ::= <<
<if(TREE_PARSER)>
((TokenRewriteStream)input.TokenStream).Replace(
input.TreeAdaptor.GetTokenStartIndex(retval.Start),
input.TreeAdaptor.GetTokenStopIndex(retval.Start),
retval.Template);
<else>
((TokenRewriteStream)input).Replace(
((IToken)retval.Start).TokenIndex,
input.LT(-1).TokenIndex,
retval.Template);
<endif>
>>

rewriteTemplateAlt() ::= <<
// <it.description>
<if(it.pred)>

```

```

if (<it.pred>) {
    retval.Template = <it.alt>;
}<\n>
<else>
{
    retval.Template = <it.alt>;
}<\n>
<endif>
>>

```

```

rewriteEmptyTemplate(alts)
::= <<
null;
>>

```

```

/** Invoke a template with a set of attribute name/value pairs.
 * Set the value of the rule's template after having set
 * the attributes because the rule's template might be used as
 * an attribute to build a bigger template; you get a self-embedded
 * template.
 */

```

```

rewriteExternalTemplate(name,args) ::= <<
templateLib.GetInstanceOf("<name>"<if(args)>,
    new STAttrMap()<args:{a | .Add("<a.name>", <a.value>)}>
<endif>)
>>

```

```

/** expr is a string expression that says what template to load */
rewriteIndirectTemplate(expr,args) ::= <<
templateLib.GetInstanceOf(<expr>"<if(args)>,
    new STAttrMap()<args:{a | .Add("<a.name>", <a.value>)}>
<endif>)
>>

```

```

/** Invoke an inline template with a set of attribute name/value pairs */
rewriteInlineTemplate(args, template) ::= <<
new StringTemplate(templateLib, "<template>"<if(args)>,
    new STAttrMap()<args:{a | .Add("<a.name>", <a.value>)}>
<endif>)
>>

```

```

/** plain -> {foo} action */
rewriteAction(action) ::= <<
<action>
>>

```

```

/**

```

```
An action has %st.attrName=expr; or % {st}.attrName=expr; */
actionSetAttribute(st,attrName,expr) ::= <<
(<st>).SetAttribute("<attrName>",<expr>);
>>
```

```
/** Translate % {stringExpr} */
actionStringConstructor(stringExpr) ::= <<
new StringTemplate(templateLib,<stringExpr>)
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/CSharp2/ST.stg
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*/

/** Templates for building ASTs during tree parsing.
*

```

```

* Deal with many combinations. Dimensions are:
* Auto build or rewrite
* no label, label, list label (label/no-label handled together)
* child, root
* token, set, rule, wildcard
*
* Each combination has its own template except that label/no label
* is combined into tokenRef, ruleRef, ...
*/

```

```

/** Add a variable to track last element matched */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<if(!ruleDescriptor.isSynPred)>
<ASTLabelType> _first_0 = default(<ASTLabelType>);
<ASTLabelType> _last = default(<ASTLabelType>);
<endif>
>>

```

```

/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel=false, treeLevel=false) ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(rewriteMode)>
retval.Tree = (<ASTLabelType>)_first_0;
if (adaptor.GetParent(retval.Tree)!=null && adaptor.IsNil(adaptor.GetParent(retval.Tree)))
    retval.Tree = (<ASTLabelType>)adaptor.GetParent(retval.Tree);
<endif>
<if(backtracking)>}<endif>
<endif>
>>

```

```

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
    enclosingTreeLevel, treeLevel)
::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = default(<ASTLabelType>);
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.Nil();
<endif>

```

```

<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel> == null) _first_<enclosingTreeLevel> = <root.el.label>.Tree;
<else>
if (_first_<enclosingTreeLevel> == null) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1) == TokenTypes.Down) {
    Match(input, TokenTypes.Down, null); <checkRuleBacktrackFailure()>
    <children:element()>
    Match(input, TokenTypes.Up, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, TokenTypes.Down, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenTypes.Up, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.AddChild(root_<enclosingTreeLevel>,
    root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}
<else>
<super.tree(...)>
<endif>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<else>
<super.tokenRefBang(...)>
<endif>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<

```

```

<if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree = new
<terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text; format="string"><endif>);
<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
alOptions.text)>,<terminalOptions.text;
format="string"><endif>);
<endif><\n>
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel> == null) _first_<treeLevel> = <label>;
<endif>
<else>
<super.tokenRef(...)>
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
<tokenRef(...)>
<listLabelElem(elem=label,...)>
<else>
<super.tokenRefAndListLabel(...)>
<endif>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree
= new
<terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text; format="string"><endif>);

```

```

<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.text)>,<terminalOptions.text; format="string"><endif>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
<endif>
<else>
<super.tokenRefRuleRoot(...)>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
<tokenRefRuleRoot(...)>
<listLabelElem(elem=label,...)>
<else>
<super.tokenRefRuleRootAndListLabel(...)>
<endif>
>>

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if
(<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.DupTree(<label>);
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel> == null) _first_<treeLevel> = <label>;
<endif>
<else>
<super.wildcard(...)>
<endif>
>>

// SET AST

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);

```

```

<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree = new
<terminalOptions.node>( <if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text; format="string"><endif>);
<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
alOptions.text)>,<terminalOptions.text;
format="string"><endif>);
<endif><\n>
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}\}<endif>
<endif>
}, ...
)>
<else>
<super.matchSet(...)>
<endif>
>>

```

```

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<if(!ruleDescriptor.isSynPred)>
<matchSet(...)>
<noRewrite(...)> <! set return tree !>
<else>
<super.matchRuleBlockSet(...)>
<endif>
>>

```

```

matchSetBang(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(...)>
<else>
<super.matchSetBang(...)>
<endif>
>>

```

```

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
<if(!ruleDescriptor.isSynPred)>
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree = new

```



```

<terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text;
  format="string"><endif>);
<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
alOptions.text)>,<terminalOptions.text; format="string"><endif>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>\}<endif>
<endif>
}, ...
)>
<else>
<super.matchSetRuleRoot(...)>
<endif>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(!rewriteMode)>
  adaptor.AddChild(root_<treeLevel>, <label>.Tree);
<else> <! rewrite mode !>
  if (_first_<treeLevel> == null) _first_<treeLevel> = <label>.Tree;
<endif>
<else>
<super.ruleRef(...)>
<endif>
>>

/** x+=rule auto construct
*/
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<ruleRef(...)>
<listLabelElem(elem={<label>.Tree},...)>
<else>
<super.ruleRefAndListLabel(...)>
<endif>
>>

/** ^(rule ...) auto construct */

```

```

ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_<treeLevel> =
(<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_<treeLevel>);
<endif>
<else>
<super.ruleRefRuleRoot(...)>
<endif>
>>

```

```

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<ruleRefRuleRoot(...)>
<listLabelElem(elem={<label>.Tree},...)>
<else>
<super.ruleRefRuleRootAndListLabel(...)>
<endif>
>>

```

```

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last
= (<ASTLabelType>)input.LT(1);
<super.ruleRefTrack(...)>
<else>
<super.ruleRefTrack(...)>
<endif>
>>

```

```

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRefTrackAndListLabel(...)>
<else>
<super.ruleRefTrackAndListLabel(...)>
<endif>
>>

```

```

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);

```

```

<super.ruleRefRootTrack(...)>
<else>
<super.ruleRefRuleRootTrack(...)>
<endif>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRefRuleRootTrackAndListLabel(...)>
<else>
<super.ruleRefRuleRootTrackAndListLabel(...)>
<endif>
>>

/** Streams for token refs are tree nodes now;
override to
* change NextToken to NextNode.
*/
createRewriteNodeFromElement(token,terminalOptions,args) ::= <%
<if(terminalOptions.node)>
new
<terminalOptions.node><(if(terminalOptions.type)><terminalOptions.type>,<endif>stream_<token>.NextNode())
<else>
stream_<token>.NextNode()
<endif>
%>

ruleCleanup() ::= <<
<super.ruleCleanup()>
<if(!ruleDescriptor.isSynPred)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
retval.Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
<if(backtracking)>}<endif>
<endif>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp2/ASTTreeParser.stg

```

No license file was found, but licenses were detected in source scan.

```

/*

```

```

[The "BSD license"]

```

```

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```

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*/

group AST;

```
@outputFile.imports() ::= <<
<@super.imports()><if(!TREE_PARSER)><! tree parser would already have imported !>
Antlr.Runtime.Tree,<\n><endif>
>>
```

```
@genericParser.members() ::= <<
<@super.members()>
<parserMembers()>
>>
```

```
@genericParser.membersConstructor() ::= <<
<@super.membersConstructor()>
<parserMembersConstructor()>
>>
```

```
@genericParser.membersImplementation()
::= <<
<@super.membersImplementation()>
```

```

<parserMembersImplementation()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
strict protected
  FAdaptor: ITreeAdaptor;
  procedure SetAdaptor(const Value: ITreeAdaptor);
  property Adaptor: ITreeAdaptor read FAdaptor;
public
  property TreeAdaptor: ITreeAdaptor read FAdaptor write SetAdaptor;

>>

parserMembersConstructor() ::= <<
FAdaptor := TCommonTreeAdaptor.Create;
>>

parserMembersImplementation() ::= <<
procedure T<grammar.recognizerName>.SetAdaptor(const Value: ITreeAdaptor);
begin
  FAdaptor := Value;
  <grammar.directDelegates:{g|<g:delegateName()>.TreeAdaptor := FAdaptor;}>
end;
>>

@returnScope.ruleReturnMembers() ::= <<
function T<grammar.recognizerName>.T<ruleDescriptor:returnStructName()>.GetTree: IANTLRInterface;
begin
  Result := FTree;
end;

procedure T<grammar.recognizerName>.T<ruleDescriptor:returnStructName()>.SetTree(const Value:
IANTLRInterface);
begin
  FTree := Value
  as I<ASTLabelType>;
end;
>>

@returnScopeDeclaration.ruleReturnMembers() ::= <<
strict private
  FTree: I<ASTLabelType>;
protected
  { IRuleReturnScope }
  function GetTree: IANTLRInterface; override;
  procedure SetTree(const Value: IANTLRInterface); override;
>>

```

```

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
Root[0] := nil;<\n>
>>

ruleDeclarationVars() ::= <<
<super.ruleDeclarationVars()>
Root: array [0..63] of I<ASTLabelType>;
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<ruleDescriptor.tokenLabels:{<it.label.text>_tree := nil;}; separator="\n">
<ruleDescriptor.tokenListLabels:{<it.label.text>_tree := nil;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites:{Locals['Stream_<it>'] :=
TRewriteRule<rewriteElementType>Stream.Create(Adaptor,'token <it>');}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites:{Locals['Stream_<it>'] :=
TRewriteRuleSubtreeStream.Create(Adaptor,'rule <it>');}; separator="\n">
>>

ruleLabelDefVars()
::= <<
<super.ruleLabelDefVars()>
<ruleDescriptor.tokenLabels:{<it.label.text>_tree: I<ASTLabelType>;}; separator="\n">
<ruleDescriptor.tokenListLabels:{<it.label.text>_tree: I<ASTLabelType>;}; separator="\n">
>>
/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative
* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
Root[0] := Adaptor.GetNilNode as I<ASTLabelType>;
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>

```

```

<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<token>'] as
IRewriteRuleElementStream).Add(<label>);<\n>
>>

/** ids+=ID and track
it for use in a rewrite rule; adds to ids *and*
* to the tracking list stream_ID for use in the rewrite.
*/
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<token>'] as
IRewriteRuleElementStream).Add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

wildcardTrack(label,elementIndex) ::= <<
<super.wildcard(...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<rule.name>'] as
IRewriteRuleElementStream).Add(<label>.Tree);<\n>
>>

/**
x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<rule>'] as

```

```

IRewriteRuleElementStream).Add(<label>.Tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST
REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
<prevRuleRootRef()>.Tree := Root[0];
<rewriteCodeLabels()>
Root[0] := Adaptor.GetNilNode as I<ASTLabelType>;
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef()>.Tree = (<ASTLabelType>)adaptor.rulePostProcessing(root[0]);
input.ReplaceChildren(adaptor.GetParent(retval.Start),
adaptor.GetChildIndex(retval.Start),
adaptor.GetChildIndex(_last),
retval.Tree);
<endif>
<endif>

```



```

<! if parser or rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.Tree
:= Root[0];<\n>
<endif>
<if(!rewriteMode)>
<prevRuleRootRef(>.Tree := Root[0];<\n>
<endif>
<if(backtracking)>
end;
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {Locals['Stream_<it>'] := TRewriteRule<rewriteElementType>Stream.Create(Adaptor, 'token <it>', <it>);};
separator="\n"
>
<referencedTokenListLabels
: {Locals['Stream_<it>'] := TRewriteRule<rewriteElementType>Stream.Create(Adaptor, 'token <it>', list_<it>);};
separator="\n"
>
<referencedRuleLabels: {
if Assigned(<it>) then
Locals['Stream_<it>'] := TRewriteRuleSubtreeStream.Create(Adaptor, 'token <it>', <it>.Tree)
else
Locals['Stream_<it>'] := TRewriteRuleSubtreeStream.Create(Adaptor, 'token <it>', nil);}; separator="\n">
<referencedRuleListLabels
: {Locals['Stream_<it>'] := TRewriteRuleSubtreeStream.Create(Adaptor, 'token <it>', list_<it>);};
separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
* list rather shallow
like other blocks.
*/
rewriteOptionalBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
(* <fileName>:<description> *)
if (<referencedElementsDeep: {el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator="
or ">) then
begin
<alt>

```

```

end;
<referencedElementsDeep:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).Reset;<\n>}>
>>

rewriteClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements,    // elements in immediately block; no nested blocks
  description) ::=
<<
(* <fileName>:<description> *)
while (<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator=" or
">) do
begin
  <alt>
end;
<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).Reset();<\n>}>
>>

rewritePositiveClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep,
  // all nested refs
  referencedElements,    // elements in immediately block; no nested blocks
  description) ::=
<<
if (not (<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator=" or
">)) then
  raise ERewriteEarlyExitException.Create("");

while (<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator=" or
">) do
begin
  <alt>
end;
<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).Reset();<\n>}>
>>

rewriteAlt(a) ::= <<
(* <a.description> *)
<if(a.pred)>
if (<a.pred>) then
begin
  <a.alt>
end<\n>
<else>
begin
  <a.alt>

```

```

end;<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "Root[0] = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
(* <fileName>:<description> *)
begin
Root[<treeLevel>] := Adaptor.GetNilNode as I<ASTLabelType>;
<root:rewriteElement()>
<children:rewriteElement()>
Adaptor.AddChild(Root[<enclosingTreeLevel>],
Root[<treeLevel>]);
end;<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,terminalOptions,args) ::= <<
Adaptor.AddChild(Root[<treeLevel>], <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as
IRewriteRuleElementStream).NextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as IRewriteRuleElementStream).NextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<label>'] as
IRewriteRuleElementStream).NextNode(), Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

/**

```

```

Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,terminalOptions,args) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot(<createRewriteNodeFromElement(...)>, Root[<treeLevel>]) as
I<ASTLabelType>;<\n>
>>

rewriteImaginaryTokenRef(args,token,terminalOptions,elementIndex) ::= <<
Adaptor.AddChild(Root[<treeLevel>], <createImaginaryNode(tokenType=token, ...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,terminalOptions,elementIndex) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot(<createImaginaryNode(tokenType=token, ...)>, Root[<treeLevel>]) as
I<ASTLabelType>;<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
Root[0] = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the
* value of Root[0] right
* before I set it during rewrites. The assign will be to retval.Tree.
*/
prevRuleRootRef() ::= "RetVal"

rewriteRuleRef(rule) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<rule>'] as IRewriteRuleElementStream).NextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<rule>'] as IRewriteRuleElementStream).NextNode,
Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

rewriteNodeAction(action) ::= <<
Adaptor.AddChild(Root[<treeLevel>], <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot(<action>, Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

```

```

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as IRewriteRuleElementStream).NextTree());<\n>
>>

```

```

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
Adaptor.AddChild(Root[<treeLevel>],
(Locals['Stream_<label>'] as IRewriteRuleElementStream).NextTree());<\n>
>>

```

```

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<label>'] as IRewriteRuleElementStream).NextNode,
Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

```

```

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<label>'] as IRewriteRuleElementStream).NextNode,
Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

```

```

createImaginaryNode(tokenType,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
<! new MethodNode(IDLabel, args) !>
T<terminalOptions.node>.Create(<tokenType><if(args)>, <args; separator=","><endif>)
<else>
Adaptor.CreateNode(<tokenType>, <args; separator=","><if(!args)>'<tokenType>'<endif>) as I<ASTLabelType>
<endif>
>>

```

```

createRewriteNodeFromElement(token,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
T<terminalOptions.node>.Create((Locals['Stream_<token>']
as IRewriteRuleElementStream).NextToken<if(args)>, <args; separator=","><endif>)
<else>
<if(args)> <! must create new node from old !>
Adaptor.Create(<token>, <args; separator=",">)
<else>
(Locals['Stream_<token>'] as IRewriteRuleElementStream).NextNode
<endif>
<endif>
>>

```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Delphi/AST.stg

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```
/*  
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```

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```
*/  
/** Template overrides to add debugging to normal C output;  
 * If ASTs are built, then you'll also get ASTDbg.stg loaded.  
 */  
  
@genericParser.members() ::= <<  
<if(grammar.grammarIsRoot)>  
const char *  
ruleNames[] =  
{  
  "invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">  
};<\n>  
<endif>  
<if(grammar.grammarIsRoot)> <! grammar imports other grammar(s) !>  
static ANTLR3_UINT32  
ruleLevel = 0;  
static ANTLR3_UINT32 getRuleLevel()
```

```

{
return ruleLevel;
}
static void incRuleLevel()
{
ruleLevel++;
}
static void decRuleLevel()
{
ruleLevel--;
}
<else> <! imported grammar !>
static ANTLR3_UINT32
getRuleLevel()
{
return <grammar.delegators:{g| <g:delegateName()>>->getRuleLevel();
}
static void incRuleLevel()
{
<grammar.delegators:{g| <g:delegateName()>>->incRuleLevel();
}
static void
decRuleLevel()
{
<grammar.delegators:{g| <g:delegateName()>>.decRuleLevel();
}
<endif>
<if(profile)>
// Profiling not yet implemented for C target
//
<endif>
<if(grammar.grammarIsRoot)>
<ctorForPredefinedListener()>
<else>
<ctorForDelegateGrammar()>
<endif>

static ANTLR3_BOOLEAN
evalPredicate(p<name> ctx, ANTLR3_BOOLEAN result, const char * predicate)
{
DBG->semanticPredicate(DBG, result, predicate);
return result;
}<\n>
>>

@genericParser.debugStuff() ::= <<
<if(grammar.grammarIsRoot)>
<createListenerAndHandshake()>

```

```

<endif>
>>

ctorForProfilingRootGrammar() ::= <<
<<
>>

/** Basically we don't want to set any dbg listeners as root will have it. */
ctorForDelegateGrammar() ::= <<

>>

ctorForPredefinedListener() ::= <<

>>

createListenerAndHandshake() ::= <<
{
// DEBUG MODE code
//
pANTLR3_DEBUG_EVENT_LISTENER proxy;
proxy = antlr3DebugListenerNew();
proxy->grammarFileName = INPUT->tokenSource->strFactory->newStr8(INPUT->tokenSource->strFactory,
(pANTLR3_UINT8)ctx->getGrammarFileName());

<if(TREE_PARSER)>
proxy->adaptor = ADAPTOR;
<endif>
PARSER->setDebugListener(PARSER, proxy);

// Try to connect to the debugger (waits forever for a connection)
//
proxy->handshake(proxy);

// End DEBUG MODE code
//
}
>>

@rule.preamble() ::= <<
if ( getRuleLevel()==0 )
{
DBG->commence(DBG);
}
DBG->enterRule(DBG, getGrammarFileName(), (const char *)"<ruleName>");
incRuleLevel();
DBG->location(DBG, <ruleDescriptor.tree.line>, <ruleDescriptor.tree.column>);<\n>

```



```

>>

@rule.postamble() ::= <<
DBG->location(DBG, <ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.column>);<\n>
DBG->exitRule(DBG,
  getGrammarFileName(), (const char *)"<ruleName>");
decRuleLevel();
if ( getRuleLevel()==0 )
{
  DBG->terminate(DBG);
}
<\n>
>>

@checkRuleBacktrackFailure.debugClean() ::= <<
DBG->exitRule(DBG, getGrammarFileName(), (const char *)"<ruleName>");
decRuleLevel();
>>

@synpred.start() ::= "DBG->beginBacktrack(DBG, BACKTRACKING);"

@synpred.stop() ::= "DBG->endBacktrack(DBG, BACKTRACKING, success);"

// Common debug event triggers used by region overrides below

enterSubRule() ::=
  "DBG->enterSubRule(DBG, <decisionNumber>);<\n>"

exitSubRule() ::=
  "DBG->exitSubRule(DBG, <decisionNumber>);<\n>"

enterDecision() ::=
  "DBG->enterDecision(DBG, <decisionNumber>);<\n>"

exitDecision() ::=
  "DBG->exitDecision(DBG, <decisionNumber>);<\n>"

enterAlt(n) ::= "DBG->enterAlt(DBG, <n>);<\n>"

// Region overrides that tell various constructs to add debugging triggers

@block.predecision() ::= "<enterSubRule()><enterDecision()>"

@block.postdecision()
::= "<exitDecision()>"

@block.postbranch() ::= "<exitSubRule()>"

```

```

@ruleBlock.predecision() ::= "<enterDecision(>"

@ruleBlock.postdecision() ::= "<exitDecision(>"

@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@blockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@positiveClosureBlock.preloop() ::= "<enterSubRule(>"

@positiveClosureBlock.postloop() ::= "<exitSubRule(>"

@positiveClosureBlock.predecision() ::= "<enterDecision(>"

@positiveClosureBlock.postdecision() ::= "<exitDecision(>"

@positiveClosureBlock.earlyExitException() ::=
    "DBG->recognitionException(DBG, EXCEPTION);<n>"

@closureBlock.preloop() ::= "<enterSubRule(>"

@closureBlock.postloop() ::= "<exitSubRule(>"

@closureBlock.predecision() ::= "<enterDecision(>"

@closureBlock.postdecision() ::= "<exitDecision(>"

@altSwitchCase.prealt() ::= "<enterAlt(altNum)>"

@element.prematch() ::=
    "DBG->location(DBG, <e.line>, <e.pos>);" // e is arg of element

@matchSet.mismatchedSetException() ::=
    "DBG->recognitionException(DBG, EXCEPTION);"

@newNVEException.noViableAltException() ::= "DBG->recognitionException(DBG, EXCEPTION);"

dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = cdfa<decisionNumber>.predict(ctx, RECOGNIZER, ISTREAM,
&cdfa<decisionNumber>);
if (HASEXCEPTION())
{
    DBG->recognitionException(DBG, EXCEPTION);
    goto rule<ruleDescriptor.name>Ex;
}
<checkRuleBacktrackFailure(>
>>

```

```

@cyclicDFA.errorMethod() ::= <<
//static void
//dfaError(p<name> ctx)
//{{
//  DBG->recognitionException(DBG, EXCEPTION);
//}}
>>

/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
evalPredicate(ctx, <pred>, (const char *)"<description>")
>>

```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/C/Dbg.stg
```

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```

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```

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```
*/
```

```

/** The API version of the runtime that recognizers generated by this runtime
* need.

```

```

*/
apiVersion() ::= "1"

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
           docComment, recognizer,
           name, tokens, tokenNames, rules, cyclicDFAs,
           bitsets, buildTemplate, buildAST, rewriteMode, profile,
           backtracking, synpreds, memoize,
           numRules,
           fileName, ANTLRVersion, generatedTimestamp, trace,
           scopes, superClass, literals) ::=
<<
# $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<@imports>
import sys
from antlr3 import *
<if(TREE_PARSER)>
from antlr3.tree import *<\n>
<endif>
<@end>

<actions.(actionScope).header>

<! <docComment> !>

# for convenience in actions
HIDDEN = BaseRecognizer.HIDDEN

# token types
<tokens:{it | <it.name>=<it.type>}; separator="\n">

# token names
tokenNamesMap = {
    0: "<invalid>", 1: "<EOR>", 2: "<DOWN>", 3: "<UP>",
    <tokens:{it | <it.type>: "<it.name>"}; wrap, separator=", ">
}
Token.registerTokenNamesMap(tokenNamesMap)

<recognizer>

<if(actions.(actionScope).main)>
<actions.(actionScope).main>
<else>
def main(argv, stdin=sys.stdin, stdout=sys.stdout, stderr=sys.stderr):

```

```

<if(LEXER)>
    from antlr3.main import LexerMain
    main = LexerMain(<recognizer.name>)<\n>
<endif>
<if(PARSER)>
    from antlr3.main import ParserMain
    main = ParserMain("<recognizer.grammar.name>Lexer",
    <recognizer.name>)<\n>
<endif>
<if(TREE_PARSER)>
    from antlr3.main import WalkerMain
    main = WalkerMain(<recognizer.name>)<\n>
<endif>
    main.stdin = stdin
    main.stdout = stdout
    main.stderr = stderr
    main.execute(argv)<\n>
<endif>

<actions.(actionScope).footer>

if __name__ == '__main__':
    main(sys.argv)

>>

lexer(grammar, name, tokens, scopes, rules, numRules, filterMode,
    labelType="CommonToken", superClass="Lexer") ::= <<
<if(grammar.directDelegates)>
# path hack to allow absolute import of related grammars.
from os.path import dirname
__path__ = [dirname(__file__)]
del dirname

<grammar.directDelegates:
{g|from .<g.recognizerName> import <g.recognizerName>}; separator="\n">
<endif>

class <grammar.recognizerName>(<@superClassName><superClass><@end>):
    <scopes:{it|<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>>>

    grammarFileName = "<fileName>"
    api_version = <apiVersion()>

    def __init__(self<grammar.delegators:{g|,
<g:delegateName()>>}, input=None, state=None):
        if state is None:
            state = RecognizerSharedState()

```

```

    super().__init__(input, state)

<if(memoize)>
<if(grammar.grammarIsRoot)>
    self._state.ruleMemo = {}
<endif>
<endif>

    <grammar.directDelegates:
        {g|self.<g:delegateName()> = <g.recognizerName>(<trunc(g.delegators):{p|<p:delegateName()>, }>self, input,
state)}; separator="\n">
    <grammar.directDelegates:
        {g|<g.delegates:{h|self.<h:delegateName()> = self.<g:delegateName()>.<h:delegateName()>};
separator="\n">}; separator="\n">
    <grammar.delegators:
        {g|self.<g:delegateName()> = <g:delegateName()>}; separator="\n">
    <last(grammar.delegators):
        {g|self.gParent = <g:delegateName()>}; separator="\n">
    self.delegates = [<grammar.delegates: {g|self.<g:delegateName()>}; separator = ", ">]

    <cyclicDFAs:{ dfa | <cyclicDFAInit(dfa)>}; separator="\n">

<actions.lexer.init>

    <actions.lexer.members>

<if(filterMode)>
    <filteringNextToken()>
<endif>
    <rules; separator="\n\n">

    <synpreds:{p | <lexerSynpred(p)>}>

    <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<

```

```

def nextToken(self):
    while True:
        if self.input.LA(1) == EOF:
            return self.makeEOFToken()

        self._state.token = None
        self._state.channel = DEFAULT_CHANNEL
        self._state.tokenStartCharIndex = self.input.index()
        self._state.tokenStartCharPositionInLine = self.input.charPositionInLine
        self._state.tokenStartLine = self.input.line
        self._state._text
    = None
    try:
        m = self.input.mark()
        try:
            # means we won't throw slow exception
            self._state.backtracking = 1
            try:
                self.mTokens()
            finally:
                self._state.backtracking = 0

        except BacktrackingFailed:
            # mTokens backtracks with synpred at backtracking==2
            # and we set the synpredgate to allow actions at level 1.
            self.input.rewind(m)
            self.input.consume() # advance one char and try again

        else:
            self.emit()
            return self._state.token

    except RecognitionException as re:
        # shouldn't happen in backtracking mode, but...
        self.reportError(re)
        self.recover(re)

def memoize(self, input, ruleIndex, ruleStartIndex, success):
    if self._state.backtracking > 1:
        # is Lexer always superclass?

    super().memoize(input, ruleIndex, ruleStartIndex, success)

def alreadyParsedRule(self, input, ruleIndex):
    if self._state.backtracking > 1:
        return super().alreadyParsedRule(input, ruleIndex)

```

```

return False

>>

actionGate() ::= "self._state.backtracking == 0"

filteringActionGate() ::= "self._state.backtracking == 1"

/** How to generate a parser */

genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
              bitsets, inputStreamType, superClass, labelType, members,
              rewriteElementType, filterMode, init, ASTLabelType="Object") ::= <<
# token names
tokenNames = [
  "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>",
  <tokenNames; wrap, separator="," >
]

<scopes: {it|<if(it.isDynamicGlobalScope)><globalAttributeScopeClass(scope=it)><endif>}>

<if(grammar.directDelegates)>
# path hack to allow absolute import of related grammars.
from os.path import dirname
__path__ = [dirname(__file__)]
del dirname

<grammar.directDelegates:
{g|from
.<g.recognizerName> import <g.recognizerName>}; separator="\n">
<endif>

<rules: {it|<ruleAttributeScopeClass(scope=it.ruleDescriptor.ruleScope)>}>

class <grammar.recognizerName>(<@superClassName><superClass><@end>):
  grammarFileName = "<fileName>"
  api_version = <apiVersion()>
  tokenNames = tokenNames

  def __init__(self<grammar.delegators: {g|, <g.delegateName()>}>, input, state=None, *args, **kwargs):
    if state is None:
      state = RecognizerSharedState()

    <@args()>
    super().__init__(input, state, *args, **kwargs)

<if(memoize)>

```



```

<if(grammar.grammarIsRoot)>
    self._state.ruleMemo = {}
<endif>
<endif>

<cyclicDFAs:{ dfa | <cyclicDFAInit(dfa)> }; separator="\n">

<scopes:{ it | <if(it.isDynamicGlobalScope)><globalAttributeScopeStack(scope=it)><endif> }>
<rules:{ it | <ruleAttributeScopeStack(scope=it.ruleDescriptor.ruleScope)> }>

<init>

<grammar.delegators:
    { g|self.<g:delegateName()> = <g:delegateName()> };
separator="\n">
<grammar.directDelegates:
    { g|self.<g:delegateName()> = <g.recognizerName><(trunc(g.delegators):{ p|<p:delegateName()>, }>self, input,
state)}; separator="\n">
<grammar.directDelegates:
    { g|<g.delegates: { h|self.<h:delegateName()> = self.<g:delegateName()>.<h:delegateName()> };
separator="\n"> }; separator="\n">
<last(grammar.delegators):
    { g|self.gParent = self.<g:delegateName()> }; separator="\n">
self.delegates = [<grammar.delegates: { g|self.<g:delegateName()> }; separator = ", ">]

<@init><@end>

<@members><@end>

<members>

<rules; separator="\n\n">

<! generate rule/method definitions for imported rules so they
    appear to be defined in this recognizer. !>
<grammar.delegatedRules:{ ruleDescriptor| <delegateRule(ruleDescriptor)> }; separator="\n">

<synpreds:{ p | <synpred(p)> }>

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

<bitsets:{ it | FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>
= frozenset([<it.tokenTypes:{ it | <it> }; separator=", ">])<\n> }>

>>

delegateRule(ruleDescriptor) ::= <<

```

```

def <ruleDescriptor.name>(self, <ruleDescriptor.parameterScope:parameterScope>):
<\> <if(ruleDescriptor.hasReturnValue)>return
<endif>self.<ruleDescriptor.grammar:delegateName().<ruleDescriptor.name><(if(ruleDescriptor.parameterScope)
><ruleDescriptor.parameterScope.attributes:{a|<a.name>}; separator=", "><endif>)

>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
  ASTLabelType="Object", superClass="Parser", labelType="Token",
  members={<actions.parser.members>},
  init={<actions.parser.init>}
  ) ::= <<
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
  bitsets, "TokenStream", superClass,
  labelType, members, "Token",
  false, init, ASTLabelType)>

>>

/** How to generate a tree parser; same as parser except the input
 * stream
 * is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
  numRules, bitsets, filterMode, labelType={<ASTLabelType>}, ASTLabelType="Object",
superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif>},
members={<actions.treeparser.members>},
init={<actions.treeparser.init>}
  ) ::= <<
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
  bitsets, "TreeNodeStream", superClass,
  labelType, members, "Node",
  filterMode, init, ASTLabelType)>

>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule,
 * they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
# $ANTLR start "<ruleName>"
def <ruleName>_fragment(self, <ruleDescriptor.parameterScope:parameterScope>):
  <ruleLabelDefs>

```

```

<if(trace)>
  self.traceIn("<ruleName>_fragment", <ruleDescriptor.index>)
  try:
    <block>

  finally:
    self.traceOut("<ruleName>_fragment", <ruleDescriptor.index>)

<else>
  <block>
<endif>
# $ANTLR end "<ruleName>"

```

```
>>
```

```

synpred(name) ::= <<
def <name>(self):
  self._state.backtracking += 1
  <@start()>
  start = self.input.mark()
  try:
    self.<name>_fragment()
  except BacktrackingFailed:
    success = False
  else:
    success = True
  self.input.rewind(start)
  <@stop()>
  self._state.backtracking -= 1
  return success

```

```
>>
```

```

lexerSynpred(name) ::= <<
<synpred(name)>
>>

```

```

ruleMemoization(name) ::= <<
<if(memoize)>
if self._state.backtracking > 0 and self.alreadyParsedRule(self.input,
<ruleDescriptor.index>):
  # for cached failed rules, alreadyParsedRule will raise an exception
  success = True
  return <ruleReturnValue()>

```

```
<endif>
```

```
>>
```

```
/** This rule has failed, exit indicating failure during backtrack */
```

```
ruleBacktrackFailure() ::= <<
```

```
<if(backtracking)>
```

```
if self._state.backtracking > 0:
```

```
    raise BacktrackingFailed
```

```
<endif>
```

```
>>
```

```
/** How to generate code for a rule. This includes any return type
```

```
* data aggregates required for multiple return values.
```

```
*/
```

```
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
```

```
<returnScope(scope=ruleDescriptor.returnScope)>
```

```
# $ANTLR start "<ruleName>"
```

```
# <fileName>:<description>
```

```
<ruleDescriptor.actions.decorate>
```

```
def <ruleName>(self, <ruleDescriptor.parameterScope:parameterScope()):
```

```
<if(trace)>
```

```
    self.traceIn("<ruleName>", <ruleDescriptor.index>)<\n>
```

```
<endif>
```

```
    <ruleScopeSetUp()>
```

```
    <ruleDeclarations()>
```

```
    <ruleLabelDefs()>
```

```
    <ruleDescriptor.actions.init>
```

```
    <@preamble()>
```

```
<@body><ruleBody()><@end>
```

```
    <@postamble()>
```

```
    return <ruleReturnValue()>
```

```
# $ANTLR end "<ruleName>"
```

```
>>
```

```
ruleBody() ::= <<
```

```
<if(memoize)>
```

```
<if(backtracking)>
```

```
success = False<\n>
```

```
<endif>
```

```
<endif>
```

```
try:
```

```
    try:
```

```
        <ruleMemoization(name=ruleName)>
```

```
        <block>
```

```
        <ruleCleanUp()>
```

```

    <(ruleDescriptor.actions.after):execAction(>

<if(memoize)>
<if(backtracking)>
    success = True<\n>
<endif>
<endif>
<if(exceptions)>
    <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
    <actions.(actionScope).rulecatch>
<else>
    except RecognitionException as re:
        self.reportError(re)
        self.recover(self.input, re)
        <@setErrorReturnValue(>

<endif>
<else>
    finally:
        pass

<endif>
<endif>
finally:
<if(trace)>
    self.traceOut("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
    <memoize(>
    <ruleScopeCleanUp(>
    <finally>
    pass
>>

catch(decl,action) ::= <<
except <e.decl>:
    <e.action>

>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval = self.<ruleDescriptor.name>_return()
retval.start = self.input.LT(1)<\n>
<elseif(ruleDescriptor.returnScope)>
<ruleDescriptor.returnScope.attributes:{ a |

```

```

<a.name> = <if(a.initValue)><a.initValue><else>None<endif>
}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_startIndex = self.input.index()
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{it | self.<it>_stack.append(<it>_scope()); separator="\n">
<ruleDescriptor.ruleScope:{it | self.<it.name>_stack.append(<it.name>_scope()); separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{it | self.<it>_stack.pop(); separator="\n">
<ruleDescriptor.ruleScope:{it | self.<it.name>_stack.pop(); separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {it | <it.label.text> = None }; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,
ruleDescriptor.wildcardTreeListLabels]
: {it | list_<it.label.text> = None }; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
<ruleDescriptor.ruleListLabels:{it | <it.label.text> = None }; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it | <it.label.text> = None }; separator="\n"
>
<ruleDescriptor.charLabels:{it | <it.label.text> = None }; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {it | list_<it.label.text> = None }; separator="\n"
>
>>

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>

```

```

<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
%>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop
= self.input.LT(-1)<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if self._state.backtracking > 0:
    self.memoize(self.input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex, success)

<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
# $ANTLR start "<ruleName>"
def m<ruleName>(self, <ruleDescriptor.parameterScope:parameterScope()):
<if(trace)>
    self.traceIn("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
    <ruleScopeSetUp()>
    <ruleDeclarations()>
<if(memoize)>
<if(backtracking)>
    success = False<\n>
<endif>
<endif>
    try:
<if(nakedBlock)>
        <ruleMemoization(name=ruleName)>
        <lexerRuleLabelDefs()>
        <ruleDescriptor.actions.init>

```

```

    <block><\n>
<else>
    _type = <ruleName>
    _channel = DEFAULT_CHANNEL

    <ruleMemoization(name=ruleName)>
    <lexerRuleLabelDefs()>
    <ruleDescriptor.actions.init>
    <block>
    <ruleCleanUp()>
    self._state.type = _type
    self._state.channel = _channel
    <(ruleDescriptor.actions.after):execAction()>
<endif>
<if(memoize)>
<if(backtracking)>
    success = True<\n>
<endif>
<endif>

    finally:
<if(trace)>
    self.traceOut("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
    <ruleScopeCleanUp()>
    <memoize()>
    pass

# $ANTLR end "<ruleName>"

>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
def mTokens(self):
    <block><\n>

>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>

```



```

alt<decisionNumber> = <maxAlt>
<decls>
<@body><blockBody()><@end>
>>

```

```

blockBody() ::= <<
<@predecision()>
<@decision><decision><@end>
<@postdecision()>
<@prebranch()>
<alts:{ a
| <altSwitchCase(i, a)>}; separator="\nel">
<@postbranch()>
>>

```

```

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>
alt<decisionNumber> = <maxAlt>
<decls>
<@predecision()>
<@decision><decision><@end>
<@postdecision()>
<alts:{ a | <altSwitchCase(i, a)>}; separator="\nel">
>>

```

```

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
# <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

```

```

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
# <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

```

```

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>

```

```

cnt<decisionNumber> = 0
<decls>
<@preloop()>
<@loopBody>
<positiveClosureBlockLoop()>
<@end>
<@postloop()>
>>

```

```

positiveClosureBlockLoop() ::= <<
while True: #loop<decisionNumber>
  alt<decisionNumber> = <maxAlt>
  <@predecision()>
  <@decisionBody><decision><@end>
  <@postdecision()>
  <alts:{a | <altSwitchCase(i, a)>} ; separator="\n" >
  else:
    if cnt<decisionNumber> >= 1:
      break #loop<decisionNumber>

  <ruleBacktrackFailure()>
  eee = EarlyExitException(<decisionNumber>, self.input)
  <@earlyExitException()>
  raise eee

  cnt<decisionNumber> += 1
>>

```

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
# <fileName>:<description>
<decls>
<@preloop()>
<@loopBody>
<closureBlockLoop()>
<@end>
<@postloop()>
>>

```

```

closureBlockLoop()
::= <<
while True: #loop<decisionNumber>
  alt<decisionNumber> = <maxAlt>
  <@predecision()>
  <@decisionBody><decision><@end>

```

```

    <@postdecision()>
    <alts:{a | <altSwitchCase(i, a)>}; separator="\nel">
    else:
        break #loop<decisionNumber>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum,alt) ::= <<
if alt<decisionNumber> == <altNum>:
    <@prealt()>
    <alt>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt, treeLevel,rew) ::= <<
#
    <fileName>:<description>
    pass <! so empty alternatives are a valid block !>
    <@declarations()>
    <elements:element()>
    <rew>
    <@cleanup()>
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(e) ::= <<
    <@prematch()>
    <e.el><\n>
>>

```

```

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
<if(label)><label> = <endif>self.match(self.input, <token>,
self.FOLLOW_<token>_in_<ruleName><elementIndex>)
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(token,label,elementIndex,terminalOptions)>
<listLabel(label, label)>
>>

listLabel(label, elem) ::= <<
if list_<label> is None:
    list_<label> = []
list_<label>.append(<elem>)<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.match(<char>)
>>

/**
    match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.matchRange(<a>, <b>)
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="",terminalOptions={}) ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
if <s>:
    self.input.consume()
    <postmatchCode>
<if(!LEXER)>
    self._state.errorRecovery = False<\n>
<endif>

```

```

else:
    <ruleBacktrackFailure()>
    mse = MismatchedSetException(None, self.input)
    <@mismatchedSetException()>
<if(LEXER)>
    self.recover(mse)
    raise mse
<else>
    raise mse
    <! use following code to make it recover inline; remove throw mse;
    self.recoverFromMismatchedSet(
        self.input, mse, self.FOLLOW_set_in_<ruleName><elementIndex>
    )
    !>
<endif>
<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(label, label)>
>>

```

```

/**

```

```

    Match a string literal */

```

```

lexerStringRef(string,label,elementIndex="0") ::= <<

```

```

<if(label)>

```

```

<label>Start = self.getCharIndex()

```

```

self.match(<string>)

```

```

<label>StartLine<elementIndex> = self.getLine()

```

```

<label>StartCharPos<elementIndex> = self.getCharPositionInLine()

```

```

<label> = <labelType>(input=self.input, type=INVALID_TOKEN_TYPE, channel=DEFAULT_CHANNEL,

```

```

start=<label>Start, stop=self.getCharIndex()-1)

```

```

<label>.line = <label>StartLine<elementIndex>

```

```

<label>.charPositionInLine = <label>StartCharPos<elementIndex>

```

```

<else>

```

```

self.match(<string>)

```

```

<endif>

```

```

>>

```

```

wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<

```

```

<if(label)>

```

```

<label> = self.input.LT(1)<\n>

```

```

<endif>

```

```

self.matchAny()

```

```

>>

```

```

wildcardAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<wildcard(...)>
<listLabel(label,label)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.matchAny()
>>

wildcardCharListLabel(label, elementIndex) ::=
<<
<wildcardChar(label, elementIndex)>
<listLabel(label, label)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
self._state.following.append(self.FOLLOW_<rule.name>_in_<ruleName><elementIndex>)
<if(label)><label> = <endif>self.<if(scope)><scope.delegateName().<endif><rule.name><args; separator=",
"><\n>
self._state.following.pop()
>>

/** ids+=rule */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(rule,label,elementIndex,args,scope)>
<listLabel(label, label)>
>>

/** A lexer rule reference
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope)
::= <<
<if(label)>
<label>Start<elementIndex> = self.getCharIndex()

```

```

self.<if(scope)><scope:delegateName().<endif>m<rule.name>(<args; separator=", ">)
<label>StartLine<elementIndex> = self.getLine()
<label>StartCharPos<elementIndex> = self.getCharPositionInLine()
<label> = <labelType>(
    input=self.input,
    type=INVALID_TOKEN_TYPE,
    channel=DEFAULT_CHANNEL,
    start=<label>Start<elementIndex>,
    stop=self.getCharIndex()-1)
<label>.line = <label>StartLine<elementIndex>
<label>.charPositionInLine = <label>StartCharPos<elementIndex>
<else>
self.<if(scope)><scope:delegateName().<endif>m<rule.name>(<args; separator=", ">)
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(rule,label,args,elementIndex,scope)>
<listLabel(label, label)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
<label>Start<elementIndex> = self.getCharIndex()
<label>StartLine<elementIndex>
= self.getLine()
<label>StartCharPos<elementIndex> = self.getCharPositionInLine()
self.match(EOF)
<label> = <labelType>(input=self.input, type=EOF, channel=DEFAULT_CHANNEL,
start=<label>Start<elementIndex>, stop=self.getCharIndex()-1)
<label>.line = <label>StartLine<elementIndex>
<label>.charPositionInLine = <label>StartCharPos<elementIndex>
<else>
self.match(EOF)
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "<recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName, opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction() ::= "root_0 = $<ruleName>_primary.tree"
recRuleSetReturnAction(src, name)    ::= "$<name> = $<src>.<name>"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,

```

```

    enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if self.input.LA(1) == DOWN:
    self.match(self.input,
DOWN, None)
    <children:element()>
    self.match(self.input, UP, None)

<else>
self.match(self.input, DOWN, None)
<children:element()>
self.match(self.input, UP, None)
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if not (<evalPredicate(pred, description)>):
    <ruleBacktrackFailure()>
    raise FailedPredicateException(self.input, "<ruleName>", "<description>")

>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\n">
else:
<if(eotPredictsAlt)>
    alt<decisionNumber> = <eotPredictsAlt>
<else>
    <ruleBacktrackFailure()>
    nvae = NoViableAltException("<description>", <decisionNumber>, <stateNumber>, self.input)<\n>
    <@noViableAltException()>
    raise nvae<\n>
<endif>
>>

/**
Same as a normal DFA state except that we don't examine lookahead
* for the bypass alternative. It delays error detection but this
* is faster, smaller, and more what people expect. For (X)? people
* expect "if ( LA(1)==X ) match(X);" and that's it.

```



```

*/
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\n" >
>>

```

```

/** A DFA state that is actually the loopback decision of a closure
* loop. If end-of-token (EOT) predicts any of the targets then it
* should act like a default clause (i.e., no error can be generated).
* This is used only in the lexer so that for ('a')* on the end of a rule
* anything other than 'a' predicts exiting.
*/

```

```

*/
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\n" ><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>
= <eotPredictsAlt> <! if no edges, don't gen ELSE !>
<else>
else:
alt<decisionNumber> = <eotPredictsAlt>
<\n>
<endif>
<endif>
>>

```

```

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>"

```

```

/** A simple edge with an expression. If the expression is satisfied,
* enter to the target state. To handle gated productions, we may
* have to evaluate some predicates for this edge.
*/

```

```

dfaEdge(labelExpr, targetState, predicates) ::= <<
if (<labelExpr>) <if(predicates)>and (<predicates>)<endif>:
<targetState>
>>

```

```

// F i x e d D F A (switch case)

```

```

/** A DFA state where a SWITCH may be generated. The code generator
* decides if this is possible: CodeGenerator.canGenerateSwitch().
*/

```

```

dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
<!
FIXME: this is one of the few occasion, where I miss a switch statement
in Python. ATM this is implemented as a list of if .. elif ..

```

```

This
may be replaced by faster a dictionary lookup, when I find a solution
for the cases when an edge is not a plain dfaAcceptState.
!>
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\nел">
else:
<if(eotPredictsAlt)>
    alt<decisionNumber> = <eotPredictsAlt>
<else>
    <ruleBacktrackFailure()>
    nvae = NoViableAltException("<description>", <decisionNumber>, <stateNumber>, self.input)<\n>
    <@noViableAltException()>
    raise nvae<\n>
<endif>

>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\nел">
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\nел">
<if(eotPredictsAlt)>
else:
    alt<decisionNumber> = <eotPredictsAlt>
<endif>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
if LA<decisionNumber> in {<labels; separator=", ">}:
    <targetState>
>>

// C y c l
i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = self.dfa<decisionNumber>.predict(self.input)
>>

```

```

/* Dump DFA tables as run-length-encoded Strings of octal values.
* Can't use hex as compiler translates them before compilation.
* These strings are split into multiple, concatenated strings.
* Java puts them back together at compile time thankfully.
* Java cannot handle large static arrays, so we're stuck with this
* encode/decode approach. See analysis and runtime DFA for
* the encoding methods.
*/
cyclicDFA(dfa) ::= <<
# lookup tables for DFA #<dfa.decisionNumber>

DFA<dfa.decisionNumber>_eot = DFA.unpack(
    "<dfa.javaCompressedEOT; wrap=\"\\n \\\">"
    )

DFA<dfa.decisionNumber>_eof = DFA.unpack(
    "<dfa.javaCompressedEOF; wrap=\"\\n \\\">"
    )

DFA<dfa.decisionNumber>_min = DFA.unpack(
    "<dfa.javaCompressedMin; wrap=\"\\n \\\">"
    )

DFA<dfa.decisionNumber>_max = DFA.unpack(
    "<dfa.javaCompressedMax; wrap=\"\\n \\\">"
    )

DFA<dfa.decisionNumber>_accept = DFA.unpack(
    "<dfa.javaCompressedAccept; wrap=\"\\n \\\">"
    )

DFA<dfa.decisionNumber>_special = DFA.unpack(
    "<dfa.javaCompressedSpecial; wrap=\"\\n \\\">"
    )

DFA<dfa.decisionNumber>_transition = [
    <dfa.javaCompressedTransition:{s|DFA.unpack("<s; wrap=\"\\n\\\">"); separator=",\n">
    ]

# class definition for DFA #<dfa.decisionNumber>

class DFA<dfa.decisionNumber>(DFA):
    pass

    <@errorMethod()>

    <if(dfa.specialStateSTs)>

```

```

def specialStateTransition(self_, s, input):
    # convince pylint that my self_ magic is ok ;)
    # pylint: disable-msg=E0213

    # pretend we are a member of the recognizer
    # thus semantic predicates can be evaluated
    self = self_.recognizer

    _s = s

    <dfa.specialStateSTs:{state
| if s == <i0>: <! compressed special state numbers 0..n-1 !>
<state>} ; separator="\n"|>

<if(backtracking)>
    if self._state.backtracking > 0:
        raise BacktrackingFailed

<endif>
    nvae = NoViableAltException(self_.getDescription(), <dfa.decisionNumber>, _s, input)
    self_.error(nvae)
    raise nvae<\n>
<endif>

>>

cyclicDFAInit(dfa) ::= <<
self.dfa<dfa.decisionNumber> = self.DFA<dfa.decisionNumber>(
    self, <dfa.decisionNumber>,
    eot = self.DFA<dfa.decisionNumber>_eot,
    eof = self.DFA<dfa.decisionNumber>_eof,
    min = self.DFA<dfa.decisionNumber>_min,
    max = self.DFA<dfa.decisionNumber>_max,
    accept = self.DFA<dfa.decisionNumber>_accept,
    special = self.DFA<dfa.decisionNumber>_special,
    transition = self.DFA<dfa.decisionNumber>_transition
)<\n>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState)
::= <<
LA<decisionNumber>_<stateNumber> = input.LA(1)<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
index<decisionNumber>_<stateNumber> = input.index()
input.rewind()<\n>

```

```

<endif>
s = -1
<edges; separator="\nel">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>)<\n>
<endif>
if s >= 0:
    return s
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if (<labelExpr>)<if(predicates)> and (<predicates>)<endif>:
    s = <targetStateNumber><\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
se:
    s = <targetStateNumber><\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "((<left>) and (<right>))"

orPredicates(operands)
::= "(<operands; separator=\" or \">>)"

notPredicate(pred) ::= "not (<evalPredicate(pred, {}>))"

evalPredicate(pred,description) ::= "(<pred>)"

evalSynPredicate(pred,description) ::= "self.<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "self.input.LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%

```

```

(<lower> \<= LA<decisionNumber>_<stateNumber> \<= <upper>)
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(<lower> \<=
self.input.LA(<k>) \<= <upper>)"

lookaheadSetTest(values,k,valuesAsInt) ::= <%
LA<decisionNumber>_<stateNumber> in {<values; separator=","}>
%>

isolatedLookaheadSetTest(values,k,valuesAsInt) ::= <%
self.input.LA(<k>) in {<values; separator=","}>
%>

lookaheadVarName(k)
::= "LA<decisionNumber>_<stateNumber>"
isolatedLookaheadVarName(k) ::= "self.input.LA(<k>)"

setTest(ranges) ::= "<ranges; separator=\" or \>"

// A T T R I B U T E S

globalAttributeScopeClass(scope) ::= <<
<if(scope)>
<if(scope.attributes)>
class <scope.name>_scope(object):
  def __init__(self):
    <scope.attributes:{it | self.<it.decl> = None}; separator="\n">

<endif>
<endif>
>>

globalAttributeScopeStack(scope) ::= <<
<if(scope)>
<if(scope.attributes)>
self.<scope.name>_stack = []<\n>
<endif>
<endif>
>>

ruleAttributeScopeClass(scope) ::= <<
<if(scope)>
<if(scope.attributes)>
class <scope.name>_scope(object):
  def __init__(self):
    <scope.attributes:{it | self.<it.decl> = None}; separator="\n">

```

```

<endif>
<endif>
>>

ruleAttributeScopeStack(scope) ::= <<
<if(scope)>
<if(scope.attributes)>
self.<scope.name>_stack = []<\n>
<endif>
<endif>
>>

delegateName(d) ::= <<
<if(d.label)><d.label><else>g<d.name><endif>
>>

/** Define a rule label including
    default value */
ruleLabelDef(label) ::= <<
<label.label.text> = None
>>

returnStructName(r) ::= "<r.name>_return"

/** Define a return struct for a rule if the code needs to access its
    * start/stop tokens, tree stuff, attributes, ... Leave a hole for
    * subgroups to stick in members.
    */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
class <ruleDescriptor:returnStructName()><(if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope):
    def __init__(self):
        super().__init__()

        <if(scope)><scope.attributes:{it | self.<it.decl> = None }; separator="\n"><endif>
        <@ruleReturnInit()>

        <@ruleReturnMembers()>

<endif>
>>

parameterScope(scope) ::= <<
<if(scope)><scope.attributes:{it | <it.decl>}; separator=", "><endif>
>>

parameterAttributeRef(attr) ::= "<attr.name>"

```

```
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>"
```

```
scopeAttributeRef(scope,attr,index,negIndex) ::= <%
```

```
<if(negIndex)>
```

```
self.<scope>_stack[-<negIndex>].<attr.name>
```

```
<else>
```

```
<if(index)>
```

```
self.<scope>_stack[<index>].<attr.name>
```

```
<else>
```

```
self.<scope>_stack[-1].<attr.name>
```

```
<endif>
```

```
<endif>
```

```
%>
```

```
/*
```

```
not applying patch because of bug in action parser!
```

```
<if(negIndex)>
```

```
((len(self.<scope>_stack) - <negIndex> - 1) >= 0 and [self.<scope>_stack[-<negIndex>].<attr.name>] or [None])[0]
```

```
<else>
```

```
<if(index)>
```

```
((<index> < len(self.<scope>_stack)) and [self.<scope>_stack[<index>].<attr.name>] or [None])[0]
```

```
<else>
```

```
((len(self.<scope>_stack) > 0) and [self.<scope>_stack[-1].<attr.name>] or [None])[0]
```

```
<endif>
```

```
<endif>
```

```
*/
```

```
scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
```

```
<if(negIndex)>
```

```
<!FIXME: this seems not to be used by ActionTranslator...!>
```

```
self.<scope>_stack[-<negIndex>].<attr.name> = <expr>
```

```
<else>
```

```
<if(index)>
```

```
<!FIXME: this seems not to be used by ActionTranslator...!>
```

```
self.<scope>_stack[<index>].<attr.name> = <expr>
```

```
<else>
```

```
self.<scope>_stack[-1].<attr.name> = <expr>
```

```
<endif>
```

```
<endif>
```

```
%>
```

```
/** $x is either global scope or x is rule with dynamic scope; refers
```

```
* to stack itself not top of stack. This is useful for predicates
```

```
* like { $function.size()>0 && $function::name.equals("foo") }?
```

```
*/
```

```
isolatedDynamicScopeRef(scope) ::= "self.<scope>_stack"
```



```

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
((<scope> is not None) and [<scope>.<attr.name>] or [None])[0]
<else>
<scope>
<endif>
%>

```

```

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
%>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> = <expr>
<else>
<attr.name> = <expr>
<endif>
%>

```

```

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

```

```

// not sure the next are the right approach; and they are evaluated early;
// they cannot
see TREE_PARSER or PARSER attributes for example. :(

```

```

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>.text"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>.type"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>.line"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>.charPositionInLine"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>.channel"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>.index"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"

```

```

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>.tree"

```

```

ruleLabelPropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
((<scope> is not None) and [self.input.getTokenStream().toString(
    self.input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
    self.input.getTreeAdaptor().getTokenStopIndex(<scope>.start)
    ]) or [None])[0]
<else>
((<scope> is not None) and [self.input.toString(<scope>.start,<scope>.stop)]
or [None])[0]
<endif>
%>
ruleLabelPropertyRef_st(scope,attr) ::= "((<scope> is not None) and [<scope>.st] or [None])[0]"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "((<scope> is not None) and [<scope>.type] or [0])[0]"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "((<scope> is not None) and [<scope>.line] or [0])[0]"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "((<scope> is not None) and [<scope>.charPositionInLine] or
[0])[0]"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "((<scope> is not None) and [<scope>.channel] or [0])[0]"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "((<scope> is not None) and [<scope>.index] or [0])[0]"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "((<scope> is not None) and [<scope>.text] or [None])[0]"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "((<scope> is not None) and [int(<scope>.text)] or [0])[0]"

// Somebody may ref $template
or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.start"
rulePropertyRef_stop(scope,attr) ::= "retval.stop" //mmm... or input.LT(-1)??
rulePropertyRef_tree(scope,attr) ::= "retval.tree"
rulePropertyRef_text(scope,attr) ::= "self.input.toString(retval.start, self.input.LT(-1))"
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "self.text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "self._state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "self._state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "self._state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(self.getCharIndex()-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int(<scope>.text)"

// setting $st and $tree is allowed
in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>"

```

```

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if <actions.(actionScope).synpredgate>:
    pass
    <action>

<else>
if <actions.(actionScope).synpredgate>:
    pass
    <action>

<endif>
<else>
#action start
<action>
#action end
<endif>
>>

```

```

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

```

```
// M I S C (properties, etc...)
```

```
codeFileExtension() ::= ".py"
```

```
true_value() ::= "True"
```

```
false_value() ::= "False"
```

```
Found in path(s):
```

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Python3/Python3.stg
```

```
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```

```
/*
```

```
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```

```
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```

```
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```

```
*
```

```
* Conversion to C#:
```

```
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```

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```

```
*
```

```

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*/

```

```

/** Templates for building ASTs during normal parsing.
*
* Deal with many combinations. Dimensions are:
* Auto build or rewrite
* no label, label, list label (label/no-label handled together)
* child, root
* token, set, rule, wildcard
*
* The situation is not too bad as rewrite (->) usage makes ^ and !
* invalid.
There is no huge explosion of combinations.
*/

```

```

@rule.setErrorReturnValue() ::= <<
retval.Tree = (<ASTLabelType>)adaptor.ErrorNode(input, retval.Start, input.LT(-1), re);
<! System.out.WriteLine("<ruleName> returns "+((CommonTree)retval.tree).toStringTree()); !>
>>

```

```

// TOKEN AST STUFF

```

```

/** ID and output=AST */
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <%
<super.tokenRef(...)>
<if(!ruleDescriptor.isSynPred)>

```

```

<if(backtracking)><\n>if (state.backtracking == 0) { <endif>
<\n><label>_tree = <createNodeFromToken(...)>;
<\n>adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)><\n>}<endif>
<endif>
%>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex,terminalOptions={ }) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions={ }) ::= <%
<super.tokenRef(...)>
<if(!ruleDescriptor.isSynPred)>
<if(backtracking)><\n>if (<actions.(actionScope).synpredgate>) { <endif>
<\n><label>_tree =
  <createNodeFromToken(...)>;
<\n>root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)><\n>}<endif>
<endif>
%>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRefBang(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRef(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRefRuleRoot(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending
// on the operator. I don't like making
// the template name have the operator as the number of templates gets

```

```

// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,elementIndex,postmatchCode,terminalOptions={ }) ::= <<
<super.matchSet(postmatchCode={ <if(!ruleDescriptor.isSynPred)><if(backtracking)>if
(<actions.(actionScope).synpredgate>) <endif>adaptor.AddChild(root_0, <createNodeFromToken(...)>;<endif>},
...)>
>>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={ }) ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={ }) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts:
(A|B|...|C)

matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={ }) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);
<endif>
<super.matchSet(postmatchCode={ <if(!ruleDescriptor.isSynPred)><if(backtracking)>if
(<actions.(actionScope).synpredgate>) <endif>root_0 =
(<ASTLabelType>)adaptor.BecomeRoot(<createNodeFromToken(...)>, root_0);<endif>}, ...) >
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <%
<super.ruleRef(...)>
<if(!ruleDescriptor.isSynPred)>
<\n><if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>adaptor.AddChild(root_0, <label>.Tree);
<endif>
%>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_0 =

```

```

(<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_0);
>>

/** x+=rule when
output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

// WILDCARD AST

wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<
<super.wildcard(...)>
<if(!ruleDescriptor.isSynPred)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)>}<endif>
<endif>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(token=[],...)>"

wildcardRuleRoot(token,label,elementIndex,terminalOptions={ })
::= <<
<super.wildcard(...)>
<if(!ruleDescriptor.isSynPred)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)>}<endif>
<endif>
>>

createNodeFromToken(label,terminalOptions={ }) ::= <%

```

```

<if(terminalOptions.node)>
new
<terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text; format="string"><endif>)
<else>
(<ASTLabelType>)adaptor.Create(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalO
ptions.text)>,<terminalOptions.text; format="string"><endif>)
<endif>
%>

```

```

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
retval.Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
adaptor.SetTokenBoundaries(retval.Tree, retval.Start, retval.Stop);
<if(backtracking)>}<endif>
>>

```

Found

in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp3/ASTParser.stg

```

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```

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```

```

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```

```

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```

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```

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*/

/** Template overrides to add debugging to AST stuff. Dynamic inheritance

* hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.

*/

```
parserMembers() ::= <<
```

```
protected DebugTreeAdaptor adaptor;
```

```
public void setTreeAdaptor(TreeAdaptor adaptor) {
```

```
<if(grammar.grammarIsRoot)>
```

```
    this.adaptor = new DebugTreeAdaptor(dbg, adaptor);
```

```
<else>
```

```
    this.adaptor = (DebugTreeAdaptor) adaptor; // delegator sends dbg adaptor
```

```
<endif>
```

```
    <grammar.directDelegates: { g | <g:delegateName()>.setTreeAdaptor(this.adaptor); }>
```

```
}
```

```
public
```

```
TreeAdaptor getTreeAdaptor() {
```

```
    return adaptor;
```

```
}
```

```
>>
```

```
parserCtorBody() ::= <<
```

```
<super.parserCtorBody()>
```

```
>>
```

```
createListenerAndHandshake() ::= <<
```

```
DebugEventSocketProxy proxy =
```

```
new DebugEventSocketProxy(this, port, <if(TREE_PARSER)>input.getTreeAdaptor()<else>adaptor<endif>);
```

```
setDebugListener(proxy);
```

```
set<inputStreamType>(new Debug<inputStreamType>(input, proxy));
```

```
try {
```

```
    proxy.handshake();
```

```
}
```

```
catch (IOException ioe) {
```

```
    reportError(ioe);
```

```
}
```

```
>>
```

```
@ctorForRootGrammar.finally() ::= <<
```

```
TreeAdaptor adap = new CommonTreeAdaptor();
```

```
setTreeAdaptor(adap);
```

```
proxy.setTreeAdaptor(adap);
```

```
>>
```

```
@ctorForProfilingRootGrammar.finally() ::=<<<
TreeAdaptor adap = new CommonTreeAdaptor();
setTreeAdaptor(adap);
>>
```

```
@ctorForPredefinedListener.superClassRef() ::= "super(input, dbg);"
```

```
@ctorForPredefinedListener.finally() ::=<<<
<if(grammar.grammarIsRoot)> <! don't create new adaptor for delegates !>
TreeAdaptor adap = new CommonTreeAdaptor();
setTreeAdaptor(adap);
<endif>
>>
```

```
@rewriteElement.pregen()
::= "dbg.location(<e.line>,<e.pos>);"
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Java/ASTDbg.stg
```

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```

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*/

/** Templates for building ASTs during normal parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* The situation is not too bad as rewrite (->) usage makes ^ and !

* invalid. There is no huge explosion of combinations.

*/

```
finishedBacktracking(block) ::= <<
```

```
<if(!ruleDescriptor.isSynPred)>
```

```
<if(backtracking)>
```

```
if <actions.(actionScope).synpredgate>:
```

```
  <block>
```

```
<else>
```

```
<block>
```

```
<endif>
```

```
<endif>
```

```
>>
```

```
@ruleBody.setErrorReturnValue() ::= <<
```

```
retval.tree = self._adaptor.errorNode(self.input, retval.start, self.input.LT(-1), re)
```

```
>>
```

```
// TOKEN AST STUFF
```

```
/** ID and output=AST */
```

```
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
```

```
<super.tokenRef(...)>
```

```
<finishedBacktracking({
```

```
<label>_tree = <createNodeFromToken(...)>
```

```
self._adaptor.addChild(root_0, <label>_tree)
```

```
})>
```

```
>>
```

```
/** ID! and output=AST (same as plain tokenRef) */
```

```
tokenRefBang(token,label,elementIndex,terminalOptions={}) ::= "<super.tokenRef(...)>"
```

```
/** ID^ and output=AST */
```

```
tokenRefRuleRoot(token,label,elementIndex,terminalOptions={}) ::= <<
```

```
<super.tokenRef(...)>
```

```
<finishedBacktracking({
```

```

<label>_tree = <createNodeFromToken(...)>
root_0 = self._adaptor.becomeRoot(<label>_tree, root_0)
})>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/**
label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate
// that refactoring when
// I have more time.

matchSet(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <%
<super.matchSet(postmatchCode={ <finishedBacktracking({self._adaptor.addChild(root_0,
<createNodeFromToken(...)>})>}, ...)>
%>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={}) ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= "<super.matchSet(...)>"

```

```

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={}) ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
<super.matchSet(postmatchCode={<finishedBacktracking({root_0 =
self._adaptor.becomeRoot(<createNodeFromToken(...)>, root_0)})>, ...}>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<finishedBacktracking({self._adaptor.addChild(root_0,
<label>.tree}))>
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<finishedBacktracking({root_0 = self._adaptor.becomeRoot(<label>.tree, root_0)})>
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(label, {<label>.tree})>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(label, {<label>.tree})>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(label, {<label>.tree})>
>>

```

```
// WILDCARD AST
```

```
wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<  
<super.wildcard(...)>  
<finishedBacktracking({  
<label>_tree = self._adaptor.createWithPayload(<label>  
self._adaptor.addChild(root_0,  
  <label>_tree)  
})>  
>>
```

```
wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"
```

```
wildcardRuleRoot(token,label,elementIndex,terminalOptions={ }) ::= <<  
<super.wildcard(...)>  
<finishedBacktracking({  
<label>_tree = self._adaptor.createWithPayload(<label>  
root_0 = self._adaptor.becomeRoot(<label>_tree, root_0)  
})>  
>>
```

```
createNodeFromToken(label,terminalOptions={ }) ::= <%  
<if(terminalOptions.node)>  
<terminalOptions.node>(<label>) <! new MethodNode(IDLabel) !>  
<else>  
self._adaptor.createWithPayload(<label>  
<endif>  
%>
```

```
ruleCleanup() ::= <<  
<super.ruleCleanup()>  
<finishedBacktracking({  
retval.tree = self._adaptor.rulePostProcessing(root_0)  
self._adaptor.setTokenBoundaries(retval.tree, retval.start, retval.stop)  
})>  
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/codegen/templates/Python3/ASTParser.stg
```

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```
/*
```

```
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```

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```

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*/

/** Templates for building ASTs during normal parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* The situation is not too bad as rewrite (->) usage makes ^ and !

* invalid. There is no huge explosion of combinations.

*/

group ASTParser;

@rule.setErrorReturnValue() ::= <<

RetVal.Tree := Adaptor.ErrorNode(Input, RetVal.Start as IToken,
Input.LT(-1), RE) as I<ASTLabelType>;

>>

// TOKEN AST STUFF

/** ID and output=AST */

```

tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<super.tokenRef(...)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
<label>_tree := <createNodeFromToken(...)>;
Adaptor.AddChild(Root[0], <label>_tree);
<if(backtracking)>
end;
<endif>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
<super.tokenRef(...)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<label>_tree := <createNodeFromToken(...)>;
Root[0] := Adaptor.BecomeRoot(<label>_tree, Root[0]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions)
::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,terminalOptions,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```



```

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label
plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={<if(backtracking)>if (State.Backtracking = 0) then
<endif>Adaptor.AddChild(Root[0], <createNodeFromToken(...)>);}>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
<if(label)>
<label> := Input.LT(1) as I<labelType>;<\n>
<endif>
<super.matchSet(..., postmatchCode={<if(backtracking)>if (State.Backtracking = 0) then <endif>Root[0] :=
Adaptor.BecomeRoot(<createNodeFromToken(...)>, Root[0]) as I<ASTLabelType>);}>
>>

// RULE REF
AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>Adaptor.AddChild(Root[0], <label>.Tree);
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

```

```

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>Root[0] := Adaptor.BecomeRoot(<label>.Tree, Root[0])
as I<ASTLabelType>;
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".Tree",...)>
>>

//
WILDCARD AST

wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<label>_tree := Adaptor.CreateNode(<label>) as I<ASTLabelType>;
Adaptor.AddChild(Root[0], <label>_tree);
<if(backtracking)>
end;
<endif>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>
if (State.Backtracking = 0) then

```

```

begin
<endif>
<label>_tree := Adaptor.CreateNode(<label>) as I<ASTLabelType>;
Root[0] := Adaptor.BecomeRoot(<label>_tree, Root[0]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
>>

createNodeFromToken(label,terminalOptions) ::= <<
<if(terminalOptions.node)>
T<terminalOptions.node>.Create(<label>) <! new MethodNode(IDLabel) !>
<else>
Adaptor.CreateNode(<label>) as I<ASTLabelType>
<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(backtracking)>
if (State.Backtracking = 0)
then
begin<\n>
<endif>
RetVal.Tree := Adaptor.RulePostProcessing(Root[0]) as I<ASTLabelType>;
<if(!TREE_PARSER)>
Adaptor.SetTokenBoundaries(RetVal.Tree, RetVal.Start as IToken, RetVal.Stop as IToken);
<endif>
<if(backtracking)>
<\n>end;
<endif>
>>

```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Delphi/ASTParser.stg
```

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```
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```

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*/

group Perl5;

/** The overall file structure of a recognizer; stores methods for rules

* and cyclic DFAs plus support code.

*/

outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
docComment, recognizer,
name, tokens, tokenNames, rules, cyclicDFAs,
bitsets, buildTemplate, buildAST, rewriteMode, profile,
backtracking, synpreds, memoize, numRules,
fileName, ANTLRVersion, generatedTimestamp, trace,

scopes, superClass, literals) ::=

<<

\$ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<actions.(actionScope).header>

<@imports>

<if(TREE_PARSER)>

<endif>

<if(backtracking)>

<endif>

<@end>

<docComment>

<recognizer>

>>

```

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
    filterMode, superClass="ANTLR::Runtime::Lexer") ::= <<
package <name>;

use Carp;
use English qw( -no_match_vars );
use Readonly;
use Switch;

use ANTLR::Runtime::BaseRecognizer;
use ANTLR::Runtime::DFA;
use ANTLR::Runtime::NoViableAltException;

use Moose;

extends 'ANTLR::Runtime::Lexer';

Readonly my $HIDDEN => ANTLR::Runtime::BaseRecognizer->HIDDEN;
sub HIDDEN { $HIDDEN }

use constant {
    <tokens:{ <it.name> => <it.type>, }; separator="\n">
};
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<actions.lexer.members>

sub BUILD {
    my ($self, $arg_ref) = @_ ;

    $self->init_dfas();
}

sub get_grammar_file_name {
    return "<fileName>";
}

<if(filterMode)>
<filteringNextToken()>
<endif>
<rules;
separator="\n\n">

<synpreds:{p | <lexerSynpred(p)>}>

<cyclicDFAs:{ dfa | has 'dfa<dfa.decisionNumber>'; }; separator="\n">

sub init_dfas {
    my ($self) = @_ ;

```

```

    <cyclicDFAs:{dfa |
    $self->dfa<dfa.decisionNumber>(<name>::DFA<dfa.decisionNumber>->new({ recognizer => $self }));
    }; separator="\n">

    return;
}

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

no Moose;
__PACKAGE__->meta->make_immutable();
1;

>>

perlTypeInitMap ::= [
    "$":"undef",
    "@":"()",
    "%":"()",
    default:"undef"
]

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
public Token nextToken() {
    while (true) {
        if ( input.LA(1)==CharStream.EOF
    ) {
        return Token.EOF_TOKEN;
        }
        token = null;
channel = Token.DEFAULT_CHANNEL;
        tokenStartCharIndex = input.index();
        tokenStartCharPositionInLine = input.getCharPositionInLine();
        tokenStartLine = input.getLine();
text = null;
        try {
            int m = input.mark();
            backtracking=1; <! means we won't throw slow exception !>
            failed=false;
            mTokens();
            backtracking=0;

```

```

        <! mTokens backtracks with synpred at backtracking==2
        and we set the synpredgate to allow actions at level 1. !>
        if ( failed ) {
            input.rewind(m);
            input.consume(); <! advance one char and try again !>
        }
        else {
            emit();
            return token;
        }
    }
    catch (RecognitionException re) {
        // shouldn't happen in backtracking mode, but...
        reportError(re);

        recover(re);
    }
}
}

public void memoize(IntStream input,
    int ruleIndex,
    int ruleStartIndex)
{
    if ( backtracking>1 ) super.memoize(input, ruleIndex, ruleStartIndex);
}

public boolean alreadyParsedRule(IntStream input, int ruleIndex) {
    if ( backtracking>1 ) return super.alreadyParsedRule(input, ruleIndex);
    return false;
}
>>

actionGate() ::= "$self->state->backtracking==0"

filteringActionGate() ::= "backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
    bitsets, inputStreamType, superClass, filterMode,
    ASTLabelType="Object", labelType, members) ::= <<
package <name>;

use English qw( -no_match_vars );
use Readonly;
use Switch;
use Carp;
use ANTLR::Runtime::BitSet;

```

```

use Moose;

extends '<@superClassName><superClass><@end>';

readonly my $token_names => [
    "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
];

use constant {
    <tokens: { <it.name>
        => <it.type>, }; separator="\n">
};

<bitsets:bitset(name={ FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
    words64=it.bits)>

<scopes: { <if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif> }>
<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>

sub BUILD {
    my ($self, $arg_ref) = @_;

    <if(backtracking)>
        $self->state->rule_memo({});<\n>
    <endif>
}
<@end>

sub get_token_names {
    return $token_names;
}

sub get_grammar_file_name {
    return "<fileName>";
}

<members>

<rules; separator="\n\n">

<synpreds: { p | <synpred(p)> }>

<cyclicDFAs: { dfa | dfa<dfa.decisionNumber> = __PACKAGE__::DFA<dfa.decisionNumber>->new($self); }>
separator="\n">
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

```



```

no Moose;
__PACKAGE__->meta->make_immutable();
1;
__END__
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType,
superClass="ANTLR::Runtime::Parser", labelType="ANTLR::Runtime::Token",
members={<actions.parser.members>})
::= <<
<genericParser(inputStreamType="ANTLR::Runtime::TokenStream", ...)>
>>

/** How to generate a tree parser; same as parser except the input
* stream is a different type.
*/
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="Object", superClass="ANTLR::Runtime::TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="TreeNodeStream", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
* rules created for syntactic predicates. As they never have return values
* nor parameters etc..., just give simplest possible method. Don't do
* any of the normal memoization stuff in here either; it's a waste.
* As predicates cannot be inlined into the invoking rule, they need to
* be in a rule by themselves.
*/
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
# $ANTLR start
<ruleName>
sub <ruleName>_fragment {
# <ruleDescriptor.parameterScope:parameterScope(scope=it)>

<if(trace)>
$self->traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
eval {
    <block>
};
$self->traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
if ($EVAL_ERROR) {
    croak $EVAL_ERROR;
}
<else>
    <block>
<endif>

```

```

}
# $ANTLR end <ruleName>
>>

synpred(name) ::= <<
public final boolean <name>() {
    backtracking++;
    <@start()>
    int start = input.mark();
    try {
        <name>_fragment(); // can never throw exception
    } catch (RecognitionException re) {
        System.err.println("impossible: "+re);
    }
    boolean success = !failed;
    input.rewind(start);
    <@stop()>
    backtracking--;
    failed=false;
    return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ( backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index>) ) { return <ruleReturnValue()>;
}
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>
if ($self->state->failed) {
    return <ruleReturnValue()>;
}
<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (backtracking>0) { failed=true; return <ruleReturnValue()>;}<endif>
>>

```

```

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

# $ANTLR start <ruleName>
# <fileName>:<description>
sub <ruleName>() {
  my ($self, <ruleDescriptor.parameterScope:parameterScope(scope=it)>) = @_;
  <if(trace)>$self->traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
  <ruleScopeSetUp()>
  <ruleDeclarations()>
  <ruleLabelDefs()>
  <ruleDescriptor.actions.init>
  <@preamble()>
  eval {
    <ruleMemoization(name=ruleName)>
    <block>
    <ruleCleanUp()>
    <(ruleDescriptor.actions.after):execAction()>
  };
  <if(exceptions)>
    <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n}>>
  <else>
  <if(!emptyRule)>
  <if(actions.(actionScope).rulecatch)>
    <actions.(actionScope).rulecatch>
  <else>
    my $exception = $EVAL_ERROR;
    if (ref $exception && $exception->isa('ANTLR::Runtime::RecognitionException')) {
      $self->report_error($exception);
      $self->recover($self->input, $exception);
      $exception = undef;
    }<\n>
  <endif>
  <endif>
  <endif>
  <if(trace)>$self->traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
  <memoize()>
  <ruleScopeCleanUp()>
  <finally>
  if ($exception) {
    croak $exception;
    # $exception->rethrow();
  }
  <@postamble()>

```

```

    return <ruleReturnValue(>;
}
# $ANTLR end <ruleName>
>>

catch(decl,action) ::= <<
catch
(<e.decl>) {
    <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
my $retval = <returnType(>->new();
$retval->set_start($self->input->LT(1));<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
my $<a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
my $<ruleDescriptor.name>_start_index = $self->input->index();
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.push(new <it>_scope());}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.push(new <it.name>_scope());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.pop();}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {my $<it.label.text> = undef;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {List list_<it.label.text>=null;};
separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: {ll|RuleReturnScope <ll.label.text> = null;}; separator="\n">
>>

```

```

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<labelType> <it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.charLabels: {my $<it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {List list_<it.label.text>=null;}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
$<ruleDescriptor.singleValueReturnName>
<else>
$retval
<endif>
<endif>
<endif>
>>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
$retval->set_stop($self->input->LT(-1));<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if
( backtracking>0 ) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
* fragment rules.
*/
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
# $ANTLR start <ruleName>

```

```

sub m_<ruleName> {
# <ruleDescriptor.parameterScope:parameterScope(scope=it)>
  my ($self) = @_;
  <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
  <ruleDeclarations()>
  eval {
<if(nakedBlock)>
  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  <block><\n>
<else>
  my $_type = <ruleName>;
  my $_channel = $self->DEFAULT_TOKEN_CHANNEL;
  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  <block>
  <ruleCleanUp()>
  $self->state->type($_type);
  $self->state->channel($_channel);
  <(ruleDescriptor.actions.after):execAction()>
<endif>
  };
  <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
  <memoize()>

  if ($EVAL_ERROR) {
    croak $EVAL_ERROR;
  }
}
# $ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
sub m_tokens {
  my ($self) = @_;
  <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

```

```

# <fileName>:<description>
my $alt<decisionNumber> = <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch ($alt<decisionNumber>) {
  <alts:altSwitchCase()>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>
my $alt<decisionNumber> = <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch ($alt<decisionNumber>) {
  <alts:altSwitchCase()>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
# <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
# <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>

```

```

my $cnt<decisionNumber> = 0;
<decls>
<@preloop()>
LOOP<decisionNumber>:
while (1) {
  my $alt<decisionNumber> = <maxAlt>;
  <@predecision()>
  <decision>
  <@postdecision()>

  switch ($alt<decisionNumber>) {
    <alts:altSwitchCase()>
    else {
      if ( $cnt<decisionNumber> >= 1 ) { last LOOP<decisionNumber> }
      <ruleBacktrackFailure()>
      my $eee =
        ANTLR::Runtime::EarlyExitException->new(<decisionNumber>, $self->input);
      <@earlyExitException()>
      croak $eee;
    }
  }
  ++$cnt<decisionNumber>;
}
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */

```

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
# <fileName>:<description>
<decls>
<@preloop()>
LOOP<decisionNumber>:
while (1) {
  my $alt<decisionNumber> = <maxAlt>;
  <@predecision()>
  <decision>
  <@postdecision()>
  switch ($alt<decisionNumber>) {
    <alts:altSwitchCase()>
    else { last LOOP<decisionNumber> }
  }
}
<@postloop()>
>>

```



```

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)?
are translated to (x|) by before code generation
* so we can just use the normal block template
*/
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
* number. A DFA predicts the alternative and then a simple switch
* does the jump to the code that actually matches that alternative.
*/
altSwitchCase() ::= <<
case <i> {
  <@prealt(>
  <it>
}<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
# <fileName>:<description>
{
  <@declarations(>
  <elements:element(>
  <rew>
  <@cleanup(>
}
>>

/** What to emit when there is no rewrite. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
  <@prematch(>
  <it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions)

```

```

 ::= <<
 <if(label)>${label} =<endif>${self->match($self->input, <token>,
 $FOLLOW_<token>_in_<ruleName><elementIndex>);
 <checkRuleBacktrackFailure()>
 >>

 /** ids+=ID */
 tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
 <tokenRef(...)>
 <listLabel(elem=label,...)>
 >>

 listLabel(label,elem) ::= <<
 if (list_<label>==null) list_<label>=new ArrayList();
 list_<label>.add(<elem>);<\n>
 >>

 /** match a character */
 charRef(char,label) ::= <<
 <if(label)>
 <label> = $self->input->LA(1);<\n>
 <endif>
 $self->match(<char>); <checkRuleBacktrackFailure()>
 >>

 /** match a character range */
 charRangeRef(a,b,label) ::= <<
 <if(label)>
 <label> = $self->input->LA(1);<\n>
 <endif>
 $self->match_range(<a>,<b>); <checkRuleBacktrackFailure()>
 >>

 /** For now, sets are interval tests and must be tested inline */
 matchSet(s,label,elementIndex,postmatchCode="") ::= <<
 <if(label)>
 <if(LEXER)>
 <label>= $self->input->LA(1);<\n>
 <else>
 <label>=(<labelType>)input.LT(1);<\n>
 <endif>
 <endif>
 <endif>
 if
 ( <s> ) {
 $self->input->consume();
 <postmatchCode>
 <if(!LEXER)>
 $self->state->error_recovery(0);

```

```

<endif>
  <if(backtracking)>failed=false;<endif>
}
else {
  <ruleBacktrackFailure()>
  my $mse =
    ANTLR::Runtime::MismatchedSetException->new(undef, $self->input);
  <@mismatchedSetException()>
<if(LEXER)>
  $self->recover($mse);
  $mse->throw();
<else>
  $mse->throw();
  <! use following code to make it recover inline; remove throw mse;
  $self->recoverFromMismatchedSet($self->input, $mse, $FOLLOW_set_in_<ruleName><elementIndex>);
  !>
<endif>
}<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a string literal */
lexerStringRef(string,label,elementIndex) ::= <<
<if(label)>
int <label>Start = getCharIndex();
$self->match(<string>); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE,
Token.DEFAULT_CHANNEL, <label>Start, getCharIndex()-1);
<else>
$self->match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label>=<labelType>input.LT(1);<\n>
<endif>
matchAny(input); <checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>

```

```

<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = $self->input->LA(1);<\n>
<endif>
matchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
$self->push_follow($FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)>
$self-><rule.name>(<args; separator="," ">);<\n>
<else>
$self-><rule.name>(<args; separator="," ">);<\n>
<endif>
$self->state->_fsp($self->state->_fsp
- 1);
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();
$self->m_<rule>(<args; separator="," ">); <checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,

```

```

<label>Start<elementIndex>, getCharIndex()-1);
<else>
$self->m_<rule.name>(<args; separator=", ">); <checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer
*/
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();
match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, EOF, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1);
<else>
match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( input.LA(1)==Token.DOWN ) {
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction
expression).
*/
validateSemanticPredicate(pred,description) ::= <<

```

```

if ( !( <evalPredicate(...)> ) ) {
    <ruleBacktrackFailure()>
    throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
my $LA<decisionNumber>_<stateNumber> = $self->input->LA(<k>);<\n>
<edges; separator="\nls">
else {
<if(eotPredictsAlt)>
    $alt<decisionNumber> = <eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>
    my $nvae =
        ANTLR::Runtime::NoViableAltException->new({
            grammar_decision_description => "<description>",
            decision_number => <decisionNumber>,
            state_number => <stateNumber>,
            input => $self->input,
        });<\n>
    <@noViableAltException()>
    croak $nvae;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but
 * this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
my $LA<decisionNumber>_<stateNumber> = $self->input->LA(<k>);<\n>
<edges; separator="\nls">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
my $LA<decisionNumber>_<stateNumber> = $self->input->LA(<k>);<\n>

```

```

<edges; separator="\nls"><\n>
<if(eotPredictsAlt)>
<if(!edges)>
$alt<decisionNumber> = <eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
    $alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/**
    An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "$alt<decisionNumber> = <alt>;"

/** A simple edge with an expression. If the expression is satisfied,
    * enter to the target state. To handle gated productions, we may
    * have to evaluate some predicates for this edge.
    */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) {
    <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
    * decides if this is possible: CodeGenerator.canGenerateSwitch().
    */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( $self->input->LA(<k> ) ) {
    <edges; separator="\n">
    else {
    <if(eotPredictsAlt)>
        $alt<decisionNumber> = <eotPredictsAlt>;
    <else>
    <ruleBacktrackFailure()>
    my $nvae =
        ANTLR::Runtime::NoViableAltException->new({
            grammar_decision_description => "<description>",
            decision_number => <decisionNumber>,
            state_number => <stateNumber>,
            input => $self->input,
        });<\n>
    <@noViableAltException()>
    croak $nvae;<\n>

```

```

    <endif>
  }
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( $self->input->LA(<k>) ) {
  <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( $self->input->LA(<k>) ) {
  <edges; separator="\n"><\n>
  <if(eotPredictsAlt)>
  else { $alt<decisionNumber> = <eotPredictsAlt> }<\n>
  <endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
case [ <labels: { <it> }; separator=", "> ] { <targetState> }
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA
 * case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
$alt<decisionNumber> = $self->dfa<decisionNumber>->predict($self->input);
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
 * Can't use hex as compiler translates them before compilation.
 * These strings are split into multiple, concatenated strings.
 * Java puts them back together at compile time thankfully.
 * Java cannot handle large static arrays, so we're stuck with this
 * encode/decode approach. See analysis and runtime DFA for
 * the encoding methods.
 */
cyclicDFA(dfa) ::= <<
Readonly my $DFA<dfa.decisionNumber>_eot => ANTLR::Runtime::DFA->unpack_rle([
  <dfa.javaCompressedEOT; separator=", "> ]);
Readonly my $DFA<dfa.decisionNumber>_eof => ANTLR::Runtime::DFA->unpack_rle([
  <dfa.javaCompressedEOF; separator=", "> ]);

```



```

Readonly my $DFA<dfa.decisionNumber>_min => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedMin; separator=", "> ]);
Readonly
my $DFA<dfa.decisionNumber>_max => ANTLR::Runtime::DFA->unpack_rle([ <dfa.javaCompressedMax;
separator=", "> ]);
Readonly my $DFA<dfa.decisionNumber>_accept => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedAccept; separator=", "> ]);
Readonly my $DFA<dfa.decisionNumber>_special => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedSpecial; separator=", "> ]);
Readonly my $DFA<dfa.decisionNumber>_transition => [
<dfa.javaCompressedTransition:{s|ANTLR::Runtime::DFA->unpack_rle([ <s; separator=", "> ])}; separator=", "> ];

{
package <name>::DFA<dfa.decisionNumber>;
use ANTLR::Runtime::Class;

use strict;
use warnings;

extends 'ANTLR::Runtime::DFA';

sub BUILD {
my $self = shift;
my $param_ref = __PACKAGE__->unpack_params(@_, {
spec => [
{
name => 'recognizer',
isa => 'ANTLR::Runtime::BaseRecognizer'
},
]
});

$self->recognizer($param_ref->{recognizer});
$self->decision_number(<dfa.decisionNumber>);
$self->eot($DFA<dfa.decisionNumber>_eot);
$self->eof($DFA<dfa.decisionNumber>_eof);
$self->min($DFA<dfa.decisionNumber>_min);
$self->max($DFA<dfa.decisionNumber>_max);
$self->accept($DFA<dfa.decisionNumber>_accept);
$self->special($DFA<dfa.decisionNumber>_special);
$self->transition($DFA<dfa.decisionNumber>_transition);
}

sub get_description {
return "<dfa.description>";
}

<@errorMethod()>

```

```

<if(dfa.specialStateSTs)>
sub special_state_transition {
  my ($self, $param_ref) = unpack_params(@_, {
    spec => [
      {
        name => 's',
        type => SCALAR,
      },
      {
        name => 'input',
        isa => 'ANTLR::Runtime::IntStream',
      }
    ]
  });
  my $s = $param_ref->{s};
  my $input = $param_ref->{input};

  switch ($s) {
    <dfa.specialStateSTs:{state |
      case <i0> \{ <! compressed special state numbers 0..n-1 !>
        <state>;
      separator="\n">
    }
  }

<if(backtracking)>
  if ($self->state->backtracking > 0) {
    $self->state->failed = 1;
    return -1;
  }<\n>
<endif>

  my $nvae =
    ANTLR::Runtime::NoViableAltException->new({
      grammar_decision_description => $self->get_description(),
      decision_number => <dfa.decisionNumber>,
      state_number => $s,
      input => $input,
    });<\n>
    $self->error($nvae);
    $nvae->throw();
  }<\n>
<endif>
}<\n>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on

```

```

* state.
*/
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
my $input = $self->input;
my $LA<decisionNumber>_<stateNumber> = $input->LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
my $index<decisionNumber>_<stateNumber> = $input->index();
$input->rewind();<\n>
<endif>
s = -1;
<edges; separator="\nls">
<if(semPredState)> <!
return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if ( s>=0 ) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
* state to jump to next if successful.
*/
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) { s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
* always jump to the target.
*/
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left> && <right>"

orPredicates(operands) ::= "<operands; separator=\\|\\>"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "$LA<decisionNumber>_<stateNumber> eq <atom>"

```

```

/**
 Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "$self->input->LA(<k>) eq <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
($LA<decisionNumber>_<stateNumber> ge <lower> && $LA<decisionNumber>_<stateNumber> le <upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "($self->input->LA(<k>) ge
<lower> && $self->input->LA(<k>) le <upper>)"

setTest(ranges) ::= "<ranges; separator=\\\" || \\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
  <scope.attributes:{<it.decl>;}; separator= "\\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
  <scope.attributes:{<it.decl>;}; separator= "\\n">
}
protected
Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.name>_return
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

```

```

/** Generate the Java type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "undef".
 */
initValue(typeName) ::= <<
<if(typeName)>
<perlTypeInitMap.(typeName)>
<else>
undef
<endif>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
my $<label.label.text> = <initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/**
Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
{
package <returnType()>;
use ANTLR::Runtime::Class;

extends 'ANTLR::Runtime::<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope';

<scope.attributes:{public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>
}
<endif>

```

```

>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.name>}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name>
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex)
::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name> =<expr>;
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name> =<expr>;
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name> =<expr>;
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
$<scope>.<attr.name>
<else>
$<scope>
<endif>
>>

```

```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
$<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr)
::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>;
<else>
$<attr.name> =<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "$<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "$<scope>->get_text()"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>.getType()"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>.getLine()"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>.getCharPositionInLine()"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>.getChannel()"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>.getTokenIndex()"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"

ruleLabelPropertyRef_start(scope,attr) ::= "((<labelType><scope>.start)"
ruleLabelPropertyRef_stop(scope,attr) ::= "((<labelType><scope>.stop)"
ruleLabelPropertyRef_tree(scope,attr) ::= "((<ASTLabelType><scope>.tree)"
ruleLabelPropertyRef_text(scope,attr)
::= <<
<if(TREE_PARSER)>
input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
input.getTreeAdaptor().getTokenStopIndex(<scope>.start))
<else>
substr($self->input, $<scope>->start, $<scope>->stop)
<endif>
>>

```

```

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>.st"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "$<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "<scope>.getType()"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "<scope>.getLine()"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "<scope>.getCharPositionInLine()"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "<scope>.getChannel()"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "<scope>.getTokenIndex()"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "<scope>.getText()"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "((<labelType>)retval.start)"
rulePropertyRef_stop(scope,attr)
::= "((<labelType>)retval.stop)"
rulePropertyRef_tree(scope,attr) ::= "((<ASTLabelType>)retval.tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(retval.start),
input.getTreeAdaptor().getTokenStopIndex(retval.start))
<else>
input.toString(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "getText()"
lexerRulePropertyRef_type(scope,attr) ::= "$_type"
lexerRulePropertyRef_line(scope,attr) ::= "tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "$_channel"
lexerRulePropertyRef_start(scope,attr) ::= "tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(getCharIndex()-1)"
lexerRulePropertyRef_self(scope,attr)
::= "$self"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>";
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>";

/** How to execute an action */
execAction(action) ::= <<

```



```

<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if ( <actions.(actionScope).synpredgate> ) {
  <action>
}
<else>
if ( backtracking==0 ) {
  <action>
}
<endif>
<else>
<action>
<endif>
>>

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
Readonly my $<name> => ANTLR::Runtime::BitSet->new({ words64 => [ <words64:{'<it>'};separator=", "> ]
});<\n>
>>

codeFileExtension() ::= ".pm"

true() ::= "1"
false() ::= "0"

Found in path(s):
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Perl5/Perl5.stg
No license file was found, but licenses were detected in source scan.

/*
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```

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*/

```
asTypeInitMap ::= [
  "int": "0",
  "uint": "0",
  "Number": "0.0",
  "Boolean": "false",
  default: "null" // anything other than an atomic type
]

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
  docComment, recognizer,
  name, tokens, tokenNames, rules, cyclicDFAs,
  bitsets, buildTemplate, buildAST, rewriteMode, profile,
  backtracking, synpreds,
  memoize, numRules,
  fileName, ANTLRVersion, generatedTimestamp, trace,
  scopes, superClass, literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
package<if(actions.(actionScope).package)> <actions.(actionScope).package><endif> {
  <actions.(actionScope).header>
  <@imports>
import org.antlr.runtime.*;
<if(TREE_PARSER)>
  import org.antlr.runtime.tree.*;
<endif>
  <@end>

  <docComment>
  <recognizer>
}
>>

lexer(grammar, name, tokens, scopes, rules, numRules, filterMode, labelType="Token",
  superClass="Lexer") ::= <<
```

```

public class <grammar.recognizerName> extends
<if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else><@superClassName><superClass
><@end><endif> {
    <tokens:{it |public static const <it.name>:int=<it.type>;}; separator="\n">
    <scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScope(it)><endif>}>
    <actions.lexer.members>

    // delegates
    <grammar.delegates:
        {g|public var <g.delegateName():<g.recognizerName>;};
separator="\n">
    // delegators
    <grammar.delegators:
        {g|public var <g.delegateName():<g.recognizerName>;}; separator="\n">
    <last(grammar.delegators):{g|public var gParent:<g.recognizerName>;}>

    public function <grammar.recognizerName>(<grammar.delegators:{g|<g.delegateName():<g.recognizerName>,
}>input:CharStream = null, state:RecognizerSharedState = null) {
        super(input, state);
        <cyclicDFAs:cyclicDFACTOR(>
    <if(memoize)>
    <if(grammar.grammarIsRoot)>
        this.state.ruleMemo = new Array(<numRules>+1);<\n> <! index from 1..n !>
    <endif>
    <endif>
        <grammar.directDelegates:
            {g|<g.delegateName()> = new <g.recognizerName>(<trunc(g.delegators):{p|<p.delegateName()>, }>this,
input, this.state);}; separator="\n">
        <grammar.delegators:
            {g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
        <last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
    }
    public override
    function get grammarFileName():String { return "<fileName>;" }

    <if(filterMode)>
        <filteringNextToken()>
    <endif>
        <rules; separator="\n\n">

        <synpreds:{p | <lexerSynpred(p)>}>

        <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

    }
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking

```

- * for matches. No error can be generated upon error; just rewind, consume
- * a token and then try again. backtracking needs to be set as well.
- * Make rule memoization happen only at levels above 1 as we start mTokens
- * at backtracking==1.

*/

filteringNextToken() ::= <<

```
public override function nextToken():Token {
    while (true) {
        if ( input.LA(1)==CharStreamConstants.EOF ) {
            return TokenConstants.EOF_TOKEN;
        }
        this.state.token = null;
        this.state.channel = TokenConstants.DEFAULT_CHANNEL;
        this.state.tokenStartCharIndex = input.index;
        this.state.tokenStartCharPositionInLine = input.charPositionInLine;
        this.state.tokenStartLine = input.line;
        this.state.text = null;
        try {
            var m:int = input.mark();
            this.state.backtracking=1; <! means we won't throw slow exception !>
            this.state.failed=false;
            mTokens();
            this.state.backtracking=0;
            <! mTokens backtracks with synpred at backtracking==2
            and we set the synpredgate to allow actions at level 1. !>
            if ( this.state.failed ) {
                input.rewindTo(m);
                input.consume(); <! advance one char and try again !>
            }
            else {
                emit();
                return this.state.token;
            }
        }
        catch (re:RecognitionException) {
            // shouldn't happen in backtracking mode, but...
            reportError(re);
            recover(re);
        }
    }
    // Not reached - For ActionScript compiler
    throw new Error();
}
```

```
public override function memoize(input:InputStream,
    ruleIndex:int,
    ruleStartIndex:int):void
{
```

```

if
( this.state.backtracking>1 ) super.memoize(input, ruleIndex, ruleStartIndex);
}

public override function alreadyParsedRule(input:IntStream, ruleIndex:int):Boolean {
if ( this.state.backtracking>1 ) return super.alreadyParsedRule(input, ruleIndex);
return false;
}
>>

actionGate() ::= "this.state.backtracking==0"

filteringActionGate() ::= "this.state.backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
    bitsets, inputStreamType, superClass,
    labelType, members, rewriteElementType,
    filterMode, ASTLabelType="Object") ::= <<
public class <grammar.recognizerName> extends
<if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else><@superClassName><superClass>
><@end><endif> {
<if(grammar.grammarIsRoot)>
    public static const tokenNames:Array = [
        "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>",
<tokenNames; separator=", ">
    ];<\n>
<endif>
    <tokens:{it |public static const <it.name>:int=<it.type>;}; separator="\n">

    // delegates
    <grammar.delegates: {g|public var <g:delegateName():<g.recognizerName>;}; separator="\n">
    // delegators
    <grammar.delegators:
        {g|public var <g:delegateName():<g.recognizerName>;}; separator="\n">
    <last(grammar.delegators):{g|public var gParent:<g.recognizerName>;}>

    <scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScope(it)><endif>>
    <@members>
    <! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
    public function <grammar.recognizerName>(<grammar.delegators:{g|<g:delegateName():<g.recognizerName>,
}>input:<inputStreamType>, state:RecognizerSharedState = null) {
        super(input, state);
        <cyclicDFAs:cyclicDFACtor()>
        <parserCtorBody()>
        <grammar.directDelegates:
            {g|<g:delegateName()> = new <g.recognizerName>(<trunc(g.delegators):{p|<p:delegateName()>,

```

```

    }>this, input, this.state);}; separator="\n">
    <grammar.indirectDelegates:{g | <g:delegateName()> = <g.delegator.delegateName()>.<g:delegateName()>;}
separator="\n">
    <last(grammar.delegators):{g|gParent = <g:delegateName()>;}>
    }
    <@end>

    public override function get tokenNames():Array { return
<grammar.composite.rootGrammar.recognizerName>.tokenNames; }
    public override function get grammarFileName():String { return "<fileName>"; }

    <members>

    <rules; separator="\n\n">

    <! generate rule/method definitions for imported rules so they
    appear to be defined in this recognizer. !>
    // Delegated rules
    <grammar.delegatedRules:{ruleDescriptor|
    public function <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope()>):<returnType()> {
<if(ruleDescriptor.hasReturnValue)>return
<endif><ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attribut
es:{a|<a.name>; separator=", ">}; separator="\n">
    \}); separator="\n">

    <synpreds:{p | <synpred(p)>>>

    <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

    <bitsets:{it | <bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
    words64=it.bits)>>>
    }
    >>

    parserCtorBody() ::= <<
    <if(memoize)>
    <if(grammar.grammarIsRoot)>
    this.state.ruleMemo = new Array(<length(grammar.allImportedRules)>+1);<\n> <! index from 1..n !>
    <endif>
    <endif>
    <grammar.delegators:
    {g|this.<g:delegateName()> = <g:delegateName()>;}; separator="\n">
    >>

    parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType="Object",
    superClass="Parser", labelType="Token", members={<actions.parser.members>}) ::= <<
    <genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
    bitsets, "TokenStream", superClass,

```

```

        labelType, members, "Token",
        false, ASTLabelType)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different
 * type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
            numRules, bitsets, filterMode, labelType={<ASTLabelType>}, ASTLabelType="Object",
            superClass="TreeParser", members={<actions.treeparser.members>}) ::= <<
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
                bitsets, "TreeNodeStream", superClass,
                labelType, members, "Node",
                filterMode, ASTLabelType)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
public
final function <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope()>):void {
    <ruleLabelDefs()>
<if(trace)>
    traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
    try {
        <block>
    }
    finally {
        traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
    }
<else>
    <block>
<endif>
}
// $ANTLR end <ruleName>
>>

synpred(name) ::= <<
public final function <name>():Boolean {
    this.state.backtracking++;

```

```

<@start(>
var start:int = input.mark();
try {
    <name>_fragment(); // can never throw exception
} catch (re:RecognitionException) {
    trace("impossible: "+re);
}
var success:Boolean = !this.state.failed;
input.rewindTo(start);
<@stop(>
this.state.backtracking--;
this.state.failed=false;
return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ( this.state.backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index> )
    { return <ruleReturnValue(>; }
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (this.state.failed) return <ruleReturnValue(>;<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (this.state.backtracking>0) {this.state.failed=true; return <ruleReturnValue(>;}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
// $ANTLR start <ruleName>
// <fileName>:<description>
public final function <ruleName>(<ruleDescriptor.parameterScope:parameterScope(>):<returnType(> {
    <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
    <ruleScopeSetUp(>
    <ruleDeclarations(>

```



```

<ruleLabelDefs()>
<ruleDescriptor.actions.init>
<@preamble()>
try {
  <ruleMemoization(name=ruleName)>
  <block>
  <ruleCleanUp()>
  <(ruleDescriptor.actions.after):execAction()>
}
<if(exceptions)>
  <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n}>>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
  <actions.(actionScope).rulecatch>
<else>
  catch (re:RecognitionException) {
    reportError(re);
    recoverStream(input,re);
    <@setErrorReturnValue()>
  }<\n>
<endif>
<endif>
<endif>
  finally {
    <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
    <memoize()>
    <ruleScopeCleanUp()>
    <finally>
  }
  <@postamble()>
  return <ruleReturnValue()>;
}
// $ANTLR end <ruleName>
>>

```

```

catch(decl,action) ::= <<
catch (<e.decl>) {
  <e.action>
}
>>

```

```

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
var retval:<returnType()> = new <returnType()>();
retval.start = input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes: {

```

```

a |
var <a.name>:<a.type> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
var <ruleDescriptor.name>_startIndex:int = input.index;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{it |<it>_stack.push(new Object());}; separator="\n">
<ruleDescriptor.ruleScope:{it |<it.name>_stack.push(new Object());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{it |<it>_stack.pop();}; separator="\n">
<ruleDescriptor.ruleScope:{it |<it.name>_stack.pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {it |var <it.label.text>:<labelType>=null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: {it |var list_<it.label.text>:Array=null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef();
separator="\n">
<ruleDescriptor.ruleListLabels:{ll|var <ll.label.text>:RuleReturnScope = null;}; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it |var <it.label.text>:<labelType>=null;}; separator="\n"
>
<ruleDescriptor.charLabels:{it |var <it.label.text>:int;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {it |var list_<it.label.text>:Array=null;}; separator="\n"
>
>>

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>

```

```

<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
%>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop = input.LT(-1);<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if ( this.state.backtracking>0 ) { memoize(input,
<ruleDescriptor.index>, <ruleDescriptor.name>_startIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start <ruleName>
public final function m<ruleName>(<ruleDescriptor.parameterScope:parameterScope()>):void {
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
try {
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block><\n>
<else>
var _type:int = <ruleName>;
var _channel:int = DEFAULT_TOKEN_CHANNEL;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>

```

```

    <ruleCleanUp()>
    this.state.type = _type;
    this.state.channel = _channel;
    <(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally {
    <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
    <ruleScopeCleanUp()>
    <memoize()>
}
}
// $ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
public override function mTokens():void {
    <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var alt<decisionNumber>:int=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>) {
    <alts:{a | <altSwitchCase(i, a)>}>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var
    alt<decisionNumber>:int=<maxAlt>;
<decls>
<@predecision()>

```

```

<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
  <alts:{ a | <altSwitchCase(i, a)>}>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var cnt<decisionNumber>:int=0;
<decls>
<@preloop()>
loop<decisionNumber>:
do {
  var alt<decisionNumber>:int=<maxAlt>;
  <@predecision()>
  <decision>
  <@postdecision()>
  switch (alt<decisionNumber>)
  {
  <alts:{ a | <altSwitchCase(i, a)>}>
  default :
    if ( cnt<decisionNumber> >= 1 ) break loop<decisionNumber>;
    <ruleBacktrackFailure()>
    throw new EarlyExitException(<decisionNumber>, input);
    <! Need to add support for earlyExitException debug hook !>
  }
  cnt<decisionNumber>++;
} while (true);

```

```

<@postloop()>
>>

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// <fileName>:<description>
<decls>
<@preloop()>
loop<decisionNumber>:
do {
    var alt<decisionNumber>:int=<maxAlt>;
    <@predecision()>
    <decision>
    <@postdecision()>
    switch (alt<decisionNumber>) {
<alts:{a | <altSwitchCase(i, a)>}>
    default :
        break loop<decisionNumber>;
    }
} while (true);
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x)
by before code generation
* so we can just use the normal block template
*/
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
* number. A DFA predicts the alternative and then a simple switch
* does the jump to the code that actually matches that alternative.
*/
altSwitchCase(altNum, alt) ::= <<
case <altNum> :
    <@prealt()>
    <alt>
    break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */

```

```

alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(e) ::= <<
<@prematch()>
<e.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions)
::= <<
<if(label)><label>=<labelType><(<endif>matchStream(input,<token>,FOLLOW_<token>_in_<ruleName><element
Index>)<if(label)><endif>; <checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(token,label,elementIndex,terminalOptions)>
<listLabel(label, label)>
>>

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new Array();
list_<label>.push(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
match(<char>); <checkRuleBacktrackFailure()>
>>

```

```

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
matchRange(<a>,<b>); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,terminalOptions,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>
<else>
<label>=<labelType>(input.LT(1));<\n>
<endif>
<endif>
if
( <s> ) {
input.consume();
<postmatchCode>
<if(!LEXER)>
this.state.errorRecovery=false;
<endif>
<if(backtracking)>this.state.failed=false;<endif>
}
else {
<ruleBacktrackFailure()>
<@mismatchedSetException()>
<if(LEXER)>
throw recover(new MismatchedSetException(null,input));<\n>
<else>
throw new MismatchedSetException(null,input);
<! use following code to make it recover inline; remove throw mse;
recoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
!>
<endif>
}<\n>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(label, label)>
>>

```



```

/** Match a string literal */
lexerStringRef(string,label,elementIndex="0") ::= <<
<if(label)>
var <label>Start:int = charIndex;
matchString(<string>); <checkRuleBacktrackFailure()>
var <label>StartLine<elementIndex>:int = line;
var <label>StartCharPos<elementIndex>:int =
charPositionInLine;
<label> = CommonToken.createFromStream(input, TokenConstants.INVALID_TOKEN_TYPE,
TokenConstants.DEFAULT_CHANNEL, <label>Start, charIndex-1);
<label>.line = <label>StartLine<elementIndex>;
<label>.charPositionInLine = <label>StartCharPos<elementIndex>;
<else>
matchString(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(token,label,elementIndex,terminalOptions) ::= <<
<if(label)>
<label>=<labelType>(input.LT(1));<\n>
<endif>
matchAny(input); <checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<wildcard(...)>
<listLabel(label, label)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
matchAny(); <checkRuleBacktrackFailure()>
>>

```

```

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(label, elementIndex)>
<listLabel(label, label)>
>>

```

```

/** Match a rule reference by invoking it possibly with arguments
* and a return value
or values. The 'rule' argument was the
* target rule name, but now is type Rule, whose toString is
* same: the rule name. Now though you can access full rule
* descriptor stuff.

```

```

*
* GMS: Note: do not use post-decrement operator! ASC produces bad code for exceptions in this case.
* See: https://bugs.adobe.com/jira/browse/ASC-3625
*/
ruleRef(rule,label,elementIndex,args,scope) ::= <<
pushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope:delegateName().<endif><rule.name>(<args; separator=", ">);<\n>
state._fsp = state._fsp - 1;
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(rule,label,elementIndex,args,scope)>
<listLabel(label, label)>
>>

/** A lexer rule reference.
*
* The 'rule' argument was the target rule name, but now
* is type Rule, whose toString is same: the rule name.
* Now though you can access full rule descriptor stuff.
*/
lexerRuleRef(rule,label,args,elementIndex,scope)
::= <<
<if(label)>
var <label>Start<elementIndex>:int = charIndex;
var <label>StartLine<elementIndex>:int = line;
var <label>StartCharPos<elementIndex>:int = charPositionInLine;
<if(scope)><scope:delegateName().<endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<label> = CommonToken.createFromStream(input, TokenConstants.INVALID_TOKEN_TYPE,
TokenConstants.DEFAULT_CHANNEL, <label>Start<elementIndex>, charIndex-1);
<label>.line = <label>StartLine<elementIndex>;
<label>.charPositionInLine = <label>StartCharPos<elementIndex>;
<else>
<if(scope)><scope:delegateName().<endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(rule,label,args,elementIndex,scope)>
<listLabel(label, label)>
>>

```

```

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
var <label>Start<elementIndex>:int
= charIndex;
var <label>StartLine<elementIndex>:int = line;
var <label>StartCharPos<elementIndex>:int = charPositionInLine;
match(EOF); <checkRuleBacktrackFailure()>
var <label>:<labelType> = CommonToken.createFromStream(input, EOF,
TokenConstants.DEFAULT_CHANNEL, <label>Start<elementIndex>, charIndex-1);
<label>.line = <label>StartLine<elementIndex>;
<label>.charPositionInLine = <label>StartCharPos<elementIndex>;
<else>
match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "var <recRuleArg()>:int"
recRuleArg()            ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> |<= <opPrec>"
recRuleSetResultAction() ::= "root_0=$<ruleName>_primary.tree;"
recRuleSetReturnAction(src,name)    ::= "$<name>=$<src>.<name>;"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::=
<<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( input.LA(1)==TokenConstants.DOWN ) {
matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
}
<else>
matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if ( !(<evalPredicate(pred,description)>) ) {

```

```

    <ruleBacktrackFailure()>
    throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(<k>);<\n>
<edges;
separator="\nelse ">
else {
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>
    throw new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
    <! Need to add hook for noViableAltException() !>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so
that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
    alt<decisionNumber>=<eotPredictsAlt>;

```

```

}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>";

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) {
    <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated.
 * The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( input.LA(<k>) ) {
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>
    throw new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
    <! Need to add hook for noViableAltException !>
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( input.LA(<k>) ) {
    <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( input.LA(<k>) ) {
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>

```

```

default:
    alt<decisionNumber>=<eotPredictsAlt>;
    break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{it |case <it>:}; separator="\n">
    {
    <targetState>
    }
    break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = dfa<decisionNumber>.predict(input);
>>

cyclicDFActor(dfa) ::= <<

dfa<dfa.decisionNumber> = new DFA(this, <dfa.decisionNumber>,
    "<dfa.description>",
    DFA<dfa.decisionNumber>_eot, DFA<dfa.decisionNumber>_eof, DFA<dfa.decisionNumber>_min,
    DFA<dfa.decisionNumber>_max, DFA<dfa.decisionNumber>_accept, DFA<dfa.decisionNumber>_special,
    DFA<dfa.decisionNumber>_transition<if(dfa.specialStateSTs)>,
    DFA<dfa.decisionNumber>_specialStateTransition<endif>);

>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
 * Can't use hex as compiler translates them before compilation.
 * These strings are split into multiple,
 * concatenated strings.
 * Java puts them back together at compile time thankfully.
 * Java cannot handle large static arrays, so we're stuck with this
 * encode/decode approach. See analysis and runtime DFA for
 * the encoding methods.
 */
cyclicDFA(dfa) ::= <<

private const DFA<dfa.decisionNumber>_eot:Array =
    DFA.unpackEncodedString("<dfa.javaCompressedEOT; wrap=\"\"+\n \>");

```

```

private const DFA<dfa.decisionNumber>_eof:Array =
    DFA.unpackEncodedString("<dfa.javaCompressedEOF; wrap=\"\"+\n  \>");
private const DFA<dfa.decisionNumber>_min:Array =
    DFA.unpackEncodedString("<dfa.javaCompressedMin; wrap=\"\"+\n  \>", true);
private const DFA<dfa.decisionNumber>_max:Array =
    DFA.unpackEncodedString("<dfa.javaCompressedMax; wrap=\"\"+\n  \>", true);
private const DFA<dfa.decisionNumber>_accept:Array =
    DFA.unpackEncodedString("<dfa.javaCompressedAccept; wrap=\"\"+\n  \>");
private const DFA<dfa.decisionNumber>_special:Array =
    DFA.unpackEncodedString("<dfa.javaCompressedSpecial;
wrap=\"\"+\n  \>");
private const DFA<dfa.decisionNumber>_transition:Array = [
    <dfa.javaCompressedTransition: {s|DFA.unpackEncodedString("<s; wrap=\"\"+\n\>")}; separator=",\n">
];
<if(dfa.specialStateSTs)>
    private function DFA<dfa.decisionNumber>_specialStateTransition(dfa:DFA, s:int, _input:InputStream):int {
        <if(LEXER)>
            var input:InputStream = _input;
        <endif>
        <if(PARSER)>
            var input:TokenStream = TokenStream(_input);
        <endif>
        <if(TREE_PARSER)>
            var input:TreeNodeStream = TreeNodeStream(_input);
        <endif>
        var _s:int = s;
        switch ( s ) {
            <dfa.specialStateSTs: {state |
            case <i0> : <! compressed special state numbers 0..n-1 !>
                <state>}; separator="\n">
            }
        <if(backtracking)>
            if (this.state.backtracking>0) {this.state.failed=true; return -1;}<\n>
        <endif>
        throw dfa.error(new NoViableAltException(dfa.description, <dfa.decisionNumber>,
        _s, input));
    }<\n>
    <endif>

protected var dfa<dfa.decisionNumber>:DFA; // initialized in constructor

>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(1);<\n>

```

```

<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
var index<decisionNumber>_<stateNumber>:int = input.index;
input.rewind();<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if ( s>=0 ) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) { s = <targetStateNumber>;}<\n>
>>

/**
 * An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands) ::= "<operands; separator=\"||\">"

notPredicate(pred) ::= "!(<evalPredicate(pred,{}>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>===<atomAsInt>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atomAsInt>"

```



```

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
(LA<decisionNumber>_<stateNumber> >= <lowerAsInt> && LA<decisionNumber>_<stateNumber> \<=
<upperAsInt>)
%>

```

```

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt)
::= "(input.LA(<k>) >= <lowerAsInt> && input.LA(<k>) \<= <upperAsInt>)"

```

```

setTest(ranges) ::= <<
<ranges; separator="||">
>>

```

// A T T R I B U T E S

```

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected var <scope.name>_stack:Array = new Array();<\n>
<endif>
>>

```

```

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected var <scope.name>_stack:Array = new Array();<\n>
<endif>
>>

```

```

returnStructName() ::= "<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope"

```

```

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

```

```

/** Generate the Java type associated with a single or multiple return
* values.
*/

```

```

ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<returnStructName()>
<else>
<if(referencedRule.hasSingleReturnValue)>

```

```

<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName(d)
::= <<
<if(d.label)><d.label><else>g<d.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<asTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
var <label.label.text>:<ruleLabelType(referencedRule=label.referencedRule)> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public static class <returnType()> extends <if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope {
  <scope.attributes:{it |public <it.decl>;}; separator="\n">
  <@ruleReturnMembers()>
};
<endif>
>>

parameterScope(scope)
::= <<
<scope.attributes:{it |<it.name>:<it.type>}; separator=" , ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>

```

```

<scope>_stack[<scope>_stack.length-<negIndex>-1].<attr.name>
<else>
<if(index)>
<scope>_stack[<index>].<attr.name>
<else>
<scope>_stack[<scope>_stack.length-1].<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
<scope>_stack[<scope>_stack.length-<negIndex>-1].<attr.name> =<expr>;
<else>
<if(index)>
<scope>_stack[<index>].<attr.name> =<expr>;
<else>
<scope>_stack[<scope>_stack.length-1].<attr.name> =<expr>;
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope)
::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?<scope>.values.<attr.name>:<initValue(attr.type)>)
<else>
<scope>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.values.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>

```

```

retval.values.<attr.name> =<expr>;
<else>
<attr.name> =<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(<scope>!=null?<scope>.text:null)"
tokenLabelPropertyRef_type(scope,attr) ::= "(<scope>!=null?<scope>.type:0)"
tokenLabelPropertyRef_line(scope,attr)
::= "(<scope>!=null?<scope>.line:0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(<scope>!=null?<scope>.charPositionInLine:0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "(<scope>!=null?<scope>.channel:0)"
tokenLabelPropertyRef_index(scope,attr) ::= "(<scope>!=null?<scope>.tokenIndex:0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(<scope>!=null?int(<scope>.text):0)"

ruleLabelPropertyRef_start(scope,attr) ::= "(<scope>!=null?<labelType>(<scope>.start):null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "(<scope>!=null?<labelType>(<scope>.stop):null)"
ruleLabelPropertyRef_tree(scope,attr) ::= "(<scope>!=null?<ASTLabelType>(<scope>.tree):null)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(<scope>!=null?(input.tokenStream.toStringWithRange(
input.treeAdaptor.getTokenStartIndex(<scope>.start),
input.treeAdaptor.getTokenStopIndex(<scope>.start))):null)
<else>
(<scope>!=null?input.toStringWithTokenRange(<scope>.start,<scope>.stop):null)
<endif>
>>

ruleLabelPropertyRef_st(scope,attr)
::= "(<scope>!=null?<scope>.st:null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
"(<scope>!=null?<scope>.type:0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::=
"(<scope>!=null?<scope>.lien:0)"

```

```

lexerRuleLabelPropertyRef_pos(scope,attr) ::=
    "<scope>!=null?<scope>.charPositionInLine:0)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::=
    "<scope>!=null?<scope>.channel:0)"
lexerRuleLabelPropertyRef_index(scope,attr) ::=
    "<scope>!=null?<scope>.tokenIndex:0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::=
    "<scope>!=null?<scope>.text:null)"
lexerRuleLabelPropertyRef_int(scope,attr) ::=
    "<scope>!=null?int(<scope>.text):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "<labelType>(retval.start)"
rulePropertyRef_stop(scope,attr) ::= "<labelType>(retval.stop)"
rulePropertyRef_tree(scope,attr)
    ::= "<ASTLabelType>(retval.tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.tokenStream.toStringWithRange(
    input.treeAdaptor.getTokenStartIndex(retval.start),
    input.treeAdaptor.getTokenStopIndex(retval.start))
<else>
input.toStringWithTokenRange(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(charIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int(<scope>.text)"

// setting $st
and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>;"

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {
    <action>

```

```

}
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static const <name>:BitSet = new BitSet([<words64:{it |<it>};separator=", ">]);<\n>
>>

codeFileExtension() ::= ".as"

true_value() ::= "true"
false_value() ::= "false"

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/ActionScript/ActionScript.stg
No license file was found, but licenses were detected in source scan.

```

/*

[The "BSD license"]

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*/

```
scalaTypeInitMap ::= [  
  "Int":"0",  
  "Long":"0",  
  "Float":"0.0f",  
  "Double":"0.0",  
  "Boolean":"false",  
  "Byte":"0",  
  "Short":"0",  
  "Char":"0",  
  default:"null" // anything other than an atomic type  
]
```

```
/** The overall file structure of a recognizer; stores methods for rules  
 * and cyclic DFAs plus support code.
```

```
*/
```

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,  
  docComment, recognizer,  
  name, tokens, tokenNames, rules, cyclicDFAs,  
  
  bitsets, buildTemplate, buildAST, rewriteMode, profile,  
  backtracking, synpreds, memoize, numRules,  
  fileName, ANTLRVersion, generatedTimestamp, trace,  
  scopes, superClass, literals) ::=
```

```
<<
```

```
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>  
<actions.(actionScope).header>
```

```
<@imports>
```

```
import org antlr.runtime._
```

```
<if(TREE_PARSER)>
```

```
import org antlr.runtime.tree._
```

```
<endif>
```

```
<@end>
```

```
<docComment>
```

```
<recognizer>
```

```
>>
```

```
lexer(grammar, name, tokens, scopes, rules, numRules, filterMode, labelType="CommonToken",  
  superClass="Lexer") ::= <<
```

```
object <grammar.recognizerName> {
```

```

<tokens:{it | val <it.name> = <it.type>}; separator="\n">

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
}

class <grammar.recognizerName>(input: CharStream, state<grammar.delegates:{g|, <g.recognizerName>
<g:delegateName()>>: RecognizerSharedState) extends <@superClassName><superClass><@end>(input,
state<grammar.delegates:{g|, <g.recognizerName> <g:delegateName()>>}) {
  import <grammar.recognizerName>._
  <actions.lexer.members>

  // delegates
  <grammar.delegates:
    {g|<g.recognizerName> <g:delegateName()>}; separator="\n">
  // delegators
  <grammar.delegates:
    {g|<g.recognizerName> <g:delegateName()>}; separator="\n">
  <last(grammar.delegates):{g|public <g.recognizerName> gParent;}>

  <scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScope()><endif>}>

  def this(input<grammar.delegates:{g|, <g.recognizerName> <g:delegateName()>>: CharStream) =
    this(input, new RecognizerSharedState()<grammar.delegates:{g|, <g:delegateName()>>})

  <if(memoize)>
  <if(grammar.grammarIsRoot)>
    state.ruleMemo = new Array[java.util.Map[_,_]](<numRules>+1)<\n> <! index from 1..n !>
  <endif>
  <endif>

  <grammar.directDelegates:
    {g|<g:delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegates):{p|,
  <p:delegateName()>>, this)}; separator="\n">
  <grammar.delegates:
    {g|this.<g:delegateName()>
  = <g:delegateName()>}; separator="\n">
    <last(grammar.delegates):{g|gParent = <g:delegateName()>}>

  override def getGrammarFileName = "<fileName>"

  <if(filterMode)>
  <filteringNextToken()>
  <endif>
  <rules; separator="\n\n">

  <synpreds:{p | <lexerSynpred(p)>}>
  <cyclicDFAs:{dfa | private val dfa<dfa.decisionNumber> = new
  <grammar.recognizerName>.DFA<dfa.decisionNumber>(this)}; separator="\n">
}

```


>>

```
/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
```

```
filteringNextToken() ::= <<
override def nextToken(): Token = {
  while (true) {
    if ( input.LA(1)==CharStream.EOF ) {
      var eof: Token = new CommonToken((CharStream)input,Token.EOF,

Token.DEFAULT_CHANNEL,
      input.index(),input.index())
      eof.setLine(getLine())
      eof.setCharPositionInLine(getCharPositionInLine())
      return eof
    }
    state.token = null
state.channel = Token.DEFAULT_CHANNEL
    state.tokenStartCharIndex = input.index()
    state.tokenStartCharPositionInLine = input.getCharPositionInLine()
    state.tokenStartLine = input.getLine()
state.text = null
    try {
      val m = input.mark()
      state.backtracking=1 <! means we won't throw slow exception !>
      state.failed=false
      mTokens()
      state.backtracking=0
      <! mTokens backtracks with synpred at backtracking==2
      and we set the synpredgate to allow actions at level 1. !>
      if ( state.failed ) {
        input.rewind(m)
        input.consume() <! advance one char and try again !>
      }
    }
    else
  {
    emit()
    return state.token
  }
}
catch {
  case re: RecognitionException =>
    // shouldn't happen in backtracking mode, but...
    reportError(re)
```

```

        recover(re)
    }
}

override def memoize(input: IntStream,
    ruleIndex: Int,
    ruleStartIndex: Int) = {
if ( state.backtracking>1 ) super.memoize(input, ruleIndex, ruleStartIndex)
}

override def alreadyParsedRule(input: IntStream, ruleIndex: Int):Boolean {
if ( state.backtracking>1 ) return super.alreadyParsedRule(input, ruleIndex)
return false
}
>>

actionGate() ::= "state.backtracking==0"

filteringActionGate() ::= "state.backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
    bitsets, inputStreamType, superClass,
    labelType, members, rewriteElementType,
    filterMode, ASTLabelType="Object") ::= <<
object <grammar.recognizerName>
{
<if(grammar.grammarIsRoot)>
    val tokenNames = Array(
        "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator="," >
    )<\n>
<endif>

    <tokens:{it | val <it.name> = <it.type>}; separator="\n">

    <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

    <bitsets:{it | <bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
        words64=it.bits)>>
}

class <grammar.recognizerName>(input: <inputStreamType>, state<grammar.delegators:{g|, <g.recognizerName>
<g:delegateName()>}>: RecognizerSharedState) extends <@superClassName><superClass><@end>(input, state) {
import <grammar.recognizerName>._
// delegates
<grammar.delegates:
    {g|public <g.recognizerName> <g:delegateName()>}; separator="\n">

```

```

// delegators
<grammar.delegators:
  {g|public <g.recognizerName> <g.delegateName(>}; separator="\n">
<last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScope(><endif>>}>

<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
def this(input<grammar.delegators: {g|, <g.recognizerName> <g.delegateName(>}: <inputStreamType>) =
  this(input, new RecognizerSharedState(<grammar.delegators: {g|, <g.delegateName(>}>))

  <parserCtorBody(>
  <grammar.directDelegates:
    {g|<g.delegateName(> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|,
<p.delegateName(>}>}, this); separator="\n">
    <grammar.indirectDelegates: {g | <g.delegateName(> = <g.delegator.delegateName(>.<g.delegateName(>};
separator="\n">
    <last(grammar.delegators):{g|gParent = <g.delegateName(>}>
  <@end>

  override def getTokenNames: Array[String] = tokenNames
  override def getGrammarFileName = "<fileName>"

  <members>

  <rules; separator="\n\n">

  <! generate rule/method definitions for imported rules so they
  appear to be defined in this recognizer. !>
  // Delegated rules
  <grammar.delegatedRules: {ruleDescriptor|
    @throws(classOf[RecognitionException])
    def <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(>): <returnType(>) = \{
  <if(ruleDescriptor.hasReturnValue)>return
  <endif><ruleDescriptor.grammar:delegateName(>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes: {a|<a.name>}; separator=", ">) \}); separator="\n">

  <synpreds: {p | <synpred(p)>}>

  <cyclicDFAs: {dfa | private val dfa<dfa.decisionNumber> = new
  <grammar.recognizerName>.DFA<dfa.decisionNumber>(this); separator="\n">
  }
  >>

  parserCtorBody() ::= <<
  <if(memoize)>
  <if(grammar.grammarIsRoot)>

```

```

this.state.ruleMemo = new Array[java.util.Map[_,_]](<length(grammar.allImportedRules)+1)<\n> <! index from
1..n !>
<endif>
<endif>
<grammar.delegators:
{g|this.<g:delegateName()> = <g:delegateName()>; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
  ASTLabelType="Object", superClass="Parser",
  labelType="Token",
  members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="TokenStream", rewriteElementType="Token", ...)>
>>

/** How to generate a tree parser; same as parser except the input
* stream is a different type.
*/
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
  numRules, bitsets, filterMode, labelType={<ASTLabelType>}, ASTLabelType="Object",
superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif>},
members={<actions.treeparser.members>}
) ::= <<
<genericParser(inputStreamType="TreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
* rules created for syntactic predicates. As they never have return values
* nor parameters etc..., just give simplest possible method. Don't do
* any of the normal memoization stuff in here either; it's a waste.
* As predicates cannot be inlined into the invoking rule, they need to
* be in a rule by themselves.
*/
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
@throws(classOf[RecognitionException])
def <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope()>): Unit = {
  <ruleLabelDefs()>
<if(trace)>
  traceIn("<ruleName>_fragment", <ruleDescriptor.index>)
  try {
    <block>
  }
  finally {
    traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
  }
<else>

```

```

    <block>
<endif>
}
// $ANTLR end <ruleName>
>>

synpred(name) ::= <<
final def <name>(): Boolean = {
    state.backtracking+=1
    <@start()>
    val start = input.mark()
    try {
        <name>_fragment() // can never throw exception
    } catch {
        case re: RecognitionException =>
            System.err.println("impossible: "+re)
    }
    val success = !state.failed
    input.rewind(start)
    <@stop()>
    state.backtracking-=1
    state.failed=false
    success
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ( state.backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index> ) ) { return <ruleReturnValue()> }
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (state.failed) return <ruleReturnValue()><endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking>0) { state.failed=true; return <ruleReturnValue()>}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.

```

```

*/
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
// <fileName>:<description>
@throws(classOf[RecognitionException])
final
def <ruleName>(<ruleDescriptor.parameterScope:parameterScope()): <returnType()> = {
  <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>)<endif>
  <ruleScopeSetUp()>
  <ruleDeclarations()>
  <ruleLabelDefs()>
  <ruleDescriptor.actions.init>
  <@preamble()>
  try {
    <ruleMemoization(name=ruleName)>
    <block>
    <ruleCleanUp()>
    <(ruleDescriptor.actions.after):execAction()>
  }
  <if(exceptions)>
    <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
  <else>
  <if(!emptyRule)>
  <if(actions.(actionScope).rulecatch)>
    <actions.(actionScope).rulecatch>
  <else>
    catch {
      case re: RecognitionException =>
        reportError(re)
        recover(input,re)
  <@setErrorReturnValue()>
    }<\n>
  <endif>
  <endif>
  <endif>
  finally {
    <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
    <memoize()>
    <ruleScopeCleanUp()>
    <finally>
  }
  <@postamble()>

  return <ruleReturnValue()>
}

```

```

// $ANTLR end "<ruleName>"
>>

catch(decl,action) ::= <<
catch (<e.decl>) {
    <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
val retval = new <returnType>()
retval.start = input.LT(1)<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
var <a.name>: <a.type> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>
}>
<endif>
<if(memoize)>
val <ruleDescriptor.name>_startIndex = input.index()
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: { it | <it>_stack.push(new <it>_scope()); separator="\n">
<ruleDescriptor.ruleScope: { it | <it.name>_stack.push(new <it.name>_scope()); separator="\n">
>>

ruleScopeCleanup() ::= <<
<ruleDescriptor.useScopes: { it | <it>_stack.pop(); separator="\n">
<ruleDescriptor.ruleScope: { it | <it.name>_stack.pop(); separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: { it | var <it.label.text>: <labelType> = null }; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: { it | var list_<it.label.text>: java.util.List=null }; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
<ruleDescriptor.ruleListLabels: { ll|var <ll.label.text>: RuleReturnScope = null }; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,

```

```

ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it | var <it.label.text>: <labelType>=null}; separator="\n"
>
<ruleDescriptor.charLabels: {it | int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {it | var list_<it.label.text>: java.util.List=null}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
>>

ruleCleanUp()
::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop = input.LT(-1)<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if ( state.backtracking>0 ) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex) }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
@throws(classOf[RecognitionException])
final def m<ruleName>(<ruleDescriptor.parameterScope:parameterScope()): Unit = {
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>)<endif>

```



```

<ruleScopeSetUp()>
<ruleDeclarations()>
try {
<if(nakedBlock)>
  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  try <block><\n>
<else>
  var _type = <ruleName>

  var _channel = BaseRecognizer.DEFAULT_TOKEN_CHANNEL
  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  try <block>
  <ruleCleanUp()>
  state.`type` = _type
  state.channel = _channel
  <(ruleDescriptor.actions.after):execAction()>
<endif>
  }
  finally {
    <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>)<endif>
    <ruleScopeCleanUp()>
    <memoize()>
  }
}
// $ANTLR end "<ruleName>"
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
@throws(classOf[RecognitionException])
def mTokens(): Unit = {
  <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var alt<decisionNumber>

```

```

= <maxAlt>
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
alt<decisionNumber> match {
  <alts:{a | <altSwitchCase(i,a)>}>
  case _ =>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var alt<decisionNumber> = <maxAlt>
<decls>
<@predecision()>
<decision>
<@postdecision()>
alt<decisionNumber> match {
  <alts:{a | <altSwitchCase(i,a)>}>
  case _ =>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives
*/
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

```

```

// <fileName>:<description>
var cnt<decisionNumber>: Int = 0
<decls>
<@preloop()>
var loop<decisionNumber>_quitflag = false
while (!loop<decisionNumber>_quitflag) {
  var alt<decisionNumber>:Int = <maxAlt>
  <@predecision()>
  <decision>
  <@postdecision()>
  alt<decisionNumber> match {
    <alts:{a | <altSwitchCase(i,a)>}>
  }
case _ =>
  if ( cnt<decisionNumber> >= 1 ) loop<decisionNumber>_quitflag = true
  else {
    <ruleBacktrackFailure()>
    val eee = new EarlyExitException(<decisionNumber>, input)
    <@earlyExitException()>
    throw eee
  }
}
cnt<decisionNumber>+=1
}
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=

<<

//

```

<fileName>:<description>
<decls>
<@preloop()>
var loop<decisionNumber>_quitflag = false
while (!loop<decisionNumber>_quitflag) {
  var alt<decisionNumber>:Int = <maxAlt>
  <@predecision()>
  <decision>
  <@postdecision()>
  alt<decisionNumber> match {
    <alts:{a | <altSwitchCase(i,a)>}>
  }
case _ => loop<decisionNumber>_quitflag = true
}
}
<@postloop()>
>>

```

```

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum, alt) ::= <<
case <altNum> =>
  <@prealt()>
  <alt>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew)
 ::= <<
// <fileName>:<description>
{
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(e) ::= <<
<@prematch()>
<e.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<if(label)><label>=<endif>`match`(input,<token>,FOLLOW_<token>_in_<ruleName><elementIndex>)<if(label)>

```

```

.asInstanceOf[<labelType>]<endif>
<checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new java.util.ArrayList()
list_<label>.add(<elem>)<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1)<\n>
<endif>
`match`(<char>)
<checkRuleBacktrackFailure()>
>>

/**
match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1)<\n>
<endif>
matchRange(<a>,<b>); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,terminalOptions,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1)<\n>
<else>
<label>=input.LT(1).asInstanceOf[<labelType>]<\n>
<endif>
<endif>
if ( <s> ) {
input.consume()
<postmatchCode>
<if(!LEXER)>
state.errorRecovery=false<\n>
<endif>

```

```

    <if(backtracking)>state.failed=false<endif>
}
else {
    <ruleBacktrackFailure()>
    val mse = new MismatchedSetException(null,input)
    <@mismatchedSetException()>
<if(LEXER)>
    recover(mse)
    throw mse
<else>
    throw mse
    <! use following code to make it recover inline; remove throw mse;
    recoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>)
    !>
<endif>
}<\n>
>>

matchRuleBlockSet
::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label,elementIndex="0") ::= <<
<if(label)>
val <label>Start = getCharIndex()
`match`(<string>)
<checkRuleBacktrackFailure()>
val <label>StartLine<elementIndex> = getLine()
val <label>StartCharPos<elementIndex> = getCharPositionInLine()
<label> = new <labelType>(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL, <label>Start,
getCharIndex()-1)
<label>.setLine(<label>StartLine<elementIndex>)
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>)
<else>
`match`(<string>)
<checkRuleBacktrackFailure()><\n>
<endif>
>>

wildcard(token,label,elementIndex,terminalOptions) ::= <<
<if(label)>
<label>=input.LT(1).asInstanceOf[<labelType>]<\n>
<endif>

```

```

matchAny(input)
<checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/**
Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1)<\n>
<endif>
matchAny()
<checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
* and a return value or values. The 'rule' argument was the
* target rule name, but now is type Rule, whose toString is
* same: the rule name. Now though you can access full rule
* descriptor stuff.
*/
ruleRef(rule,label,elementIndex,args,scope) ::= <<
pushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>)
<if(label)><label>=<endif><if(scope)><scope:delegateName()>.<endif><rule.name>(<args; separator=", ">)<\n>
state._fsp-=1
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
*
*
The 'rule' argument was the target rule name, but now
* is type Rule, whose toString is same: the rule name.

```

```

* Now though you can access full rule descriptor stuff.
*/
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
val <label>Start<elementIndex> = getCharIndex()
val <label>StartLine<elementIndex> = getLine()
val <label>StartCharPos<elementIndex> = getCharPositionInLine()
<if(scope)><scope.delegateName().<endif>m<rule.name>(<args; separator=", ">)
<checkRuleBacktrackFailure()>
<label> = new <labelType>(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1)
<label>.setLine(<label>StartLine<elementIndex>)
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>)
<else>
<if(scope)><scope.delegateName().<endif>m<rule.name>(<args; separator=", ">)
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/**
EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
val <label>Start<elementIndex> = getCharIndex()
val <label>StartLine<elementIndex> = getLine()
val <label>StartCharPos<elementIndex> = getCharPositionInLine()
`match`(EOF)
<checkRuleBacktrackFailure()>
val <label> = new <labelType>(input, EOF, Token.DEFAULT_CHANNEL, <label>Start<elementIndex>,
getCharIndex()-1)
<label>.setLine(<label>StartLine<elementIndex>)
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>)
<else>
`match`(EOF)
<checkRuleBacktrackFailure()>
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> \<= <opPrec>"

```



```
recRuleSetResultAction() ::= "root_0=${ruleName}_primary.tree;"
```

```
recRuleSetReturnAction(src,name) ::= "${name}=${src}.<name>;"
```

```
/** match ^(root children) in tree parser */
```

```
tree(root,  
actionsAfterRoot, children, nullableChildList,  
enclosingTreeLevel, treeLevel) ::= <<
```

```
<root:element()>
```

```
<actionsAfterRoot:element()>
```

```
<if(nullableChildList)>
```

```
if ( input.LA(1)==Token.DOWN ) {
```

```
  `match`(input, Token.DOWN, null)
```

```
  <checkRuleBacktrackFailure()>
```

```
  <children:element()>
```

```
  `match`(input, Token.UP, null)
```

```
  <checkRuleBacktrackFailure()>
```

```
}
```

```
<else>
```

```
`match`(input, Token.DOWN, null)
```

```
<checkRuleBacktrackFailure()>
```

```
<children:element()>
```

```
`match`(input, Token.UP, null)
```

```
<checkRuleBacktrackFailure()>
```

```
<endif>
```

```
>>
```

```
/** Every predicate is used as a validating predicate (even when it is
```

```
* also hoisted into a prediction expression).
```

```
*/
```

```
validateSemanticPredicate(pred,description) ::= <<
```

```
if ( !( <evalPredicate(...)> ) ) {
```

```
  <ruleBacktrackFailure()>
```

```
  throw new FailedPredicateException(input, "<ruleName>", "<description>")
```

```
}
```

```
>>
```

```
// F i x e d D F A (if-then-else)
```

```
dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
```

```
val LA<decisionNumber>_<stateNumber> = input.LA(<k>)<n>
```

```
<edges;
```

```
separator="\nelse ">
```

```
else {
```

```
<if(eotPredictsAlt)>
```

```
  alt<decisionNumber>=<eotPredictsAlt>
```

```
<else>
```

```
  <ruleBacktrackFailure()>
```

```
  val nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input)<n>
```

```

    <@noViableAltException()>
    throw nvae<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
val LA<decisionNumber>_<stateNumber> = input.LA(<k>)<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer
 * so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
val LA<decisionNumber>_<stateNumber> = input.LA(<k>)<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt> <! if no edges, don't gen ELSE !>
<else>
else {
    alt<decisionNumber>=<eotPredictsAlt>
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) {
    <targetState>
}

```

```

>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The
    code generator
    * decides if this is possible: CodeGenerator.canGenerateSwitch().
    */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
input.LA(<k>) match {
<edges; separator="\n">
case _ =>
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>
<else>
    <ruleBacktrackFailure()>
    val nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input)<\n>
    <@noViableAltException()>
    throw nvae<\n>
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
input.LA(<k>) match {
    <edges; separator="\n">
    case _ =>
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
input.LA(<k>) match {
<edges; separator="\n"><\n>
case _ =>
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>;
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
case <labels:{it | <it>} ; separator=" | "> =>
{
    <targetState>
}
>>

// C y c l i c D F A

```

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = dfa<decisionNumber>.predict(input)
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
 * Can't use hex as compiler translates them before compilation.
 * These strings are split into multiple, concatenated strings.
 * Java puts them back together at compile time thankfully.
 * Java cannot handle large static arrays, so we're stuck with this
 * encode/decode approach. See analysis and runtime DFA for
 * the encoding methods.
 */
cyclicDFA(dfa) ::= <<
val DFA<dfa.decisionNumber>_eotS =
    "<dfa.javaCompressedEOT; wrap="\n \n \n">"
val DFA<dfa.decisionNumber>_eofS =
    "<dfa.javaCompressedEOF; wrap="\n \n \n">"
val DFA<dfa.decisionNumber>_minS =
    "<dfa.javaCompressedMin;
wrap="\n \n \n">"
val DFA<dfa.decisionNumber>_maxS =
    "<dfa.javaCompressedMax; wrap="\n \n \n">"
val DFA<dfa.decisionNumber>_acceptS =
    "<dfa.javaCompressedAccept; wrap="\n \n \n">"
val DFA<dfa.decisionNumber>_specialS =
    "<dfa.javaCompressedSpecial; wrap="\n \n \n">}">"
val DFA<dfa.decisionNumber>_transitionS: Array[String] = Array(
    <dfa.javaCompressedTransition: {s|<s; wrap="\n \n \n">}; separator=",\n">
)

val DFA<dfa.decisionNumber>_eot: Array[Short] = DFA.unpackEncodedString(DFA<dfa.decisionNumber>_eotS)
val DFA<dfa.decisionNumber>_eof: Array[Short] = DFA.unpackEncodedString(DFA<dfa.decisionNumber>_eofS)
val DFA<dfa.decisionNumber>_min: Array[Char] =
DFA.unpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS)
val DFA<dfa.decisionNumber>_max: Array[Char] =
DFA.unpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS)
val DFA<dfa.decisionNumber>_accept: Array[Short] =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_acceptS)
val
    DFA<dfa.decisionNumber>_special: Array[Short] =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_specialS)
val DFA<dfa.decisionNumber>_transition = new
Array[Array[Short]](DFA<dfa.decisionNumber>_transitionS.length)

```

```

for (i \<- DFA<dfa.decisionNumber>_transition.indices) {
  DFA<dfa.decisionNumber>_transition(i) =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_transitionS(i))
}

```

```

class DFA<dfa.decisionNumber> extends DFA {

```

```

  def this(recognizer: BaseRecognizer) = {
    this()
    this.recognizer = recognizer
    this.decisionNumber = <dfa.decisionNumber>
    this.eot = DFA<dfa.decisionNumber>_eot
    this.eof = DFA<dfa.decisionNumber>_eof
    this.min = DFA<dfa.decisionNumber>_min
    this.max = DFA<dfa.decisionNumber>_max
    this.accept = DFA<dfa.decisionNumber>_accept
    this.special = DFA<dfa.decisionNumber>_special
    this.transition = DFA<dfa.decisionNumber>_transition
  }
  override def getDescription = "<dfa.description>"
  <@errorMethod()>
<if(dfa.specialStateSTs)>
  @throws(classOf[NoViableAltException])
  override def specialStateTransition(s: Int, _input: IntStream):Int = {
    <if(LEXER)>
    val input = _input
    <endif>
    <if(PARSER)>
    val input = _input.asInstanceOf[TokenStream]
    <endif>
    <if(TREE_PARSER)>
    val input = _input.asInstanceOf[TreeNodeStream]
    <endif>
    val _s = s
    s match {
      <dfa.specialStateSTs:{ state |
        case <i0> => <! compressed special state numbers 0..n-1 !>
          <state>}; separator="\n">
        case _ =>
      }
    }
  }
<if(backtracking)>
  if (state.backtracking>0) {state.failed=true; return -1}<\n>
<endif>
  val nvae = new NoViableAltException(getDescription(), <dfa.decisionNumber>, _s, input)
  error(nvae)
  throw nvae
}<\n>

```

```

<endif>
}<\n>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState)
 ::= <<
val LA<decisionNumber>_<stateNumber>: Int = input.LA(1)<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
val index<decisionNumber>_<stateNumber>: Int = input.index()
input.rewind()<\n>
<endif>
s = -1
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>)<\n>
<endif>
if ( s>=0 ) return s
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) { s = <targetStateNumber>}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber><\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right)
 ::= "<left>&&<right>"

orPredicates(operands) ::= "<operands; separator=\\|\\>"

notPredicate(pred) ::= "!(<evalPredicate(pred,\\\"\\>)"

evalPredicate(pred,description) ::= "<pred>"

```

```

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>===<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)===<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber> >= <lower> && LA<decisionNumber>_<stateNumber> \<= <upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(input.LA(<k>) >=<lower>
&& input.LA(<k>) \<= <upper>)"

setTest(ranges) ::= "<ranges; separator=\\\"\\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
class <scope.name>_scope
{
  <scope.attributes:{it | var <it.name>: <it.type> = _}; separator="\n">
}
val <scope.name>_stack = new collection.mutable.Stack[<scope.name>_scope]<\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
class <scope.name>_scope {
  <scope.attributes:{it | var <it.name>: <it.type> = _}; separator="\n">
}
val <scope.name>_stack = new collection.mutable.Stack[<scope.name>_scope]<\n>
<endif>
>>

returnStructName(r) ::= "<r.name>_return"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>

```

```

Unit
<endif>
<endif>
>>

/** Generate the Java type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
Unit
<endif>
<endif>
>>

delegateName(d)
::= <<
<if(d.label)><d.label><else>g<d.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<scalaTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
var <label.label.text>: <ruleLabelType(referencedRule=label.referencedRule)> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))><\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 * TODO(matthewlloyd): make this static
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
final class <ruleDescriptor:returnStructName()> extends
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope {
  <scope.attributes:{it | var <it.name>: <it.type> = _}; separator="\n">

```



```

    <@ruleReturnMembers()>
  }
<endif>
>>

parameterScope(scope)
  ::= <<
<scope.attributes:{it | <it.name>: <it.type>} ; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>"

scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack(<scope>_stack.size-<negIndex>-1).<attr.name>
<else>
<if(index)>
<scope>_stack(<index>).<attr.name>
<else>
<scope>_stack.top.<attr.name>
<endif>
<endif>
%>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack(<scope>_stack.size-<negIndex>-1).<attr.name> = <expr>
<else>
<if(index)>
<scope>_stack(<index>).<attr.name> = <expr>
<else>
<scope>_stack.top.<attr.name> = <expr>
<endif>
<endif>
%>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/**
reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
(if (<scope>!=null) <scope>.<attr.name> else <initValue(attr.type)>)

```

```

<else>
<scope>
<endif>
%>

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
%>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>
<else>
<attr.name> =<expr>
<endif>
%>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(if (<scope>!=null) <scope>.getText() else null)"
tokenLabelPropertyRef_type(scope,attr) ::= "(if (<scope>!=null) <scope>.getType() else 0)"
tokenLabelPropertyRef_line(scope,attr) ::= "(if (<scope>!=null)
<scope>.getLine() else 0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(if (<scope>!=null) <scope>.getCharPositionInLine() else 0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "(if (<scope>!=null) <scope>.getChannel() else 0)"
tokenLabelPropertyRef_index(scope,attr) ::= "(if (<scope>!=null) <scope>.getTokenIndex() else 0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(if (<scope>!=null) Integer.valueOf(<scope>.getText()) else 0)"

ruleLabelPropertyRef_start(scope,attr) ::= "(if (<scope>!=null) <scope>.start.asInstanceOf[<labelType>] else null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "(if (<scope>!=null) <scope>.stop.asInstanceOf[<labelType>] else null)"
ruleLabelPropertyRef_tree(scope,attr) ::= "(if (<scope>!=null) <scope>.tree.asInstanceOf[<ASTLabelType>] else
null)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(if (<scope>!=null) (input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(<scope>.start),

```

```

    input.getTreeAdaptor().getTokenStopIndex(<scope>.start))) else null)
<else>
(if (<scope>!=null) input.toString(<scope>.start,<scope>.stop) else null)
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "(if (<scope>!=null) <scope>.st else null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
    "(if (<scope>!=null) <scope>.getType() else 0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::=
    "(if (<scope>!=null) <scope>.getLine() else 0)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::=
    "(if (<scope>!=null) <scope>.getCharPositionInLine() else -1)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::=
    "(if (<scope>!=null) <scope>.getChannel() else 0)"
lexerRuleLabelPropertyRef_index(scope,attr) ::=
    "(if (<scope>!=null) <scope>.getTokenIndex() else 0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::=
    "(if (<scope>!=null) <scope>.getText() else null)"
lexerRuleLabelPropertyRef_int(scope,attr)
::=
    "(if (<scope>!=null) Integer.valueOf(<scope>.getText()) else 0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "(retval.start.asInstanceOf[<labelType>])"
rulePropertyRef_stop(scope,attr) ::= "(retval.stop.asInstanceOf[<labelType>])"
rulePropertyRef_tree(scope,attr) ::= "(retval.tree.asInstanceOf[<ASTLabelType>])"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.getTokenStream().toString(
    input.getTreeAdaptor().getTokenStartIndex(retval.start),
    input.getTreeAdaptor().getTokenStopIndex(retval.start))
<else>
input.toString(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "getText()"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr)

```

```
 ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(getCharIndex()-1)"
lexerRulePropertyRef_int(scope,attr) ::= "Integer.valueOf(<scope>.getText())"
```

```
// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>"
```

```
/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {
  <action>
}
<else>
<action>
<endif>
>>
```

```
/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"
```

```
// M I S C (properties, etc...)
```

```
bitset(name, words64) ::= <<
val <name> = new BitSet(Array[Long](<words64:{it | <it>L};separator=",">))<\n>
>>
```

```
codeFileExtension()
 ::= ".scala"
```

```
true_value() ::= "true"
false_value() ::= "false"
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Scala/Scala.stg
No license file was found, but licenses were detected in source scan.
```

```
/*
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```

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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

```
finishedBacktracking(block) ::= <<
```

```
<if(backtracking)>
```

```
if <actions.(actionScope).synpredgate>:
```

```
  <block>
```

```
<else>
```

```
<block>
```

```
<endif>
```

```
>>
```

/**

Add a variable to track last element matched */

```
ruleDeclarations() ::= <<
```

```
<super.ruleDeclarations()>
```

```
_first_0 = None
```

```

_last = None<\n>
>>

/** What to emit when there is no rewrite rule. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<finishedBacktracking({
<if(rewriteMode)>
retval.tree = _first_0
if self._adaptor.getParent(retval.tree) is not None and self._adaptor.isNil(self._adaptor.getParent(retval.tree)):
    retval.tree = self._adaptor.getParent(retval.tree)
<endif>
})>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
    enclosingTreeLevel, treeLevel) ::= <<
_last = self.input.LT(1)
_save_last_<treeLevel> = _last
_first_<treeLevel> = None
<if(!rewriteMode)>
root_<treeLevel> = self._adaptor.nil()<\n>
<endif>
<root:element()>
<if(rewriteMode)>
<finishedBacktracking({
<if(root.el.rule)>
if _first_<enclosingTreeLevel>
is None:
    _first_<enclosingTreeLevel> = <root.el.label>.tree<\n>
<else>
if _first_<enclosingTreeLevel> is None:
    _first_<enclosingTreeLevel> = <root.el.label><\n>
<endif>
})>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if self.input.LA(1) == DOWN:
    self.match(self.input, DOWN, None)
    <children:element()>
    self.match(self.input, UP, None)
<else>

```

```

self.match(self.input, DOWN, None)
<children:element()>
self.match(self.input, UP, None)<\n>
<endif>
<if(!rewriteMode)>
self._adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>)<\n>
<endif>
_last = _save_last_<treeLevel>

>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex,terminalOptions={}) ::= <<
_last = self.input.LT(1)
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
_last = self.input.LT(1)
<super.tokenRef(...)>
<if(!rewriteMode)>
<finishedBacktracking({
<if(terminalOptions.node)>
<label>_tree
= <terminalOptions.node>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<else> <! rewrite mode !>
<finishedBacktracking({
if _first_<treeLevel> is None:
_first_<treeLevel> = <label><\n>
})>
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions={ }) ::= <<
  _last = self.input.LT(1)
  <super.tokenRef(...)>
  <if(!rewriteMode)>
  <finishedBacktracking({
  <if(terminalOptions.node)>
  <label>_tree = <terminalOptions.node>(<label>)
  <else>
  <label>_tree = self._adaptor.dupNode(<label>)
  <endif><\n>
  root_<treeLevel> = self._adaptor.becomeRoot(<label>_tree, root_<treeLevel>)
  })>
  <endif>
  >>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={ })
  ::= <<
  <tokenRefRuleRoot(...)>
  <listLabel(elem=label,...)>
  >>

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<
  _last = self.input.LT(1)
  <super.wildcard(...)>
  <if(!rewriteMode)>
  <finishedBacktracking({
  <label>_tree = self._adaptor.dupTree(<label>)
  self._adaptor.addChild(root_<treeLevel>, <label>_tree)
  })>
  <else> <! rewrite mode !>
  <finishedBacktracking({
  if _first_<treeLevel> is None:
    _first_<treeLevel> = <label>
  })>
  <endif>
  >>

// SET AST
matchSet(s,label,elementIndex,postmatchCode,terminalOptions={ }) ::= <<
  _last = self.input.LT(1)
  <super.matchSet(postmatchCode={
  <if(!rewriteMode)>
  <finishedBacktracking({
  <if(terminalOptions.node)>

```



```

<label>_tree = <terminalOptions.node>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<endif>
}, ...)>
>>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={})
::= <<
<matchSet(...)>
<noRewrite(...)> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <<
_last = self.input.LT(1)
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={}) ::= <<
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<finishedBacktracking({
<if(terminalOptions.node)>
<label>_tree = <terminalOptions.node>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
root_<treeLevel> = self._adaptor.becomeRoot(<label>_tree, root_<treeLevel>)
})>
<endif>
}, ...)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRef(...)>
<finishedBacktracking({
<if(!rewriteMode)>
self._adaptor.addChild(root_<treeLevel>, <label>.tree)
<else> <! rewrite mode !>
if _first_<treeLevel> is None:
_first_<treeLevel> = <label>.tree<\n>

```

```

<endif>
})>
>>

/** x+=rule auto construct
 */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(label, {<label>.tree})>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRef(...)>
<if(!rewriteMode)>
<finishedBacktracking({
root_<treeLevel> = self._adaptor.becomeRoot(<label>.tree, root_<treeLevel>)
})>
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(label, {<label>.tree})>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope)
::= <<
_last = self.input.LT(1)
<super.ruleRefRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */

```

```
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  _last = self.input.LT(1)
  <super.ruleRefRuleRootTrackAndListLabel(...)>
>>
```

```
/** Streams for token refs are tree nodes now; override to
```

```
* change nextToken to nextNode.
```

```
*/
```

```
createRewriteNodeFromElement(token,scope,terminalOptions={ }) ::= <<
```

```
<if(terminalOptions.node)>
```

```
<terminalOptions.node>(stream_<token>.nextNode())
```

```
<else>
```

```
stream_<token>.nextNode()
```

```
<endif>
```

```
>>
```

```
ruleCleanup() ::= <<
```

```
<super.ruleCleanup(>
```

```
<if(!rewriteMode)>
```

```
<finishedBacktracking({
```

```
retval.tree = self._adaptor.rulePostProcessing(root_0)
```

```
})>
```

```
<endif>
```

```
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/codegen/templates/Python3/ASTTreeParser.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
[The "BSD license"]
```

```
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```

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*/

/*

* This code generating template and the associated Cpp runtime was produced by:

* Gokulakannan Somasundaram (heavy lifting from C Run-time by Jim Idle)

*/

```
cTypeInitMap ::= [
  "int"   : "0",      // Integers   start out being 0
  "long"  : "0",      // Longs    start out being 0
  "float" : "0.0",    // Floats   start out being 0
  "double": "0.0",    // Doubles  start out being 0
  "bool"  : "false",
    // Booleans start out being Antlr C for false
  "byte"  : "0",      // Bytes    start out being 0
  "short" : "0",      // Shorts   start out being 0
  "char"  : "0"       // Chars    start out being 0
]
```

```
leadIn(type) ::=
```

```
<<
```

```
/** \file
```

```
* This <type> file was generated by $ANTLR version <ANTLRVersion>
```

```
*
```

```
* - From the grammar source file : <fileName>
```

```
* - On : <generatedTimestamp>
```

```
<if(LEXER)>
```

```
* - for the lexer : <name>Lexer
```

```
<endif>
```

```
<if(PARSER)>
```

```
* - for the parser : <name>Parser
```

```
<endif>
```

```
<if(TREE_PARSER)>
```

```
* - for the tree parser : <name>TreeParser
```

```
<endif>
```

```
*
```

```
* Editing it, at least manually, is not wise.
```

```
*
```

```
* C++ language generator and runtime by Gokulakannan Somasundaram ( heavy lifting from C Run-time by Jim
```

```

Idle )
*
*
>>

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile( LEXER,
            PARSEr,
            TREE_PARSER,
            actionScope,
            actions,
            docComment,
            recognizer,
            name,
            tokens,
            tokenNames,
            rules,
            cyclicDFAs,
            bitsets,
            buildTemplate,
            buildAST,
            rewriteMode,
            profile,
            backtracking,
            synpreds,
            memoize,
            numRules,
            fileName,
            ANTLRVersion,
            generatedTimestamp,
            trace,
            scopes,
            superClass,
            literals
            ) ::=

<<
<leadIn("C++ source")>
*/
// [The "BSD license"]
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```

```

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```

```
<if(actions.(actionScope).header)>
```

```
/* =====
```

```
* This is what the grammar programmer asked us to put at the top of every file.
```

```
*/
```

```
<actions.(actionScope).header>
```

```
/* End of Header action.
```

```
* =====
```

```
*/
```

```
<endif>
```

```
/* -----
```

```
* Include the ANTLR3 generated header file.
```

```
*/
```

```
#include "<name>.hpp"
```

```
<if(trace)>
```

```
#include <iostream>
```

```
<endif>
```

```
<if(recognizer.grammar.delegators)>
```

```
// Include delegator definition header files
```

```
//
```

```
<recognizer.grammar.delegators: { g#include "<g.recognizerName>.hpp" }; separator="\n">
```

```
<endif>
```

```
<actions.(actionScope).postinclude>
```

```
/* ----- */
```

<docComment>

<if(literals)>

<beginNamespace(actions)>

/**

String literals used by <name> that we must do things like MATCHS() with.
* C will normally just lay down 8 bit characters, and you can use L"xxx" to
* get wchar_t, but wchar_t is 16 bits on Windows, which is not UTF32 and so
* we perform this little trick of defining the literals as arrays of UINT32
* and passing in the address of these.

*/

<literals:{it | static ANTLR_UCHAR lit_<i>[] = <it>;}; separator="\n">

<endNamespace(actions)>

<endif>

/* ===== */

/* =====

* Start of recognizer

*/

<recognizer>

/* End of code

* =====

*/

>>

headerFileExtension() ::= ".hpp"

beginNamespace(actions) ::= <%

<if(actions.(actionScope).namespace)>

namespace <actions.(actionScope).namespace> {

<endif>

%>

endNamespace(actions) ::=

<%

<if(actions.(actionScope).namespace)>

}

<endif>

%>

```

headerFile( LEXER,
            PARSEr,
            TREE_PARSER,
            actionScope,
            actions,
            docComment,
            recognizer,
            name,
            tokens,
            tokenNames,
            rules,
            cyclicDFAs,
            bitsets,
            buildTemplate,
            buildAST,
            rewriteMode,
            profile,
            backtracking,
            synpreds,
            memoize,
            numRules,
            fileName,
            ANTLRVersion,
            generatedTimestamp,
            trace,
            scopes,
            superClass,
            literals
        ) ::=

```

```
<<
```

```
<leadIn("C++ header")>
```

```
<if(PARSEr)>
```

```
* The parser <mainName()> has the callable functions (rules) shown below,
```

```
<endif>
```

```
<if(LEXER)>
```

```
* The lexer <mainName()> has the callable functions (rules) shown below,
```

```
<endif>
```

```
<if(TREE_PARSER)>
```

```
* The tree parser <mainName()> has the callable functions
```

```
(rules) shown below,
```

```
<endif>
```

```
* which will invoke the code for the associated rule in the source grammar
```

```
* assuming that the input stream is pointing to a token/text stream that could begin
```

```
* this rule.
```

```
*
```

```
* For instance if you call the first (topmost) rule in a parser grammar, you will
```

```
* get the results of a full parse, but calling a rule half way through the grammar will
```

```
* allow you to pass part of a full token stream to the parser, such as for syntax checking
```



```

* in editors and so on.
*
*/
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// SUCH DAMAGE.

#ifndef _<name>_H
#define _<name>_H
<actions.(actionScope).preincludes>
/* =====
* Standard antlr3 C++ runtime definitions
*/
#include \<antlr3.hpp>

/* End of standard antlr 3 runtime definitions
* =====
*/

<actions.(actionScope).includes>

<if(recognizer.grammar.delegates)>
// Include delegate definition header files

```

```

//
<recognizer.grammar.delegates: {g|#include "<g.recognizerName>.hpp"}; separator="\n">

<endif>

<actions.(actionScope).header>

#ifdef WIN32
// Disable: Unreferenced parameter, - Rules with parameters that are not used
// constant conditional, - ANTLR realizes that a prediction is always true (synpred usually)
// initialized but unused variable - tree rewrite variables declared but not needed
// Unreferenced local variable - lexer rule declares but does not always
use _type
// potentially uninitialized variable used - retval always returned from a rule
// unreferenced local function has been removed - susually getTokenNames or freeScope, they can go without
warnigns
//
// These are only really displayed at warning level /W4 but that is the code ideal I am aiming at
// and the codegen must generate some of these warnings by necessity, apart from 4100, which is
// usually generated when a parser rule is given a parameter that it does not use. Mostly though
// this is a matter of orthogonality hence I disable that one.
//
#pragma warning( disable : 4100 )
#pragma warning( disable : 4101 )
#pragma warning( disable : 4127 )
#pragma warning( disable : 4189 )
#pragma warning( disable : 4505 )
#pragma warning( disable : 4701 )
#endif
<if(backtracking)>

/* =====
* BACKTRACKING IS ENABLED
* =====
*/
<endif>

<beginNamespace(actions)>

<if(recognizer.grammar.delegators)>
// Include delegator definition
classes
//
<recognizer.grammar.delegators: {g|class <g.recognizerName>; }; separator="\n">
<endif>

<actions.(actionScope).traits>

```

```

typedef <name>Traits <name>ImplTraits;

<rules:{r | <if(r.ruleDescriptor.isSynPred)> struct <r.ruleDescriptor.name> {\}; <endif>}; separator="\n">

class <name>Tokens
{
public:
/** Symbolic definitions of all the tokens that the <grammarType()> will work with.
*
* Antlr will define EOF, but we can't use that as it is too common in
* in C header files and that would be confusing. There is no way to filter this out at the moment
* so we just undef it here for now. That isn't the value we get back from C recognizers
* anyway. We are looking for ANTLR_TOKEN_EOF.
*/
enum Tokens
{
EOF_TOKEN = <name>ImplTraits::CommonTokenType::TOKEN_EOF
<tokens:{it | , <it.name> = <it.type> }; separator="\n">
};

};

/** Context tracking structure for <mainName()>
*/
class <name> : public <componentBaseType()>, public <name>Tokens
{
public:
typedef
<name>ImplTraits ImplTraits;
typedef <name> ComponentType;
typedef ComponentType::StreamType StreamType;
typedef <componentBaseType()> BaseType;
typedef ImplTraits::RecognizerSharedStateType\<StreamType> RecognizerSharedStateType;
typedef StreamType InputType;
<if(recognizer.filterMode)>
static const bool IsFiltered = true;
<else>
static const bool IsFiltered = false;
<endif>

<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScopeDecl(it)><endif>}>
<rules:{r | <if(r.ruleDescriptor.ruleScope)><ruleAttributeScopeDecl(scope=r.ruleDescriptor.ruleScope)><endif>}>

private:
<if(recognizer.grammar.delegates)>
<recognizer.grammar.delegates:
{g|<g.recognizerName>* m_<g.delegateName()>;}; separator="\n">
<endif>

```

```

<if(recognizer.grammar.delegators)>
  <recognizer.grammar.delegators:
    {g|<g.recognizerName>* m_<g.delegateName()>; separator="\n">
  <endif>
<scopes:{it | <if(it.isDynamicGlobalScope)>
  <globalAttributeScopeDef(it)>
<endif>}; separator="\n\n">
<rules:
  {r |<if(r.ruleDescriptor.ruleScope)>
  <ruleAttributeScopeDef(scope=r.ruleDescriptor.ruleScope)>
<endif>}>
  <@members>
  <@end>

public:
  <name>(InputType* instream<recognizer.grammar.delegators:{g|, <g.recognizerName>*
<g.delegateName()>}>);
  <name>(InputType* instream, RecognizerSharedStateType* state<recognizer.grammar.delegators:{g|,
<g.recognizerName>* <g.delegateName()>}>);

  void init(InputType* instream <recognizer.grammar.delegators:{g|, <g.recognizerName>* <g.delegateName()>}>
);

  <actions.(actionScope).context>

<if(LEXER)>
<if(recognizer.filterMode)>
  void memoize(ANTLR_MARKER ruleIndex, ANTLR_MARKER ruleParseStart);
  bool alreadyParsedRule(ANTLR_MARKER ruleIndex);
  <filteringNextToken()>
<endif>
  <rules:{r | <if(!r.ruleDescriptor.isSynPred)><headerReturnType(ruleDescriptor=r.ruleDescriptor)>
m<r.ruleDescriptor.name>( <r.ruleDescriptor.parameterScope:parameterScope()>);<endif>}; separator="\n">
  <rules:{r | <if(r.ruleDescriptor.isSynPred)>
<headerReturnType(ruleDescriptor=r.ruleDescriptor)> msynpred( antlr3::ClassForwarder<
<r.ruleDescriptor.name> > <r.ruleDescriptor.parameterScope:parameterScope()>);
  void m<r.ruleDescriptor.name>_fragment (<r.ruleDescriptor.parameterScope:parameterScope()>);<endif>};
separator="\n">
<endif>
<if(!LEXER)>
  <rules:{r | <headerReturnScope(ruleDescriptor=r.ruleDescriptor)>}>
  <rules:{r | <if(!r.ruleDescriptor.isSynPred)> <headerReturnType(ruleDescriptor=r.ruleDescriptor)>
<r.ruleDescriptor.name> (<r.ruleDescriptor.parameterScope:parameterScope()>); <endif>}; separator="\n">
  <rules:{r | <if(r.ruleDescriptor.isSynPred)> <headerReturnType(ruleDescriptor=r.ruleDescriptor)> msynpred(
antlr3::ClassForwarder< <r.ruleDescriptor.name> > <r.ruleDescriptor.parameterScope:parameterScope()>);
  void m<r.ruleDescriptor.name>_fragment (<r.ruleDescriptor.parameterScope:parameterScope()>);<endif>};
separator="\n">
<! generate rule/method definitions for imported rules

```

```

so they
appear to be defined in this recognizer. !>
// Delegated rules
<recognizer.grammar.delegatedRules:{ruleDescriptor|
  <headerReturnType(ruleDescriptor)>
  <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope()>);}; separator="\n">
<endif>

const char *  getGrammarFileName();
void          reset();
~<name>();

};

// Function prototypes for the constructor functions that external translation units
// such as delegators and delegates may wish to call.
//
<if(!recognizer.grammar.grammarIsRoot)>
extern ANTLR_UINT8*  <recognizer.grammar.composite.rootGrammar.recognizerName>TokenNames[];
<endif>

/* End of token definitions for <name>
* =====
*/

<endNamespace(actions)>

#endif

/* END - Note:Keep extra line feed to satisfy UNIX systems */

>>

grammarType() ::= <%
<if(PARSER)>
parser
<endif>
<if(LEXER)>
lexer
<endif>
<if(TREE_PARSER)>
tree parser
<endif>
%>

componentType()

```

```

 ::= <<
 <if(PARSER)>
 <name>ImplTraits::ParserType
 <endif>
 <if(LEXER)>
 <name>ImplTraits::LexerType
 <endif>
 <if(TREE_PARSER)>
 <name>ImplTraits::TreeParserType
 <endif>
 >>

 componentBaseType() ::= <%
 <if(PARSER)>
 <name>ImplTraits::BaseParserType
 <endif>
 <if(LEXER)>
 <name>ImplTraits::BaseLexerType
 <endif>
 <if(TREE_PARSER)>
 <name>ImplTraits::BaseTreeParserType
 <endif>
 %>

 streamType() ::= <<
 <if(PARSER)>
 <name>ImplTraits::ParserType::StreamType
 <endif>
 <if(LEXER)>
 <name>ImplTraits::LexerType::StreamType
 <endif>
 <if(TREE_PARSER)>
 <name>ImplTraits::TreeParserType::StreamType
 <endif>
 >>

 mainName() ::= <%
 <if(PARSER)>
 <name>
 <endif>
 <if(LEXER)>
 <name>
 <endif>
 <if(TREE_PARSER)>
 <name>
 <endif>
 %>

```

```

headerReturnScope(ruleDescriptor) ::= "<returnScope(scope=ruleDescriptor.returnScope)>"

headerReturnType(ruleDescriptor) ::= <%
<if(LEXER)>
<if(!ruleDescriptor.isSynPred)>
void
<else>
<returnType()>
<endif>
<else>
<returnType()>
<endif>
%>

// Produce the lexer output
//
lexer( grammar,
name,
    tokens,
    scopes,
    rules,
    numRules,
    filterMode,
    superClass,
    labelType="ImplTraits::CommonTokenType*" ) ::= <<

using namespace antlr3;

<beginNamespace(actions)>

<if(filterMode)>

/* Override the normal MEMOIZE and HAVEALREADYPARSED macros as this is a filtering
* lexer. In filter mode, the memoizing and backtracking are gated at BACKTRACKING > 1 rather
* than just BACKTRACKING. In some cases this might generate code akin to:
* if (BACKTRACKING) if (BACKTRACKING > 1) memoize.
*/
void <name>::memoize(ANTLR_MARKER ruleIndex, ANTLR_MARKER ruleParseStart)
{
    BaseType* base = this;
    if ( this->get_backtracking()>1 )
        base->memoize( ruleIndex, ruleParseStart );
}

bool <name>::alreadyParsedRule(ANTLR_MARKER ruleIndex)
{

```

```

BaseType* base = this;
if ( this->get_backtracking() > 1 )
    return base->haveParsedRule(ruleIndex);
return false;
}

<endif>

/* =====
* Lexer
* matching rules end.
* =====
*/

<scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScope(it)><endif>}>

<actions.lexer.members>

<name>::~~<name>()
{
<if(memoize)>
RuleMemoType* rulememo = this->getRuleMemo();
if(rulememo != NULL)
{
delete rulememo;
this->setRuleMemo(NULL);
}
<endif>
<if(grammar.directDelegates)>
// Free the lexers that we delegated to
// functions to. NULL the state so we only free it once.
//
<grammar.directDelegates:
    {g| m_<g:delegateName()>->set_lexstate(NULL);
    delete m_<g:delegateName()>; }; separator="\n">
<endif>
}

void
<name>::reset()
{
    this->get_rec()->reset();
}

/** \brief Name of the grammar file that generated this code
*/
static const char fileName[] = "<fileName>";

```



```

/** \brief Return the name of the grammar file that generated this code.
*/
const char* <name>::getGrammarFileName()
{
    return fileName;
}

/** \brief Create a new lexer called
<name>
*
* \param[in] instream Pointer to an initialized input stream
* \return
* - Success p<name> initialized for the lex start
* - Fail NULL
*/
<name>::<name>(StreamType* instream<grammar.delegators:{g|, <g.recognizerName>* <g.delegateName()>>>)
:<name>ImplTraits::BaseLexerType(ANTLR_SIZE_HINT, instream, NULL)
{
    // See if we can create a new lexer with the standard constructor
    //
    this->init(instream <grammar.delegators:{g|, <g.delegateName()>>>);
}

/** \brief Create a new lexer called <name>
*
* \param[in] instream Pointer to an initialized input stream
* \param[state] state Previously created shared recognizer stat
* \return
* - Success p<name> initialized for the lex start
* - Fail NULL
*/
<name>::<name>(StreamType* instream, RecognizerSharedStateType* state<grammar.delegators:{g|,
<g.recognizerName>* <g.delegateName()>>>)
:<name>ImplTraits::BaseLexerType(ANTLR_SIZE_HINT, instream, state)
{
    this->init(instream <grammar.delegators:{g|, <g.delegateName()>
>);
}

void <name>::init(StreamType* instream<grammar.delegators:{g|, <g.recognizerName>* <g.delegateName()> >)
{
    /* -----
    * Memory for basic structure is allocated, now to fill in
    * in base ANTLR3 structures. We initialize the function pointers
    * for the standard ANTLR3 lexer function set, but upon return
    * from here, the programmer may set the pointers to provide custom
    * implementations of each function.
    */
}

```

```

* We don't use the macros defined in <name>.h here so you can get a sense
* of what goes where.
*/

<if(memoize)>
<if(grammar.grammarIsRoot)>
  // Create a LIST for recording rule memos.
  //
  this->setRuleMemo( new IntTrie(15) ); /* 16 bit depth is enough for 32768 rules! */
<endif>
<endif>

<if(grammar.directDelegates)>
  // Initialize the lexers that we are going to delegate some
  // functions to.
  //
  <grammar.directDelegates:
    { g|m_<g:delegateName()>
  = new <g.recognizerName>(instream, this->get_lexstate(), this<grammar.delegators:{ g|, <g:delegateName()>}>);};
separator="\n">
<endif>
<if(grammar.delegators)>
  // Install the pointers back to lexers that will delegate us to perform certain functions
  // for them.
  //
  <grammar.delegators:
    { g| m_<g:delegateName()> = <g:delegateName()>;}; separator="\n">
<endif>
}

<if(cyclicDFAs)>

/* =====
* DFA tables for the lexer
*/
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
/* =====
* End of DFA tables for the lexer
*/
<endif>

/* =====
* Functions to match the lexer grammar defined tokens from the input stream
*/

<rules; separator="\n\n">

/* =====

```

```

* Lexer matching rules end.
* =====
*/
<if(synpreds)>

/* =====
* Lexer syntactic predicates
*/
<synpreds: {p | <lexerSynpred(predname=p)>}>
/* =====
* Lexer syntactic predicates end.
* =====
*/
<endif>

/* End of Lexer code
* =====
* =====
*/

<endNamespace(actions)>

>>

```

```

filteringNextToken() ::= <<
<name>ImplTraits::CommonTokenType*
<name>ImplTraits::TokenSourceType::nextToken()
{
  LexerType* lexer;
  typename LexerType::RecognizerSharedStateType* state;

  lexer = this->get_super();
  state = lexer->get_lexstate();

  /* Get rid of any previous token (token factory takes care of
  * any deallocation when this token is finally used up.

*/
  state->set_token_present( false );
  state->set_error( false ); /* Start out without an exception */
  state->set_failedflag(false);

  /* Record the start of the token in our input stream.
  */
  state->set_tokenStartCharIndex( lexer->index());
  state->set_tokenStartCharPositionInLine( lexer->getCharPositionInLine() );
  state->set_tokenStartLine( lexer->getLine() );

```

```

state->set_text("");

/* Now call the matching rules and see if we can generate a new token
*/
for (;;)
{
if (lexer->LA(1) == ANTLR_CHARSTREAM_EOF)
{
/* Reached the end of the stream, nothing more to do.
*/
CommonTokenType& teof = m_eofToken;

teof.set_startIndex(lexer->getCharIndex());
teof.set_stopIndex(lexer->getCharIndex());
teof.setLine(lexer->getLine());
return &teof;
}

state->set_token_present(false);
state->set_error(false); /* Start out without an exception */

{
ANTLR_MARKER m;

m = this->get_istream()->mark();
state->set_backtracking(1); /*
No exceptions */
state->set_failedflag(false);

/* Call the generated lexer, see if it can get a new token together.
*/
lexer->mTokens();
state->set_backtracking(0);

<! mTokens backtracks with synpred at BACKTRACKING==2
and we set the synpredgate to allow actions at level 1. !>

if(state->get_failed())
{
lexer->rewind(m);
lexer->consume(); <! advance one char and try again !>
}
else
{
lexer->emit(); /* Assemble the token and emit it to the stream */
TokenType& tok = state->get_token();
return &tok;
}
}

```

```
}  
}  
}  
>>
```

```
actionGate() ::= "this->get_backtracking()==0"
```

```
filteringActionGate() ::= "this->get_backtracking()==1"
```

```
/** How to generate a parser */
```

```
genericParser( grammar, name, scopes, tokens, tokenNames, rules, numRules,  
              bitsets, inputStreamType, superClass,  
              labelType, members, rewriteElementType,  
              filterMode, ASTLabelType="ImplTraits::TreeType*")
```

```
::= <<
```

```
using namespace antlr3;
```

```
<if(grammar.grammarIsRoot)>
```

```
/** \brief Table of all token names in symbolic order, mainly used for  
 *   error reporting.  
 */
```

```
ANTLR_UINT8* <name>TokenNames[<length(tokenNames)>+4]
```

```
= {
```

```
  (ANTLR_UINT8*) "\<invalid>", /* String to print to indicate an invalid token */
```

```
  (ANTLR_UINT8*) "\<EOR>",
```

```
  (ANTLR_UINT8*) "\<DOWN>",
```

```
  (ANTLR_UINT8*) "\<UP>",
```

```
  <tokenNames:{it |(ANTLR_UINT8*) <it>; separator=",\n">
```

```
  };
```

```
<endif>
```

```
<@members>
```

```
<@end>
```

```
/** \brief Name of the grammar file that generated this code
```

```
*/
```

```
static const char fileName[] = "<fileName>";
```

```
/** \brief Return the name of the grammar file that generated this code.
```

```
*/
```

```
const char* <name>::getGrammarFileName()
```

```
{
```

```
  return fileName;
```

```
}
```

```
/** \brief Create a new <name> parser and return a context for it.
```

```
*/
```

```
* \param[in] instream Pointer to an input stream interface.
```

```

*
* \return Pointer to new parser context upon success.
*/
<name>::<name>(
    StreamType* instream<grammar.delegators:{g|, <g.recognizerName>* <g.delegateName()>>>
    <constructorInitializerType("NULL")>
    {
        // See if we can create a new parser with the standard constructor
        //
        this->init(instream<grammar.delegators:{g|, <g.delegateName()>>>);
    }

/** \brief Create a new <name> parser and return a context for it.
*
* \param[in] instream Pointer to an input stream interface.
*
* \return Pointer to new parser context upon success.
*/
<name>::<name>( StreamType* instream, RecognizerSharedStateType* state<grammar.delegators:{g|,
    <g.recognizerName>* <g.delegateName()>>>)
    <constructorInitializerType("state")>
    {
        this->init(instream <grammar.delegators:{g|, <g.delegateName()>>>);
    }

void <name>::init(StreamType* instream<grammar.delegators:{g|, <g.recognizerName>* <g.delegateName()>>>)
    {
        <actions.parser.apifuncs>
    <if(memoize)>
    <if(grammar.grammarIsRoot)>
        /* Create a LIST for recording rule memos.
        */
        typedef RecognizerSharedStateType::RuleMemoType
        RuleMemoType;
        this->setRuleMemo( new RuleMemoType(15) ); /* 16 bit depth is enough for 32768 rules! */<\n>
    <endif>
    <endif>
    <if(grammar.directDelegates)>
        // Initialize the lexers that we are going to delegate some
        // functions to.
        //
        <grammar.directDelegates:
            {g|m_<g.delegateName()> = new <g.recognizerName>(instream, this->get_psrstate(),
            this<grammar.delegators:{g|, <g.delegateName()>>>);}; separator="\n">
        <endif>
        <if(grammar.delegators)>
            // Install the pointers back to lexers that will delegate us to perform certain functions
            // for them.

```

```

//
    <grammar.delegates: {g| m_<g:delegateName()> = <g:delegateName()>; separator="\n">
<endif>
/* Install the token table
*/
this->get_psrstate()->set_tokenNames( <grammar.composite.rootGrammar.recognizerName>TokenNames );

<@debugStuff()>

}

void
<name>::reset()
{
    this->get_rec()->reset();
}

/** Free the parser resources
*/
<name>::~~<name>()
{
    <@cleanup>
    <@end>
<if(grammar.directDelegates)>
//
Free the parsers that we delegated to
// functions to.NULL the state so we only free it once.
//
<grammar.directDelegates:
    {g| m_<g:delegateName()>->set_psrstate( NULL );
    delete m_<g:delegateName()>; separator="\n">
<endif>
<if(memoize)>
<if(grammar.grammarIsRoot)>
if(this->getRuleMemo() != NULL)
{
    delete this->getRuleMemo();
    this->setRuleMemo(NULL);
}
<endif>
<endif>
}

/** Return token names used by this <grammarType()>
*
* The returned pointer is used as an index into the token names table (using the token
* number as the index).
*

```

```

* \return Pointer to first char * in the table.
*/
static ANTLR_UINT8** getTokenNames()
{
    return <grammar.composite.rootGrammar.recognizerName>TokenNames;
}

<members>

/* Declare the bitsets
*/
<bitsets:{it | <bitsetDeclare(bitsetName={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
    words64=it.bits, traits={<name>ImplTraits } )>>}>

<if(cyclicDFAs)>

/* =====
* DFA tables for the parser
*/
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
/* =====
* End of DFA tables for the parser
*/
<endif>

/* =====
* Parsing rules
*/
<rules; separator="\n\n">
<if(grammar.delegatedRules)>
// Delegated methods that appear to be a part of this
// parser
//
<grammar.delegatedRules:{ruleDescriptor|
    <return Type()> <name>::<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope()>)
    {
        <if(ruleDescriptor.hasReturn Value)>return <endif>m_<ruleDescriptor.grammar:delegateName()>-
    ><ruleDescriptor.name>(<if(ruleDescriptor.parameterScope)><ruleDescriptor.parameterScope.attributes:{a|<a.name
    e}>}; separator=", "><endif>);
    \}}; separator="\n\n">

<endif>
/* End of parsing rules
* =====
*/

/* =====

```



```

* Syntactic predicates
*/
<synpreds: {p | <synpred(predname=p)>}>
/* End of syntactic predicates
* =====
*/

>>

constructorInitializerType(rec_state) ::= <<
<if(PARSER)>
  :ImplTraits::BaseParserType(ANTLR_SIZE_HINT, instream, <rec_state>)
<endif>
<if(TREE_PARSER)>
  :ImplTraits::BaseTreeParserType(ANTLR_SIZE_HINT, instream, <rec_state>)
<endif>
>>

parser( grammar,
  name,
  scopes,
  tokens,
  tokenNames,
  rules,
  numRules,
  bitsets,
  ASTLabelType,
  superClass="Parser",
  labelType="const ImplTraits::CommonTokenType*",
  members={<actions.parser.members>}
) ::= <<
<beginNamespace(actions)>
<genericParser(inputStreamType="CommonTokenStreamType*", rewriteElementType="Token", filterMode=false,
...)>
<endNamespace(actions)>
>>

/** How to generate a tree parser; same as parser except the input
* stream is a different type.
*/
treeParser( grammar,
  name,
  scopes,
  tokens,
  tokenNames,
  globalAction,
  rules,
  numRules,

```

```

    bitsets,
    filterMode,
    labelType={ <ASTLabelType> },
    ASTLabelType="ImplTraits::TreeType*",
    superClass="TreeParser",
    members={ <actions.treeparser.members> }
)
::= <<
<beginNamespace(actions)>
<genericParser(inputStreamType="CommonTreeNodeStream*", rewriteElementType="Node", ...)>
<endNamespace(actions)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
void <name>::m<ruleName>_fragment( <ruleDescriptor.parameterScope:parameterScope(> )
{
    <ruleLabelDefs(>
    <ruleLabelInitializations(>
    <if(trace)>
        ANTLR_PRINTF("enter <ruleName> %d failed = %d, backtracking = %d\n", this->LT(1),failed,this-
>get_backtracking() );
        <block>
        ANTLR_PRINTF("exit <ruleName> %d, failed = %d, backtracking = %d\n", this->LT(1),failed,this-
>get_backtracking());

    <else>
        <block>
    <endif>

    goto rule<ruleDescriptor.name>Ex; /* Prevent compiler warnings */
    rule<ruleDescriptor.name>Ex: ;
}
// $ANTLR end <ruleName>
>>

synpred(predname) ::= <<

bool <name>::msynpred( antlr3::ClassForwarder< <predname> > )
{

```

```

ANTLR_MARKER start;
bool success;

this->inc_backtracking();
<@start(>
start = this->mark();
this->m<predname>_fragment(); // can never throw exception
success = !( this->get_failedflag() );
this->rewind(start);
<@stop(>
this->dec_backtracking();
this->set_failedflag(false);
return success;
}<\n>
>>

```

```

lexerSynpred(predname) ::= <<
<synpred(predname)>
>>

```

```

ruleMemoization(rname) ::= <<
<if(memoize)>
if ( (this->get_backtracking())>0)
&& (this->haveParsedRule(<ruleDescriptor.index>)) )
{
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!ruleDescriptor.isSynPred)>
retval.start = 0;<\n>
<endif>
<endif>
<(ruleDescriptor.actions.after):execAfter(>
<finalCode(finalBlock=finally)>
<if(!ruleDescriptor.isSynPred)>
<scopeClean(><\n>
<endif>
return <ruleReturnValue(>;
}
<endif>
>>

```

```

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
if (this->hasException())
{
goto rule<ruleDescriptor.name>Ex;
}
<if(backtracking)>
if (this->hasFailed())

```

```

{
  <scopeClean()>
  <@debugClean()>
  return <ruleReturnValue()>;
}
<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>
if (this->get_backtracking()>0)
{
  this->set_failedflag( true );
  <scopeClean()>
  return <ruleReturnValue()>;
}
<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required
 * for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
/**
 * $ANTLR start <ruleName>
 * <fileName>:<description>
 */
<returnType()>
<name>::<ruleName>(<ruleDescriptor.parameterScope:parameterScope()>)
{
  <if(trace)>ANTLR_PRINTF("enter <ruleName> %s failed=%d, backtracking=%d\n", this->LT(1), this-
>get_backtracking() );<endif>
  <ruleDeclarations()>
  <ruleDescriptor.actions.declarations>
  <ruleLabelDefs()>
  <ruleInitializations()>
  <ruleDescriptor.actions.init>
  <ruleMemoization(rname=ruleName)>
  <ruleLabelInitializations()>

  <if(actions.(actionScope).rulecatch)>
  try {
  <else>
  <if(exceptions)>
    try {
  <endif>

```

```

<endif>
<@preamble()>
{
  <block>
}
<ruleCleanUp()>

<if(exceptions)>
  <(ruleDescriptor.actions.after):execAfter()>
  <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
  <if(!emptyRule)>
    if (this->hasException())
      {
        this->preporterror();
        this->precover();
        <@setErrorReturnValue()>
      }
    <if(ruleDescriptor.actions.after)>
    else
      {
        <(ruleDescriptor.actions.after):execAfter()>
      }<\n>
    <endif>
  <endif>
  <if(actions.(actionScope).rulecatch)>
    } <actions.(actionScope).rulecatch>
  <endif>
<endif>
<endif>

  <if(trace)>ANTLR_PRINTF("exit <ruleName> %d failed=%s backtracking=%s\n", this->LT(1), failed, this-
>get_backtracking() );<endif>
  <memoize()>
<if(finally)>
  <finalCode(finalBlock=finally)>
<endif>
  <scopeClean()>
  <@postamble()>
  return <ruleReturnValue()>;
}
/* $ANTLR end <ruleName> */
>>

finalCode(finalBlock) ::= <<
{
  <finalBlock>
}

```

>>

```
catch(decl,action) ::= <<
/* catch(decl,action)
*/
}catch (<e.decl>) {
  <e.action>
}
>>
```

```
ruleDeclarations() ::= <<
```

```
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> retval(this);<\n>
<else>
<if(PARSER)>
  <name>ImplTraits::RuleReturnValueType
  _antlr_rule_exit(this);
<endif>
<if(ruleDescriptor.returnScope)>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name>;
}>
<endif>
<endif>
<if(memoize)>
ANTLR_MARKER <ruleDescriptor.name>_startIndex;
<endif>
>>
```

```
ruleInitializations() ::= <<
```

```
/* Initialize rule variables
*/
<if(ruleDescriptor.returnScope)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.returnScope.attributes: { a | <if(a.initValue)>retval.<a.name> = <a.initValue>;<endif> }>
<else>
<ruleDescriptor.returnScope.attributes: { a | <if(a.initValue)><a.name> = <a.initValue>;<endif> }>
<endif>
<endif>
<if(memoize)>
<ruleDescriptor.name>_startIndex = this->index();<\n>
<endif>
<ruleDescriptor.useScopes: { it | m_<it>_stack.push(<it>Scope()); }; separator="\n">
<ruleDescriptor.ruleScope: { it | m_<it.name>_stack.push(<it.name>Scope()); }; separator="\n">
>>
```

```
ruleLabelDefs() ::= <<
```

```

<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
  :{it |<labelType> <it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
  :{it |ImplTraits::TokenPtrsListType list_<it.label.text>;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
>>

```

```

ruleLabelInitializations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!ruleDescriptor.isSynPred)>
retval.call_start_placeholder();
<endif>
<endif>
>>

```

```

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
  :{it |<labelType> <it.label.text> = NULL;}; separator="\n"
>
<ruleDescriptor.charLabels:{it |ANTLR_UINT32 <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
  :{it | ImplTraits::IntTrieType<CommonTokenType>* list_<it.label.text>;}; separator="\n"
>
>>

```

```

lexerRuleLabelInit() ::= <<
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
  :{it |list_<it.label.text> = new ImplTraits::IntTrieType<CommonTokenType>(31);}; separator="\n"
>
>>

```

```

lexerRuleLabelFree() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
  :{it |<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,

```

```

ruleDescriptor.ruleListLabels]
  :{it | delete list_<it.label.text>;}; separator="\n"
>
>>

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
<endif>
%>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if ( this->get_backtracking() > 0 ) { this->memoize(<ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

ruleCleanUp() ::= <<

// This is where rules clean up and exit
//
goto
  rule<ruleDescriptor.name>Ex; /* Prevent compiler warnings */
rule<ruleDescriptor.name>Ex; ;
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
<if(!ruleDescriptor.isSynPred)>
retval.call_stop_placeholder();<\n>
<endif>
<endif>
<endif>
>>

scopeClean() ::= <<
<ruleDescriptor.useScopes:{it | m_<it>_stack.pop(); }; separator="\n">
<ruleDescriptor.ruleScope:{it | m_<it.name>_stack.pop(); }; separator="\n">

>>

/** How to generate a rule in the lexer; naked blocks are used for
* fragment rules, which do not produce tokens.

```



```

*/
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// Comes from: <block.description>
/** \brief Lexer rule generated by ANTLR3
*
* $ANTLR start <ruleName>
*
* Looks to match the characters the constitute the token <ruleName>
* from the attached input stream.
*
*
* \remark
* - lexer->error == true if an exception was thrown.
*/
void <name>::m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(>))
{
    ANTLR_UINT32 _type;
    <ruleDeclarations(>
    <ruleDescriptor.actions.declarations>
    <lexerRuleLabelDefs(>
    <if(trace)>
    std::cout <<< "enter <ruleName> " <<< (char)this->LA(1)
        <<< " line=" <<< this->getLine() <<< ":" <<< this->getCharPositionInLine()
        <<< " failed=" <<< this->get_failedflag() <<< " backtracking=" <<< this->get_backtracking() <<<
    std::endl;
    <endif>

    <if(nakedBlock)>
        <ruleMemoization(rname=ruleName)>
        <lexerRuleLabelInit(>
        <ruleDescriptor.actions.init>

        <block><\n>
    <else>
        <ruleMemoization(rname=ruleName)>
        <lexerRuleLabelInit(>
        _type = <ruleName>;

        <ruleDescriptor.actions.init>

        <block>
        this->get_lexstate()->set_type(_type);
    <endif>
    <if(trace)>
    std::cout <<< "exit <ruleName> " <<< (char)this->LA(1)
        <<< " line=" <<< this->getLine() <<< ":" <<< this->getCharPositionInLine()
        <<< " failed=" <<< this->get_failedflag() <<< " backtracking="

```

```

\<< this->get_backtracking() \<< std::endl;
    <endif>
    <ruleCleanUp()>
    <lexerRuleLabelFree()>
    <(ruleDescriptor.actions.after):execAfter()>
    <memoize>
}
// $ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
/** This is the entry point in to the lexer from an object that
 * wants to generate the next token, such as a pCOMMON_TOKEN_STREAM
 */
void
<name>::mTokens()
{
    <block><\n>

    goto ruleTokensEx; /* Prevent compiler warnings */
ruleTokensEx: ;
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

// <fileName>:<description>
{
    int alt<decisionNumber>=<maxAlt>;
    <decls>
    <@predecision()>
    <decision>
    <@postdecision()>
    <@prebranch()>
    switch (alt<decisionNumber>)

    {
    <alts:{ a | <altSwitchCase(i,a)>}>
    }
    <@postbranch()>
}
>>

```

```

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
{
  // <fileName>:<description>

  ANTLR_UINT32 alt<decisionNumber>;

  alt<decisionNumber>=<maxAlt>;

  <decls>
  <@predecision()>
  <decision>
  <@postdecision()>
  switch (alt<decisionNumber>)
  {
    <alts:{ a | <altSwitchCase(i,a)>}>
  }
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
{
  int cnt<decisionNumber>=0;
  <decls>
  <@preloop()>

```

```

    for (;;)
    {
        int alt<decisionNumber>=<maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>)
{
    <alts:{ a | <altSwitchCase(i,a)>}>
    default:

if ( cnt<decisionNumber> >= 1 )
{
    goto loop<decisionNumber>;
}
<ruleBacktrackFailure()>
<earlyExitEx()>
<@earlyExitException()>
goto rule<ruleDescriptor.name>Ex;
}
cnt<decisionNumber>++;
}
loop<decisionNumber>; /* Jump to here if this rule does not match */
<@postloop()>
}
>>

earlyExitEx() ::= <<
/* mismatchedSetEx()
*/
new ANTLR_Exception<< <name>ImplTraits, EARLY_EXIT_EXCEPTION, StreamType>( this->get_rec(), "" );
<\n>
>>
positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description)
::= <<

// <fileName>:<description>
<decls>

<@preloop()>
for (;;)
{
    int alt<decisionNumber>=<maxAlt>;
    <@predecision()>
    <decision>

```

```

<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:{ a | <altSwitchCase(i,a)>}>
default:
    goto loop<decisionNumber>; /* break out of the loop */
    break;
}
}
loop<decisionNumber>; /* Jump out to here if this rule does not match */
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by antlr before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum,alt) ::= <<
case <altNum>:
    <@prealt()>
    <alt>
    break;<\n>
>>

/**
An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
    <@declarations()>
    <@initializations()>
    <elements:element()>
    <rew>
    <@cleanup()>
}
>>

// E L E M E N T S
/** What to emit when there is no rewrite. For auto build

```

```

* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

/** Dump the elements one per line */
element(e) ::= <<
<@prematch(>
<e.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<if(label)><label> = <endif> this->matchToken(<token>, &FOLLOW_<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
list_<label>.push_back(<elem>);
>>

/** match a character */
charRef(char,label)
::= <<
<if(label)>
<label> = this->LA(1);<\n>
<endif>
this->matchc(<char>);
<checkRuleBacktrackFailure(>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = this->LA(1);<\n>
<endif>
this->matchRange(<a>, <b>);
<checkRuleBacktrackFailure(>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,terminalOptions,postmatchCode="") ::= <<

```

```

<if(label)>
<if(LEXER)>
<label>= this->LA(1);<\n>
<else>
<label>=(<labelType>) this->LT(1);<\n>
<endif>
<endif>
if ( <s> )
{
    this->consume();
    <postmatchCode>
<if(!LEXER)>
    this->set_perror_recovery(false);
<endif>
    <if(backtracking)> this->set_failedflag(false); <\n><endif>
}
else
{
    <ruleBacktrackFailure()>
    <mismatchedSetEx()>
    <@mismatchedSetException()>
<if(LEXER)>
    this->recover();
<else>
<! use following code to make it recover inline;
    this->recoverFromMismatchedSet(&FOLLOW_set_in_<ruleName><elementIndex>);
!>
<endif>
    goto rule<ruleDescriptor.name>Ex;
}<\n>
>>

mismatchedSetEx()
::= <<
new ANTLR_Exception<< <name>ImplTraits, MISMATCHED_SET_EXCEPTION, StreamType>( this->get_rec(),
"" );
<if(PARSER)>
this->get_exception()->set_expectngSet(NULL);
<! use following code to make it recover inline;
this->get_exception()->set_expectngSet( &FOLLOW_set_in_<ruleName><elementIndex> );
!>
<endif>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>

```

```

<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label,elementIndex) ::= <<
<if(label)>
ANTLR_MARKER <label>Start = this->getCharIndex();
ANTLR_UINT32 <label>StartLine<elementIndex> = this->getLine();
ANTLR_UINT32 <label>StartCharPos<elementIndex> = this->getCharPositionInLine();
this->matchs(<string>);
<checkRuleBacktrackFailure()>
<label> = new CommonTokenType;
<label>->set_type( CommonTokenType::TOKEN_INVALID );
<label>->set_startIndex( <label>Start);
<label>->set_stopIndex(
    this->getCharIndex()-1);
<label>->set_input( this->get_input() );
<label>->set_line( <label>StartLine<elementIndex> );
<label>->set_charPositionInLine( <label>StartCharPos<elementIndex> );
<else>
this->matchs(<string>);
<checkRuleBacktrackFailure()><\n>
<endif>
>>

wildcard(token,label,elementIndex,terminalOptions) ::= <<
<if(label)>
<label>=(<labelType>)this->LT(1);<\n>
<endif>
this->matchAnyToken();
<checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = this->LA(1);<\n>
<endif>
this->matchAny();
<checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<

```



```

<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type
 * Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
this->followPush(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)>m_<scope:delegateName()-><endif><rule.name><(if(args)><args;
separator=", "><endif>);<n>
this->followPop();
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
/* <description> */
<if(label)>
{
  ANTLR_MARKER <label>Start<elementIndex> = this->getCharIndex();
  ANTLR_UINT32 <label>StartLine<elementIndex> = this->getLine();
  ANTLR_UINT32 <label>StartCharPos<elementIndex>
= this->getCharPositionInLine();
  <if(scope)>m_<scope:delegateName()-><endif>m<rule.name><(if(scope)>m_<scope:delegateName()-><endif>
<if(args)>, <endif><args; separator=", ">;
  <checkRuleBacktrackFailure()>
  <label> = new CommonTokenType();
  <label>->set_type( CommonTokenType::TOKEN_INVALID);
  <label>->set_startIndex( <label>Start<elementIndex> );
  <label>->set_stopIndex( this->getCharIndex()-1 );
  <label>->set_input( this->get_input() );
  <label>->set_line( <label>StartLine<elementIndex> );
  <label>->set_charPositionInLine( <label>StartCharPos<elementIndex> );

```

```

}
<else>
<if(scope)>m_<scope:delegateName()-><endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
{
    ANTLR_UINT32 <label>Start<elementIndex>;
    ANTLR_UINT32 <label>StartLine<elementIndex> = this->getLine();
    ANTLR_UINT32 <label>StartCharPos<elementIndex> = this->getCharPositionInLine();
    <labelType> <label>;
    <label>Start<elementIndex> = this->getCharIndex();
    this->matchc(ANTLR_CHARSTREAM_EOF);
    <checkRuleBacktrackFailure()>
    <label> = new CommonTokenType();
    <label>->set_type( CommonTokenType::TOKEN_EOF );
    <label>->set_startIndex(<label>Start<elementIndex>);
    <label>->set_stopIndex(this->getCharIndex()-1);
    <label>->set_input( this->get_input() );
    <label>->set_line( <label>StartLine<elementIndex> );
    <label>->set_charPositionInLine( <label>StartCharPos<elementIndex> );
}
<else>
    this->matchc(ANTLR_CHARSTREAM_EOF);
    <checkRuleBacktrackFailure()>
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction()
    ::= "root_0=$<ruleName>_primary.tree;"
recRuleSetReturnAction(src,name) ::= "$<name>=$<src>.<name>;"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList, enclosingTreeLevel, treeLevel) ::= <<

```

```

<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( this->LA(1)== CommonTokenType::TOKEN_DOWN ) {
    this->matchToken(CommonTokenType::TOKEN_DOWN, NULL);
    <checkRuleBacktrackFailure()>
    <children:element()>
    this->matchToken(CommonTokenType::TOKEN_UP, NULL);
    <checkRuleBacktrackFailure()>
}
<else>
this->matchToken(CommonTokenType::TOKEN_DOWN, NULL);
<checkRuleBacktrackFailure()>
<children:element()>
this->matchToken(CommonTokenType::TOKEN_UP, NULL);
<checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if
( !( <evalPredicate(...)> ) )
{
    <ruleBacktrackFailure()>
    <newFPE(...)>
}
>>

newFPE() ::= <<
ExceptionBaseType* ex = new ANTLR_Exception<< <name>ImplTraits, FAILED_PREDICATE_EXCEPTION,
StreamType>( this->get_rec(), "<description>" );
ex->set_ruleName( "<ruleName>" );
<\n>
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<

{
    int LA<decisionNumber>_<stateNumber> = this->LA(<k>);
    <edges; separator="\nelse ">
    else
    {
    <if(eotPredictsAlt)>

```

```

    alt<decisionNumber>=<eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>

    <newNVException()>
    goto rule<ruleDescriptor.name>Ex;

<endif>
}
}
>>

newNVException() ::= <<
ExceptionBaseType* ex = new ANTLR_Exception\< <name>ImplTraits, NO_VIABLE_ALT_EXCEPTION,
StreamType>( this->get_rec(), "<description>" );
ex->set_decisionNum( <decisionNumber> );
ex->set_state( <stateNumber> );
<@noViableAltException()>
<\n>
>>

/** Same as a normal
DFA state except that we don't examine lookahead
* for the bypass alternative. It delays error detection but this
* is faster, smaller, and more what people expect. For (X)? people
* expect "if ( LA(1)==X ) match(X);" and that's it.
*/
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
    int LA<decisionNumber>_<stateNumber> = this->LA(<k>);
    <edges; separator="\nelse ">
}
>>

/** A DFA state that is actually the loopback decision of a closure
* loop. If end-of-token (EOT) predicts any of the targets then it
* should act like a default clause (i.e., no error can be generated).
* This is used only in the lexer so that for ('a')* on the end of a rule
* anything other than 'a' predicts exiting.
*/

dfaLoopbackStateDecls() ::= <<
ANTLR_UINT32 LA<decisionNumber>_<stateNumber>;
>>
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
    /* dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)

```

```

    */
    int LA<decisionNumber>_<stateNumber> = this->LA(<k>);
    <edges; separator="\nelse "><\n>
    <if(eotPredictsAlt)>
    <if(!edges)>
    alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
    <else>
    else
    {
    alt<decisionNumber>=<eotPredictsAlt>;
    }<\n>
    <endif>
    <endif>
    }
    >>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>";

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ( (<labelExpr><if(predicates)> && (<predicates><endif>))
{
    <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState)
::= <<
switch ( this->LA(<k>))
{
<edges; separator="\n">

default:
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>
    <newNVException()>
    goto rule<ruleDescriptor.name>Ex;<\n>

```

```

<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( this->LA(<k>) )
{
    <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( this->LA(<k>) )
{
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
    alt<decisionNumber>=<eotPredictsAlt>;
    break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{it |case <it>:}; separator="\n">
{
    <targetState>
}
    break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The
 * <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = cdfa<decisionNumber>.predict(this, this->get_rec(), this->get_istream(),
cdfa<decisionNumber> );
<checkRuleBacktrackFailure()>
>>

/* Dump DFA tables as static initialized arrays of shorts(16 bits)/characters(8 bits)
 * which are then used to statically initialize the dfa structure, which means that there
 * is no runtime initialization whatsoever, other than anything the C compiler might
 * need to generate. In general the C compiler will lay out memory such that there is no

```

```

* runtime code required.
*/
cyclicDFA(dfa) ::= <<
/** Static dfa state tables for Cyclic dfa:
* <dfa.description>
*/
static const ANTLR_INT32 dfa<dfa.decisionNumber>_eot[<dfa.numberofStates>] =
{
<dfa.eot; wrap="\n", separator=", ", null="-1">
};
static const ANTLR_INT32 dfa<dfa.decisionNumber>_eof[<dfa.numberofStates>] =
{
<dfa.eof; wrap="\n", separator=", ", null="-1">
};
static const ANTLR_INT32 dfa<dfa.decisionNumber>_min[<dfa.numberofStates>] =
{
<dfa.min; wrap="\n", separator=", ", null="-1">
};
static const ANTLR_INT32 dfa<dfa.decisionNumber>_max[<dfa.numberofStates>] =
{
<dfa.max; wrap="\n", separator=", ", null="-1">
};
static const ANTLR_INT32 dfa<dfa.decisionNumber>_accept[<dfa.numberofStates>] =
{
<dfa.accept; wrap="\n", separator=", ", null="-1">
};
static const ANTLR_INT32 dfa<dfa.decisionNumber>_special[<dfa.numberofStates>] =
{
<dfa.special; wrap="\n", separator=", ", null="-1">
};

/** Used when there is no transition table entry for a particular state */
static const ANTLR_INT32* dfa<dfa.decisionNumber>_T_empty = NULL;

<dfa.edgeTransitionClassMap.keys:{ table |
static const ANTLR_INT32 dfa<dfa.decisionNumber>_T<i0>[] =
{
<table; separator=", ", wrap="\n", null="-1">
\};<\n>}; null = "">

/* Transition tables are a table of sub tables, with some tables
* reused for efficiency.
*/
static const ANTLR_INT32 * const dfa<dfa.decisionNumber>_transitions[] =
{
<dfa.transitionEdgeTables:{ xref[dfa<dfa.decisionNumber>_T<xref>]; separator=", ", wrap="\n", null="NULL">
};

```

```

<@errorMethod()>

/* Declare tracking structure for Cyclic DFA <dfa.decisionNumber>
*/
class <name>CyclicDFA<dfa.decisionNumber> : public CyclicDFA\< <name>ImplTraits, <name> >, public
<name>Tokens
{
public:
typedef CyclicDFA\< <name>ImplTraits, <name> > BaseType;
typedef BaseType::ContextType CtxType;

private:
<if(dfa.specialStateSTs)>
//to maintain C-Target compatibility, we need to make some of ctx functions look like member funcs
CtxType* m_ctx;
<endif>

public:
<name>CyclicDFA<dfa.decisionNumber>( ANTLR_INT32 decisionNumber
    , const ANTLR_UCHAR* description
    , const ANTLR_INT32* const eot
    , const ANTLR_INT32* const eof
    , const ANTLR_INT32* const min
    , const ANTLR_INT32* const max
    , const ANTLR_INT32* const accept
    , const ANTLR_INT32* const special
    ,
const ANTLR_INT32* const *const transition)
    :BaseType( decisionNumber, description, eot, eof, min, max, accept,
    special, transition )
{
<if(dfa.specialStateSTs)>
m_ctx = NULL;
<endif>
}

<if(dfa.specialStateSTs)>
ANTLR_UINT32 LA(ANTLR_INT32 i)
{
    return m_ctx->LA(i);
}

<if(PARSER)>
const CtxType::CommonTokenType* LT(ANTLR_INT32 k)
{
    return m_ctx->LT(k);
}
<endif>

```



```

<if(synpreds)>
template<typename PredType>
bool msynpred( PredType pred )
{
    return m_ctx->msynpred(pred);
}
<endif>

ANTLR_INT32 specialStateTransition(CtxType * ctx, RecognizerType* recognizer, IntStreamType* is,
ANTLR_INT32 s)
{
    ANTLR_INT32 _s;

    m_ctx = ctx;
    _s = s;
    switch (s)
    {
        <dfa.specialStateSTs:{state |
        case <i0>:

<state>}; separator="\n">
    }
<if(backtracking)>
    if ( ctx->get_backtracking() > 0)
    {
        ctx->set_failedflag( true );
        return -1;
    }
<endif>
    ExceptionBaseType* ex = new ANTLR_Exception<< <name>ImplTraits, NO_VIABLE_ALT_EXCEPTION,
StreamType>( recognizer, "<dfa.description>" );
    ex->set_decisionNum( <dfa.decisionNumber> );
    ex->set_state(_s);
    <@noViableAltException()>
    return -1;
}
<endif>
};

static <name>CyclicDFA<dfa.decisionNumber> cdfa<dfa.decisionNumber>(
    <dfa.decisionNumber>, /* Decision number of this dfa */
    /* Which decision this represents: */
    (const ANTLR_UCHAR*)<dfa.description>,
    dfa<dfa.decisionNumber>_eot, /* EOT table */
    dfa<dfa.decisionNumber>_eof, /* EOF table */
    dfa<dfa.decisionNumber>_min, /* Minimum tokens for each state */
    dfa<dfa.decisionNumber>_max, /* Maximum tokens for each state */

```

```

dfa<dfa.decisionNumber>_accept, /* Accept table */
dfa<dfa.decisionNumber>_special, /* Special transition states */
dfa<dfa.decisionNumber>_transitions /* Table of transition
tables */

);

/* End of Cyclic DFA <dfa.decisionNumber>
* -----
*/
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
* state.
*/
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
{
  ANTLR_UINT32 LA<decisionNumber>_<stateNumber>;<\n>
  ANTLR_MARKER index<decisionNumber>_<stateNumber>;<\n>

  LA<decisionNumber>_<stateNumber> = ctx->LA(1);<\n>
  <if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
  index<decisionNumber>_<stateNumber> = ctx->index();<\n>
  ctx->rewindLast();<\n>
  <endif>
  s = -1;
  <edges; separator="\nelse ">
  <if(semPredState)> <! return input cursor to state before we rewound !>
  ctx->seek(index<decisionNumber>_<stateNumber>);<\n>
  <endif>
  if ( s>=0 )
  {
    return s;
  }
}
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
* state to jump to next if successful.
*/
cyclicDFAEdge(labelExpr,
targetStateNumber, edgeNumber, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> )
{
  s = <targetStateNumber>;
}<\n>

```

```

>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "( (<left> ) && (<right> ) )"

orPredicates(operands) ::= "(<operands:{o|(<o>)}; separator=\"||\">)"

notPredicate(pred) ::= "!(<evalPredicate(pred,{})>)"

evalPredicate(pred,description) ::= "(<pred>)"

evalSynPredicate(pred,description) ::= "this->msynpred( antlr3::ClassForwarder\<<pred>>() )"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "this->LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt)
::= <%
((LA<decisionNumber>_<stateNumber> >= <lower>) && (LA<decisionNumber>_<stateNumber> \<= <upper>))
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "((this->LA(<k>) >=
<lower>) && (this->LA(<k>) \<= <upper>))"

setTest(ranges) ::= "<ranges; separator=\" || \">"

// A T T R I B U T E S

makeScopeSet() ::= <<
/* makeScopeSet()
 */
/** Definition of the <scope.name> scope variable tracking
 * structure. An instance of this structure is created by calling
 * <name>_<scope.name>Push().
 */

```

```

struct <scopeStruct(sname=scope.name,...)>
{
/* =====
* Programmer defined variables...
*/
<scope.attributes:{it |<it.decl>;}; separator="\n">

/* End of programmer defined variables
* =====
*/
};

>>

```

```

globalAttributeScopeDecl(scope)
::= <<
<if(scope.attributes)>
/* globalAttributeScopeDecl(scope)
*/
<makeScopeSet(...)>
<endif>
>>

```

```

ruleAttributeScopeDecl(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeDecl(scope)
*/
<makeScopeSet(...)>
<endif>
>>

```

```

globalAttributeScopeDef(scope) ::=
<<
/* globalAttributeScopeDef(scope)
*/
<if(scope.attributes)>

```

```

StackType\< <scopeStruct(sname=scope.name)> > <scopeStack(sname=scope.name)>;

<endif>
>>

```

```

ruleAttributeScopeDef(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeDef(scope)
*/
StackType\< <scopeStruct(sname=scope.name)> > <scopeStack(sname=scope.name,...)>;

```

```

<endif>
>>

scopeStruct(sname) ::= <<
<sname>Scope
>>

scopeStack(sname) ::= <<
m_<sname>_stack
>>

returnStructName(r) ::= "<r.name>_return"

returnType() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>::<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
<else>
bool
<endif>
%>

/**
Generate the C type associated with a single or multiple return
* value(s).
*/
ruleLabelType(referencedRule) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
%>

delegateName(d) ::= <<
<if(d.label)><d.label><else>g<d.name><endif>
>>

```

```

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "0".
 */
initValue(typeName) ::= <<
= <cTypeInitMap.(typeName)>
>>

/** Define a rule label */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text>;
>>

/** Rule label default value */
ruleLabelInitVal(label) ::= <<
>>

ASTLabelType() ::=
"<if(recognizer.ASTLabelType)><recognizer.ASTLabelType><else>ImplTraits::TreeType*<endif>"

/** Define a return struct for a rule if the
code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
struct <ruleDescriptor:returnStructName()> : public <name>ImplTraits::RuleReturnValueType
{
public:
typedef <name>ImplTraits::RuleReturnValueType BaseType;
<ruleDescriptor:returnStructName()>()
: BaseType()
<if(scope)>, <scope.attributes:{it | <it.name>() } ; separator=","><endif>
{ init(); }
<ruleDescriptor:returnStructName()>( BaseParserType* parser )
: BaseType(parser)
<if(scope)>, <scope.attributes:{it | <it.name>() } ; separator=","><endif>
{ init(); }
<ruleDescriptor:returnStructName()>( const <ruleDescriptor:returnStructName()>& other )
: BaseType(other)
<if(scope)>, <scope.attributes:{it | <it.name>(other.<it.name>) } ; separator=","><endif>
{ copy(other);
}
~<ruleDescriptor:returnStructName()>()
{
<@ruleReturnMembersDelete>

```

```

}

<ruleDescriptor:returnStructName()>&
operator=( const <ruleDescriptor:returnStructName()>& other )
{
    BaseType::operator=( other );
    <if(scope)><scope.attributes:{it | <it.name> = other.<it.name>; }; separator="\n"><endif>
    copy(other);
    return *this;
}
<@ruleReturnMembers()>
void init() { <@ruleReturnMembersInit()> }
void copy( const <ruleDescriptor:returnStructName()>& other ) { <@ruleReturnMembersCopy()> }
<else>
struct <ruleDescriptor:returnStructName()>
{
public:
    <name>ImplTraits::<recognizer.ASTLabelType>    start;
    <name>ImplTraits::<recognizer.ASTLabelType>    stop;
    <ruleDescriptor:returnStructName()>( const <ruleDescriptor:returnStructName()>& other )
    <if(scope.attributes)>
    <scope.attributes:{it | <it.name>(other.<it.name>) }; separator=", ">
    <endif>
    {
        start = other.start;
        stop
    = other.stop;
    }

    <ruleDescriptor:returnStructName()>&
    operator=( const <ruleDescriptor:returnStructName()>& other )
    {
        start = other.start;
        stop = other.stop;

        <scope.attributes:{it | <it.name> = other.<it.name>; }; separator="\n">
        return *this;
    }
<endif>
    <if(scope)><scope.attributes:{it |<it.type> <it.name>; }; separator="\n"><endif>
};

<endif>
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{it |<it.decl>; }; separator=", ">

```

```

>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name>=<expr>";

/** Note that the scopeAttributeRef does not have access to the
 * grammar name directly
 */
scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
  m_<scope>_stack.at( m_<scope>_stack.size()-<negIndex>-1).<attr.name>
<else>
<if(index)>
  m_<scope>_stack.at(<index>).<attr.name>
<else>
  m_<scope>_stack.peek().<attr.name>
<endif>
<endif>
%>

scopeSetAttributeRef(scope,attr,expr,index,negIndex)
 ::= <%
<if(negIndex)>
  m_<scope>_stack.at( m_<scope>_stack.size()-<negIndex>-1).<attr.name> = <expr>;
<else>
<if(index)>
  m_<scope>_stack.at(<index>).<attr.name> = <expr>;
<else>
  m_<scope>_stack.peek().<attr.name> =<expr>;
<endif>
<endif>
%>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<scope>.<attr.name>
<else>
<scope>
<endif>
>>

```



```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>=<expr>;
<else>
<attr.name>=<expr>;
<endif>
>>

/**
How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach
//
tokenLabelPropertyRef_text(scope,attr) ::= "<scope>->getText()"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>->get_type()"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>->get_line()"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>->get_charPositionInLine()"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>->get_channel()"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>->get_tokenIndex()"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>->get_tree()"
tokenLabelPropertyRef_int(scope,attr) ::= "<name>ImplTraits::ConvertToInt32(<scope>->getText())"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::=
"<scope>.tree"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(this->get_strstream()->toStringSS(<scope>.start, <scope>.start))
<else>
(this->get_strstream()->toStringTT(<scope>.start, <scope>.stop))
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>.st"

```

```

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "<scope>->get_type()"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "<scope>->get_line()"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "<scope>->get_charPositionInLine()"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "<scope>->get_channel()"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "<scope>->get_tokenIndex()"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "<scope>->getText()"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.start"
rulePropertyRef_stop(scope,attr) ::= "retval.stop"
rulePropertyRef_tree(scope,attr)
  ::= "retval.tree"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
this->get_input()->toStringSS( this->get_adaptor()->getTokenStartIndex(retval.start), this->get_adaptor()-
>getTokenStopIndex(retval.start))
<else>
this->get_strstream()->toStringTT(retval.start, this->LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "this->getText()"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "this->get_state()->get_tokenStartLine()"
lexerRulePropertyRef_pos(scope,attr) ::= "this->get_state()->get_tokenStartCharPositionInLine()"
lexerRulePropertyRef_channel(scope,attr) ::= "this->get_state()->get_channel()"
lexerRulePropertyRef_start(scope,attr) ::= "this->get_state()->get_tokenStartCharIndex()"
lexerRulePropertyRef_stop(scope,attr) ::= "(this->getCharIndex()-1)"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_int(scope,attr)
  ::= "(<name>ImplTraits::ConvertToInt32(<scope>->getText()))"

// setting $st and $tree is allowed in local rule. everything else is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree=<expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st=<expr>;"

/** How to deal with an @after for C targets. Because we cannot rely on
 * any garbage collection, after code is executed even in backtracking
 * mode. Must be documented clearly.
 */
execAfter(action) ::= <<

```

```

{
  <action>
}
>>

/** How to execute an action (when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if ( <actions.(actionScope).synpredgate> )
{
  <action>
}
<else>
if ( BACKTRACKING == 0 )
{
  <action>
}
<endif>
<else>
{
  <action>
}
<endif>
>>

// M I S C (properties, etc...)

bitsetDeclare(bitsetname, words64, traits) ::= <<

/** Bitset defining follow set for error recovery in rule state: <name> */
static ANTLR_BITWORD
<bitsetname>_bits[] = { <words64:{it |ANTLR_UINT64_LIT(<it>)}; separator=", "> };
static <traits>::BitsetListType <bitsetname>( <bitsetname>_bits, <length(words64)> );
>>

codeFileExtension() ::= ".cpp"

true_value() ::= "true"
false_value() ::= "false"

Found in path(s):
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Cpp/Cpp.stg
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 */

 /** Template overrides to add debugging to AST stuff. Dynamic inheritance
 * hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.
 */

```

parserMembers() ::= <<
protected DebugTreeAdaptor adaptor;

public ITreeAdaptor TreeAdaptor
{
  get
  {
    return adaptor;
  }
  set
  {
<if(grammar.grammarIsRoot)>
    this.adaptor = new DebugTreeAdaptor(dbg, adaptor);
<else>
    this.adaptor
  
```

```

    = (DebugTreeAdaptor)adaptor; // delegator sends dbg adaptor
<endif><\n>
    <grammar.directDelegates:{g|<g.delegateName()>.TreeAdaptor = this.adaptor;}>
    }
} <\n>
>>

```

```

parserCtorBody() ::= <<
<super.parserCtorBody()>
>>

```

```

createListenerAndHandshake() ::= <<
DebugEventSocketProxy proxy = new DebugEventSocketProxy( this, port,
<if(TREE_PARSER)>input.TreeAdaptor<else>adaptor<endif> );
DebugListener = proxy;
<inputStreamType> = new Debug<inputStreamType>( input, proxy );
try
{
    proxy.Handshake();
}
catch ( IOException ioe )
{
    ReportError( ioe );
}
>>

```

```

@ctorForRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
proxy.TreeAdaptor = adap;
>>

```

```

@ctorForProfilingRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
>>

```

```

@ctorForPredefinedListener.superClassRef() ::= " : base( input, dbg )"

```

```

@ctorForPredefinedListener.finally() ::= <<
<if(grammar.grammarIsRoot)><! don't create new
adaptor for delegates !>
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;<\n>
<endif>
>>

```

```

//@rewriteElement.pregen() ::= "dbg.Location( <e.line>, <e.pos> );"

```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/CSharp2/ASTDbg.stg

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* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Python/Dbg.stg

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Python3/Dbg.stg

*

/opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Python/ST.stg

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* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Java/ASTParser.stg

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*/

/** How to generate rules derived from left-recursive rules.

* These rely on recRuleDefArg(), recRuleAltPredicate(),

* recRuleArg(), recRuleSetResultAction(), recRuleSetReturnAction()

* templates in main language.stg

*/

group LeftRecursiveRules;

recRuleName(ruleName) ::= "<ruleName>_"

recPrimaryName(ruleName) ::= "<ruleName>_primary"

recRuleStart(ruleName, minPrec, userRetvals, userRetvalAssignments) ::= <<

<ruleName><if(userRetvals)> returns [<userRetvals>]<endif>

: <recRuleName(...)>[<minPrec>]

<if(userRetvals)>

{

<userRetvalAssignments; separator="\n">

}

<endif>

;

>>

recRule(ruleName, precArgDef, argName, alts, setResultAction, buildAST,

userRetvals, userRetvalAssignments) ::= <<

<recRuleName(...)>[<precArgDef>]<if(userRetvals)> returns [<userRetvals>]<endif>

: <recPrimaryName(...)>

<if(buildAST)>

{

<setResultAction>

}

<endif>

<if(userRetvals)>

{

<userRetvalAssignments; separator="\n">

}

<endif>

(options {backtrack=false;})

```

: ( options { backtrack=false;}
  : <alts; separator="\n | ">
  )
)*
;
>>

```

```

recPrimaryRule(ruleName, alts, userRetvals) ::= <<
<recPrimaryName(...)><if(userRetvals)> returns [<userRetvals>]<endif>
options { backtrack=true;}
  : <alts; separator="\n | ">
  ;
>>

```

```

recRuleAlt(alt, pred) ::= "{<pred>}?=> <alt>"

```

```

recRuleRef(ruleName, arg) ::= "<recRuleName(...)>[<arg>]"

```

Found

in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
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```

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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

/* addition memVars for returnscopes */

@returnScopeInterface.memVars() ::= <<

/* ASTTreeParser returnScopeInterface.memVars

*/

<recognizer.ASTLabelType; null="CommonTree"> *tree;

>>

/** the interface of returnScope methodsDecl */

@returnScopeInterface.methodsDecl() ::= <<

/* ASTTreeParser returnScopeInterface.methodsDecl */

- (<recognizer.ASTLabelType; null="CommonTree"> *)getTree;

- (void) setTree:(<recognizer.ASTLabelType; null="CommonTree"> *)aTree;<n>

>>

/** the implementation of returnScope methods */

@returnScope.methods() ::= <<

/* ASTTreeParser returnScope.methods */

- (<ASTLabelType> *)getTree

{

return tree;

}

- (void) setTree:(<ASTLabelType> *)aTree

{

if (tree != aTree) {

if (tree != nil) [tree release];

if (aTree != nil) [aTree retain];

tree = aTree;

}

}

```

- (void) dealloc
{
    [self setTree:nil];
    [super dealloc];
}

@synthesize tree;
>>

@returnScopeProperties() ::= <<
@property (retain) <recognizer.ASTLabelType; null="CommonTree"> *tree;
>>

/** Add a variable to track last element matched */
ruleDeclarations() ::= <<
/* ASTTreeParser
ruleDeclarations */
<super.ruleDeclarations()>
<ASTLabelType> *_first_0 = nil;
<ASTLabelType> *_last = nil;<\n>
>>

/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
/* ASTTreeParser noRewrite */
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(rewriteMode)>
retval.tree = (<ASTLabelType> *)_first_0;
if ( [treeAdaptor getParent:retval.tree] != nil && [treeAdaptor isNil:[treeAdaptor getParent:retval.tree]] ) )
    retval.tree = (<ASTLabelType> *)[treeAdaptor getParent:retval.tree];
<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
    enclosingTreeLevel, treeLevel) ::= <<
/* ASTTreeParser tree */
_last = (<ASTLabelType> *)[input LT:1];
{
<ASTLabelType> *_save_last_<treeLevel> = _last;
<ASTLabelType> *_first_<treeLevel> = nil;
<if(!rewriteMode)>
<ASTLabelType>

```

```

*root_<treeLevel> = [[[treeAdaptor class] newEmptyTree] retain];
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
<if(root.el.rule)>
if ( _first_<enclosingTreeLevel>==nil ) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if ( _first_<enclosingTreeLevel>==nil ) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( [input LA:1] == TokenTypeDOWN ) {
  [self match:input TokenType:TokenTypeDOWN Follow:nil]; <checkRuleBacktrackFailure()>
  <children:element()>
  [self match:input TokenType:TokenTypeUP Follow:nil]; <checkRuleBacktrackFailure()>
}
<else>
[self match:input TokenType:TokenTypeDOWN Follow:nil]; <checkRuleBacktrackFailure()>
<children:element()>
[self match:input TokenType:TokenTypeUP Follow:nil]; <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
[treeAdaptor addChild:root_<treeLevel> toTree:root_<enclosingTreeLevel>];
<endif>
_last
= _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex,terminalOptions) ::= <<
/* ASTTreeParser tokenRefBang */
_last = (<ASTLabelType> *)[input LT:1];
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
/* ASTTreeParser tokenRef */
_last = (<ASTLabelType> *)[input LT:1];
<super.tokenRef(...)>
<if(!rewriteMode)>

```

```

<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
  <label>_tree = [<terminalOptions.node> new<terminalOptions.node>:<label>];
<else>
  <label>_tree = (<ASTLabelType> *)[treeAdaptor dupNode:<label>];
<endif><\n>
  [treeAdaptor addChild:<label>_tree toTree:root_<treeLevel>];
<if(backtracking)><endif>
<else><! rewrite mode !>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
if ( _first_<treeLevel>==nil
) _first_<treeLevel> = <label>;
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
/* ASTTreeParser tokenRefAndListLabel */
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex) ::= <<
/* ASTTreeParser tokenRefRuleRoot */
_last = (<ASTLabelType> *)[input LT:1];
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = [<terminalOptions.node> new<terminalOptions.node>:<label>];
<else>
<label>_tree = (<ASTLabelType> *)[treeAdaptor dupNode:<label>];
<endif><\n>
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:<label>_tree old:root_<treeLevel>];
<if(backtracking)><endif>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
/* ASTTreeParser tokenRefRuleRootAndListLabel
*/
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard and auto dup the node/subtree */

```

```

wildcard(token,label,elementIndex,terminalOptions) ::= <<
/* ASTTreeParser wildcard */
_last = (<ASTLabelType> *)[input LT:1];
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<label>_tree = (<ASTLabelType> *)[adaptor dupTree:<label>];
[adaptor addChild:<label>_tree toTree:root_<treeLevel>];
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
if ( _first_<treeLevel> == nil ) _first_<treeLevel> = <label>;
<endif>
>>

// SET AST

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
/* ASTTreeParser matchSet */
_last = (<ASTLabelType> *)[input LT:1];
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = [<terminalOptions.node>
new<terminalOptions.node>:<label>];
<else>
<label>_tree = (<ASTLabelType> *)[adaptor dupNode:<label>];
<endif><\n>
[adaptor addChild:<label>_tree toTree:root_<treeLevel>];
<if(backtracking)>}\}<endif>
<endif>
}, ...
)>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
/* ASTTreeParser matchRuleBlockSet */
<matchSet(...)>
<noRewrite(...)> <! set return tree !>
>>

matchSetBang(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
/* ASTTreeParser matchSetBang */
_last = (<ASTLabelType> *)[input LT:1];
<super.matchSet(...)>
>>

```

```

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
/* ASTTreeParser matchSetRuleRoot */
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = [<terminalOptions.node> new<terminalOptions.node>:<label>];
<else>
<label>_tree = (<ASTLabelType> *)[adaptor dupNode:<label>];
<endif><\n>
root_<treeLevel>
= (<ASTLabelType> *)[adaptor becomeRoot:<label>_tree old:root_<treeLevel>];
<if(backtracking)>\}<endif>
<endif>
}, ...
)>
>>

```

```
// RULE REF AST
```

```

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRef */
_last = (<ASTLabelType> *)[input LT:1];
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>
<if(!rewriteMode)>
  [treeAdaptor addChild:<label>.tree toTree:root_<treeLevel>];
<else> <! rewrite mode !>
if ( _first_<treeLevel> == nil ) _first_<treeLevel> = <label>.tree;
<endif>
>>

```

```

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRefAndListLabel */
<ruleRef(...)>
<! <listLabel(elem = "["+label+" getTree]",...)> !>
<listLabel(elem = {[<label> getTree]},...)>
>>

```

```

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRefRuleRoot */
_last = (<ASTLabelType> *)[input LT:1];
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if

```

```

( state.backtracking == 0 ) <endif>
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:<label>.tree old:root_<treeLevel>];
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRefRuleRootAndListLabel */
<ruleRefRuleRoot(...)>
<listLabel(elem = {[<label> getTree]},...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRefTrack */
_last = (<ASTLabelType> *)[input LT:1];
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRefTrackAndListLabel */
_last = (<ASTLabelType> *)[input LT:1];
<super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser
ruleRefRuleRootTrack */
_last = (<ASTLabelType> *)[input LT:1];
<super.ruleRefRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTTreeParser ruleRefRuleRootTrackAndListLabel */
_last = (<ASTLabelType> *)[input LT:1];
<super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
* change nextToken to nextNode.
*/
createRewriteNodeFromElement(token,terminalOptions,scope) ::= <<
/* ASTTreeParser createRewriteNodeFromElement */
<if(terminalOptions.node)>
<! new <terminalOptions.node>(stream_<token>.nextNode()) !>

```

```

[[[<terminalOptions.node>(stream_<token> alloc] init] nextNode];
<else>
<! stream_<token>.nextNode() !>
[stream_<token> nextNode]
<endif>
>>

ruleCleanUp() ::= <<
/* ASTTreeParser ruleCleanUp */
<super.ruleCleanUp()>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<\n><endif>
retval.tree = (<ASTLabelType> *)[treeAdaptor
rulePostProcessing:root_0];
<if(backtracking)>}<endif>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/ObjC/ASTTreeParser.stg
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```

```

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```



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* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
*/
```

```
@outputFile.imports() ::= <<  
<@super.imports()>
```

```
<if(!TREE_PARSER)>  
<! tree parser would already have imported !>  
using Antlr.Runtime.Tree;  
using RewriteRuleTokenStream = Antlr.Runtime.Tree.RewriteRuleTokenStream;  
<endif>  
>>
```

```
@genericParser.members() ::= <<  
<@super.members()>  
<parserMembers()>  
>>
```

```
parserCtorBody() ::=  
<%  
<super.parserCtorBody()><\n>  
TreeAdaptor =  
<if(actions.(actionScope).treeAdaptorInitializer)>  
<actions.(actionScope).treeAdaptorInitializer>  
<else>  
new <actions.(actionScope).treeAdaptorType; null="CommonTreeAdaptor">()  
<end>  
;  
%>
```

```
/** Add an adaptor property that knows how to build trees */
```

```
parserMembers() ::= <<  
private <treeAdaptorType()> adaptor;  
  
public <treeAdaptorType()> TreeAdaptor  
{  
get  
{  
return adaptor;  
}  
  
set  
{  
this.adaptor = value;  
}
```

```

    <grammar.directDelegates:{g|<g:delegateName()>.TreeAdaptor = this.adaptor;}>
  }
}
>>

treeAdaptorType() ::= <<
<actions.(actionScope).treeAdaptorType; null="ITreeAdaptor">
>>

ruleReturnBaseType() ::= <%
Ast<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope\<<ASTLabelType>, <labelType>>
%>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> root_0 = default(<ASTLabelType>);<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {it|<ASTLabelType>
<it.label.text>_tree = default(<ASTLabelType>);}; separator="\n">
<ruleDescriptor.tokenListLabels: {it|<ASTLabelType> <it.label.text>_tree = default(<ASTLabelType>);};
separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {it|RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>");};
separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
 * These should be turned off if doing rewrites. This must be a "mode"
 * as a rule could have both rewrite and AST within the same alternative
 * block.
 */
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType>)adaptor.Nil();
<endif>
<endif>
<endif>
>>

```

```

// T
racking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefTrack(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/**
 rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.Add(<label>.Tree);
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.Add(<label>.Tree);
>>

```

```

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep,
// ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::= <<
<\n>{
// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {
<endif>
<prevRuleRootRef().Tree = root_0;
<rewriteCodeLabels()>
root_0 = (<ASTLabelType>)adaptor.Nil();
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER&&rewriteMode)>
<prevRuleRootRef().Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
if
(<prevRuleRootRef().Tree != null)
input.ReplaceChildren(adaptor.GetParent(retval.Start), adaptor.GetChildIndex(retval.Start),
adaptor.GetChildIndex(_last), retval.Tree);
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER||!rewriteMode)>
<prevRuleRootRef().Tree = root_0;
<endif>
<if(backtracking)>

```

```

}
<endif>
}

>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
  :{it|RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
  separator="\n"
>
<referencedTokenListLabels
  :{it|RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it> ", list_<it>)};
  separator="\n"
>
<referencedWildcardLabels
  :{it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};
  separator="\n"
>
<referencedWildcardListLabels
  :{it|RewriteRuleSubtreeStream stream_<it>=new
RewriteRuleSubtreeStream(adaptor,"wildcard <it> ",list_<it>)};
  separator="\n"
>
<referencedRuleLabels
  :{it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule
<it>",<it>!=null?<it>.Tree:null)};
  separator="\n"
>
<referencedRuleListLabels
  :{it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"token <it> ",list_<it>)};
  separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
if (<referencedElementsDeep: {el | stream_<el>.HasNext}; separator="||">)

```

```

{
  <alt>
}
<referencedElementsDeep:{el | stream_<el>.Reset();<\n>}>
>>

rewriteClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements,
  // elements in immediately block; no nested blocks
  description) ::=
<<
// <fileName>:<description>
while ( <referencedElements:{el | stream_<el>.HasNext}; separator="||"> )
{
  <alt>
}
<referencedElements:{el | stream_<el>.Reset();<\n>}>
>>

rewritePositiveClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.HasNext}; separator="||">))
{
  throw new RewriteEarlyExitException();
}
while ( <referencedElements:{el | stream_<el>.HasNext}; separator="||"> )
{
  <alt>
}
<referencedElements:{el | stream_<el>.Reset();<\n>}>
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>)
{
  <a.alt>
}
<else>
{
  <a.alt>
}

```

```

}
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
<ASTLabelType>
root_<treeLevel> = (<ASTLabelType>)adaptor.Nil();
<root:rewriteElement()>
<children:rewriteElement()>
adaptor.AddChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <%
<@pregen()>
DebugLocation(<e.line>, <e.pos>);<\n>
<e.el>
%>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,args,terminalOptions={}) ::= <<
adaptor.AddChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(),
root_<treeLevel>);<\n>
>>

/** Gen ^($label ...) where label+=... */

```

```
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot
```

```
/** Gen ^(ID ...) or ^(ID[args] ...) */
```

```
rewriteTokenRefRoot(token,elementIndex,args,terminalOptions={}) ::= <<  
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createRewriteNodeFromElement(...)>,  
root_<treeLevel>);<\n>  
>>
```

```
rewriteImaginaryTokenRef(args,token,elementIndex,terminalOptions={}) ::= <<  
adaptor.AddChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>  
>>
```

```
rewriteImaginaryTokenRefRoot(args,token,elementIndex,terminalOptions={}) ::= <<  
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createImaginaryNode(tokenType=token, ...)>,  
root_<treeLevel>);<\n>  
>>
```

```
/** plain -> {foo} action */
```

```
rewriteAction(action) ::= <<  
root_0 = <action>;<\n>  
>>
```

```
/** What is the name of the previous value of this rule's root tree? This
```

```
* let's us refer to $rule to mean previous value. I am reusing the
```

```
* variable 'tree' sitting
```

```
in retval struct to hold the value of root_0 right
```

```
* before I set it during rewrites. The assign will be to retval.tree.
```

```
*/
```

```
prevRuleRootRef() ::= "retval"
```

```
rewriteRuleRef(rule) ::= <<  
adaptor.AddChild(root_<treeLevel>, stream_<rule>.NextTree());<\n>  
>>
```

```
rewriteRuleRefRoot(rule) ::= <<  
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<rule>.NextNode(), root_<treeLevel>);<\n>  
>>
```

```
rewriteNodeAction(action) ::= <<  
adaptor.AddChild(root_<treeLevel>, <action>);<\n>  
>>
```

```
rewriteNodeActionRoot(action) ::= <<  
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<action>, root_<treeLevel>);<\n>  
>>
```

```
/** Gen $ruleLabel ... where defined via ruleLabel=rule */
```

```
rewriteRuleLabelRef(label) ::= <<
```



```

adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label)
::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

createImaginaryNode(tokenType,args,terminalOptions={ }) ::= <%
<if(terminalOptions.node)>
<! new MethodNode(IDLabel, args) !>
new <terminalOptions.node>(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
(<ASTLabelType>)adaptor.Create(<tokenType>, <args; separator=", "><if(!args)>"<tokenType>"<endif>)
<endif>
%>

createRewriteNodeFromElement(token,args,terminalOptions={ }) ::= <%
<if(terminalOptions.node)>
new <terminalOptions.node>(stream_<token>.NextToken()<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create
new node from old !>
adaptor.Create(<token>, <args; separator=", ">)
<else>
stream_<token>.NextNode()
<endif>
<endif>
%>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp2/AST.stg

```

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```
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 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */
```

```
@outputFile.imports() ::= <<
```

```
<@super.imports(>
```

```
<if(!TREE_PARSER)>
```

```
<! tree parser would already have imported !>
```

```
using Antlr.Runtime.Tree;
```

```
using RewriteRuleTokenStream = Antlr.Runtime.Tree.RewriteRuleTokenStream;
```

```
<endif>
```

```
>>
```

```
@genericParser.members() ::= <<
```

```
<@super.members(>
```

```
<parserMembers(>
```

```

>>

parserCtorBody() ::= <<
<super.parserCtorBody()>
<treeAdaptorType()>
treeAdaptor = default(<treeAdaptorType()>);
CreateTreeAdaptor(ref treeAdaptor);
TreeAdaptor = treeAdaptor<if(!actions.(actionScope).treeAdaptorType)> ?? new CommonTreeAdaptor()<endif>;
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
// Implement this function in your helper file to use a custom tree adaptor
partial void CreateTreeAdaptor(ref <treeAdaptorType()> adaptor);

private <treeAdaptorType()> adaptor;

public <treeAdaptorType()> TreeAdaptor
{
get
{
return adaptor;
}

set
{
this.adaptor = value;
<grammar.directDelegates: {g|<g:delegateName()>.TreeAdaptor = this.adaptor; }>
}
}
>>

treeAdaptorType() ::= <<
<actions.(actionScope).treeAdaptorType; null="ITreeAdaptor">
>>

ruleReturnBaseType() ::= <%
Ast<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope\<<ASTLabelType>, <labelType>>
%>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType>
root_0 = default(<ASTLabelType>);<\n>
>>

ruleLabelDefs(ruleDescriptor, labelType, ASTLabelType, rewriteElementType) ::= <%

```

```

<super.ruleLabelDefs(...)>
<if(!ruleDescriptor.isSynPred)>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {it|<\n><ASTLabelType> <it.label.text>_tree = default(<ASTLabelType>);}>
<ruleDescriptor.tokenListLabels: {it|<\n><ASTLabelType> <it.label.text>_tree = default(<ASTLabelType>);}>
<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {it|<\n>RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}>
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {it|<\n>RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>");}>
<endif>
%>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same
alternative
* block.
*/
@alt.declarations() ::= <<
<if(autoAST && outerAlt && !rewriteMode && !ruleDescriptor.isSynPred)>
root_0 = (<ASTLabelType>)adaptor.Nil();
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
* to the tracking list stream_ID for use in the rewrite.
*/
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRefTrack(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);
>>

/**

```

```

Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.Add(<label>.Tree);
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.Add(<label>.Tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope)
::= <<
<ruleRefRuleRootTrack(...)>
<listLabelElem(elem={<label>.Tree},elemType=ASTLabelType,...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::= <<
<\n>{
// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">

```

```

// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {
<endif>
<prevRuleRootRef().Tree = root_0;
<rewriteCodeLabels()>
root_0 = (<ASTLabelType>)adaptor.Nil();
<alts:rewriteAlt();
separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER&&rewriteMode)>
<prevRuleRootRef().Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
if (<prevRuleRootRef().Tree != null)
input.ReplaceChildren(adaptor.GetParent(retval.Start), adaptor.GetChildIndex(retval.Start),
adaptor.GetChildIndex(_last), retval.Tree);
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER||!rewriteMode)>
<prevRuleRootRef().Tree = root_0;
<endif>
<if(backtracking)>
}
<endif>
}
}

>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
:{it|RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
separator="\n"
>
<referencedTokenListLabels
:{it|RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it> ", list_<it>)};
separator="\n"
>
<referencedWildcardLabels
:{it|RewriteRuleSubtreeStream
stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};
separator="\n"
>
<referencedWildcardListLabels
:{it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it> ",list_<it>)};
separator="\n"

```

```

>
<referencedRuleLabels
: {it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule
<it>",<it>!=null?<it>.Tree:null);};
separator="\n"
>
<referencedRuleListLabels
: {it|RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"token <it>",<it>.list_<it>);};
separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
if (<referencedElementsDeep:{el | stream_<el>.HasNext}; separator="||">)
{
<alt>
}
<referencedElementsDeep:{el
| stream_<el>.Reset();<\n>}>
>>

rewriteClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
while ( <referencedElements:{el | stream_<el>.HasNext}; separator="||"> )
{
<alt>
}
<referencedElements:{el | stream_<el>.Reset();<\n>}>
>>

rewritePositiveClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks

```

```

description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.HasNext}; separator="||">))
{
throw new RewriteEarlyExitException();
}
while ( <referencedElements:{el | stream_<el>.HasNext}; separator="||"> )
{
<alt>
}
<referencedElements:{el | stream_<el>.Reset();<\n>}>
>>

```

```

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>)
{
<a.alt>
}
<else>
{
<a.alt>
}
<endif>
>>

```

```

/** For empty rewrites:
"r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

```

```

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.Nil();
<root:rewriteElement()>
<children:rewriteElement()>
adaptor.AddChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

```

```

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

```

```

rewriteElement(e) ::= <%
<@pregen()>
DebugLocation(<e.line>, <e.pos>);<\n>
<e.el>
%>

```



```

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,args,terminalOptions={}) ::= <<
adaptor.AddChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/**
Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,args,terminalOptions={}) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>);<\n>
>>

rewriteImaginaryTokenRef(args,token,elementIndex,terminalOptions={}) ::= <<
adaptor.AddChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,elementIndex,terminalOptions={}) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>);<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What
is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the

```

```

* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<rule>.NextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<rule>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteNodeAction(action) ::= <<
adaptor.AddChild(root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<action>, root_<treeLevel>);<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label)
::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

createImaginaryNode(tokenType,args,terminalOptions={ }) ::= <%
<if(terminalOptions.node)>

```

```

<! new MethodNode(IDLabel, args) !>
new <terminalOptions.node>(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
(<ASTLabelType>)adaptor.Create(<tokenType>, <args; separator=", "><if(!args)>"<tokenType>"<endif>)
<endif>
%>

```

```

createRewriteNodeFromElement(token,args,terminalOptions={ })
::= <%
<if(terminalOptions.node)>
new <terminalOptions.node>(stream_<token>.NextToken()<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
adaptor.Create(<token>, <args; separator=", ">)
<else>
stream_<token>.NextNode()
<endif>
<endif>
%>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp3/AST.stg

```

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```

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```

```

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```

```

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```

```

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```

```

*

```

```

* Conversion to C#:

```

```

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```

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 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */

/** Template overrides to add debugging to AST stuff. Dynamic inheritance
 * hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.
 */

```
parserMembers() ::= <<
// Implement this function in your helper file to use a custom tree adaptor
partial void InitializeTreeAdaptor();
protected DebugTreeAdaptor adaptor;

public
ITreeAdaptor TreeAdaptor
{
  get
  {
    return adaptor;
  }
  set
  {
<if(grammar.grammarIsRoot)>
    this.adaptor = new DebugTreeAdaptor(dbg,adaptor);
<else>
    this.adaptor = (DebugTreeAdaptor)adaptor; // delegator sends dbg adaptor
<endif><\n>
    <grammar.directDelegates:{g|<g.delegateName()>.TreeAdaptor = this.adaptor;}>
  }
}<\n>
>>
```

```
parserCtorBody() ::= <<
<super.parserCtorBody()>
>>
```

```
createListenerAndHandshake() ::= <<
DebugEventSocketProxy proxy = new DebugEventSocketProxy( this, port,
<if(TREE_PARSER)>input.TreeAdaptor<else>adaptor<endif> );
DebugListener = proxy;
<inputStreamType> = new Debug<inputStreamType>( input, proxy );
try
```

```
{
  proxy.Handshake();
}
catch ( IOException ioe )
{
  ReportError( ioe );
}
>>
```

```
@ctorForRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
proxy.TreeAdaptor = adap;
>>
```

```
@ctorForProfilingRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
>>
```

```
@ctorForPredefinedListener.superClassRef()
::= " : base( input, dbg )"

```

```
@ctorForPredefinedListener.finally() ::= <<
<if(grammar.grammarIsRoot)><! don't create new adaptor for delegates !>
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;<\n>
<endif>
>>
```

```
//@rewriteElement.pregen() ::= "dbg.Location( <e.line>, <e.pos> );"
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

/** Add a variable to track last

element matched */

```
ruleDeclarations() ::= <<
```

```
<super.ruleDeclarations()>
```

```
<ASTLabelType> _last;<\n>
```

```
<ASTLabelType> _first_0;<\n>
```

```
>>
```

/** Add a variable to track last element matched */

```
ruleInitializations() ::= <<
```

```
<super.ruleInitializations()>
```

```
_last = NULL;<\n>
```

```
_first_0 = NULL;<\n>
```

```
>>
```

/** What to emit when there is no rewrite rule. For auto build

```

* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>
<if(rewriteMode)>
retval.tree = (<ASTLabelType>)_first_0;
if ( ADAPTOR->getParent(ADAPTOR, retval.tree) != NULL && ADAPTOR->isNilNode(ADAPTOR,
ADAPTOR->getParent(ADAPTOR, retval.tree) ) )
{
    retval.tree = (<ASTLabelType>)ADAPTOR->getParent(ADAPTOR, retval.tree);
}
<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
    enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)LT(1);
{
<ASTLabelType>
_save_last_<treeLevel>;
<ASTLabelType> _first_<treeLevel>;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel>;
<endif>
_save_last_<treeLevel> = _last;
_first_<treeLevel> = NULL;
<if(!rewriteMode)>
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>
<if(root.el.rule)>
if ( _first_<enclosingTreeLevel> == NULL ) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if ( _first_<enclosingTreeLevel> == NULL ) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<if(backtracking)>}<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( LA(1)==ANTLR3_TOKEN_DOWN ) {
    MATCHT(ANTLR3_TOKEN_DOWN, NULL);
    <children:element()>

```

```

    MATCHT(ANTLR3_TOKEN_UP, NULL);
}
<else>
MATCHT(ANTLR3_TOKEN_DOWN, NULL);
<children:element()>
MATCHT(ANTLR3_TOKEN_UP, NULL);
<endif>
<if(!rewriteMode)>
ADAPTOR->addChild(ADAPTOR, root_<enclosingTreeLevel>,
    root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex,terminalOptions) ::= <<
_last = (<ASTLabelType>)LT(1);
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
_last = (<ASTLabelType>)LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>
<if(terminalOptions.node)>
<label>_tree = <terminalOptions.node>New(<label>);
<else>
<label>_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);
<endif>
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else>
<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>
if ( _first_<treeLevel> == NULL ) _first_<treeLevel> = <label>;
<if(backtracking)>}<endif>
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions)

```



```

 ::= <<
 <tokenRef(...)>
 <listLabel(elem=label,...)>
 >>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.tokenRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if ( BACKTRACKING == 0 ) {<endif>
 <if(terminalOptions.node)>
 <label>_tree = <terminalOptions.node>New(<label>);
 <else>
 <label>_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);
 <endif><\n>
 root_<treeLevel> = (<ASTLabelType>)ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_<treeLevel>);
 <if(backtracking)>}<endif>
 <endif>
 >>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
 <tokenRefRuleRoot(...)>
 <listLabel(elem=label,...)>
 >>

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,terminalOptions) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.wildcard(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if ( <actions.(actionScope).synpredgate>
 ) {<endif>
 <label>_tree = (<ASTLabelType>)ADAPTOR->dupTree(ADAPTOR, <label>);
 ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <label>_tree);
 <if(backtracking)>}<endif>
 <else> <! rewrite mode !>
 <if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
 if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>;
 <endif>
 >>

// SET AST

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.matchSet(postmatchCode={

```

```

<if(!rewriteMode)>
<if(backtracking)>if ( BACKTRACKING == 0 ) {<endif>
<if(terminalOptions.node)>
<label>_tree = <terminalOptions.node>New(<label>);
<else>
<label>_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);
<endif><\n>
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <label>_tree);
<if(backtracking)>\}<endif>
<endif>
}
,...>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,terminalOptions,elementIndex,postmatchCode)
::= <<
_last = (<ASTLabelType>)LT(1);
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
<if(terminalOptions.node)>
<label>_tree = <terminalOptions.node>New(<label>);
<else>
<label>_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);
<endif>
root_<treeLevel> = (<ASTLabelType>)ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_<treeLevel>);
<if(backtracking)>\}<endif>
<endif>
}, ...
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = (<ASTLabelType>)LT(1);
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )

```

```

{
<endif>
<if(!rewriteMode)>
  ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <label>.tree);
<else>
  if ( _first_<treeLevel> == NULL ) _first_<treeLevel> = <label>.tree;
<endif>
<if(backtracking)>><endif>
>>

/**
  x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<super.listLabelAST(elem=label,...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
  _last = (<ASTLabelType>)LT(1);
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( ( <actions.(actionScope).synpredgate> ) ) <endif>root_<treeLevel> =
(<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <label>.tree, root_<treeLevel>));
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<super.listLabelAST(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
  _last = (<ASTLabelType>)LT(1);
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  _last = (<ASTLabelType>)LT(1);
<super.ruleRefTrackAndListLabel(...)>
>>
/**
  ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
  _last = (<ASTLabelType>)LT(1);

```

```

<super.ruleRefRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  _last = (<ASTLabelType>)LT(1);
  <super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,terminalOptions,scope) ::= <<
  <if(terminalOptions.node)>
  <terminalOptions.node>New(stream_<token>->nextNode(stream_<token>))
  <else>
  stream_<token>->nextNode(stream_<token>)
  <endif>
>>

ruleCleanUp() ::= <<
  <super.ruleCleanUp(...)>
  <if(backtracking)>
  if ( <actions.(actionScope).synpredgate> ) {<\n>
  <endif>
  <if(!ruleDescriptor.isSynPred)>
  retval.stop = LT(-1);<\n>
  <endif>
  retval.tree = (<ASTLabelType>)ADAPTOR->rulePostProcessing(ADAPTOR, root_0);
  <if(backtracking)>
  }
  <endif>
  <ruleDescriptor.allTokenRefsInAltsWithRewrites
  :{if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
  <ruleDescriptor.allRuleRefsInAltsWithRewrites
  :{if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/C/ASTTreeParser.stg

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*/

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Python/ASTDbg.stg

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/*

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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

```
finishedBacktracking(block) ::= <<
```

```
<if(backtracking)>
```

```
if <actions.(actionScope).synpredgate>:
```

```
  <block>
```

```
<else>
```

```
<block>
```

```
<endif>
```

```
>>
```

/**

Add a variable to track last element matched */

```
ruleDeclarations() ::= <<
```

```
<super.ruleDeclarations()>
```

```
_first_0 = None
```

```
_last = None<\n>
```

```
>>
```

/** What to emit when there is no rewrite rule. For auto build

* mode, does nothing.

*/

```
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
```

```
<finishedBacktracking({
```

```
<if(rewriteMode)>
```

```
retval.tree = _first_0
```

```
if self._adaptor.getParent(retval.tree) is not None and self._adaptor.isNil(self._adaptor.getParent(retval.tree)):
```

```
  retval.tree = self._adaptor.getParent(retval.tree)
```

```

<endif>
})>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
     enclosingTreeLevel, treeLevel) ::= <<
  _last = self.input.LT(1)
  _save_last_<treeLevel> = _last
  _first_<treeLevel> = None
  <if(!rewriteMode)>
    root_<treeLevel> = self._adaptor.nil()<\n>
  <endif>
  <root:element()>
  <if(rewriteMode)>
    <finishedBacktracking({
    <if(root.el.rule)>
      if _first_<enclosingTreeLevel>
        is None:
          _first_<enclosingTreeLevel> = <root.el.label>.tree<\n>
        <else>
          if _first_<enclosingTreeLevel> is None:
            _first_<enclosingTreeLevel> = <root.el.label><\n>
          <endif>
        })>
    <endif>
    <actionsAfterRoot:element()>
    <if(nullableChildList)>
      if self.input.LA(1) == DOWN:
        self.match(self.input, DOWN, None)
        <children:element()>
        self.match(self.input, UP, None)

      <else>
        self.match(self.input, DOWN, None)
        <children:element()>
        self.match(self.input, UP, None)<\n>
      <endif>
    <if(!rewriteMode)>
      self._adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>)<\n>
    <endif>
    _last = _save_last_<treeLevel>

  >>

// TOKEN AST STUFF

```



```

root_<treeLevel> = self._adaptor.becomeRoot(<label>_tree, root_<treeLevel>)
})>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={ })
::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<
_last = self.input.LT(1)
<super.wildcard(...)>
<if(!rewriteMode)>
<finishedBacktracking({
<label>_tree = self._adaptor.dupTree(<label>)
self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<else> <! rewrite mode !>
<finishedBacktracking({
if _first_<treeLevel> is None:
_first_<treeLevel> = <label>
})>
<endif>
>>

// SET AST
matchSet(s,label,elementIndex,postmatchCode,terminalOptions={ }) ::= <<
_last = self.input.LT(1)
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<finishedBacktracking({
<if(terminalOptions.node)>
<label>_tree = <terminalOptions.node>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<endif>
}, ...)>
>>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={ })

```

```

 ::= <<
 <matchSet(...)>
 <noRewrite(...)> <! set return tree !>
 >>

matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <<
 _last = self.input.LT(1)
 <super.matchSet(...)>
 >>

matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={}) ::= <<
 <super.matchSet(postmatchCode={
 <if(!rewriteMode)>
 <finishedBacktracking({
 <if(terminalOptions.node)>
 <label>_tree = <terminalOptions.node><(<label>)
 <else>
 <label>_tree = self._adaptor.dupNode(<label>)
 <endif><\n>
 root_<treeLevel> = self._adaptor.becomeRoot(<label>_tree, root_<treeLevel>)
 })>
 <endif>
 }, ...)>
 >>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
 _last = self.input.LT(1)
 <super.ruleRef(...)>
 <finishedBacktracking({
 <if(!rewriteMode)>
 self._adaptor.addChild(root_<treeLevel>, <label>.tree)
 <else> <! rewrite mode !>
 if _first_<treeLevel> is None:
 _first_<treeLevel> = <label>.tree<\n>
 <endif>
 })>
 >>

/** x+=rule auto construct
 */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRef(...)>
 <listLabel(label, {<label>.tree})>
 >>

```

```

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
  _last = self.input.LT(1)
  <super.ruleRef(...)>
  <if(!rewriteMode)>
  <finishedBacktracking({
  root_<treeLevel> = self._adaptor.becomeRoot(<label>.tree, root_<treeLevel>)
  })>
  <endif>
  >>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  <ruleRefRuleRoot(...)>
  <listLabel(label, {<label>.tree})>
  >>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
  _last = self.input.LT(1)
  <super.ruleRefTrack(...)>
  >>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  _last = self.input.LT(1)
  <super.ruleRefTrackAndListLabel(...)>
  >>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope)
  ::= <<
  _last = self.input.LT(1)
  <super.ruleRefRootTrack(...)>
  >>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  _last = self.input.LT(1)
  <super.ruleRefRuleRootTrackAndListLabel(...)>
  >>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,scope,terminalOptions={}) ::= <<
  <if(terminalOptions.node)>
  <terminalOptions.node>(stream_<token>.nextNode())

```

```
<else>
stream_<token>.nextNode()
<endif>
>>

ruleCleanup() ::= <<
<super.ruleCleanup()>
<if(!rewriteMode)>
<finishedBacktracking({
retval.tree = self._adaptor.rulePostProcessing(root_0)
})>
<endif>
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Python/ASTTreeParser.stg
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```

```
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```
*/
/** Add an adaptor property that knows how to build trees */
@headerFile.members() ::= <<
/* @headerFile.members() */
pANTLR3_BASE_TREE_ADAPTOR adaptor;
pANTLR3_VECTOR_FACTORY vectors;
/* End @headerFile.members() */
>>

/** Install the tree adaptor interface pointer and anything else that
 * tree parsers and producers require.
 */
@genericParser.apifuncs() ::= <<
<if(PARSER)>
ADAPTOR = ANTLR3_TREE_ADAPTORNew(instream->tstream->tokenSource->strFactory);<\n>
<endif>
ctx->vectors =
antlr3VectorFactoryNew(0);
>>

@genericParser.cleanup() ::= <<
ctx->vectors->close(ctx->vectors);
<if(PARSER)>
/* We created the adaptor so we must free it
 */
ADAPTOR->free(ADAPTOR);
<endif>
>>

@returnScope.ruleReturnMembers() ::= <<

<super.ASTLabelType()> tree;

>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> root_0;<\n>
>>

ruleInitializations() ::= <<
<super.ruleInitializations()>
root_0 = NULL;<\n>
>>

ruleLabelDefs() ::= <<
```

```

<super.ruleLabelDefs()>
<ruleDescriptor.tokenLabels:{it | <ASTLabelType> <it.label.text>_tree;}; separator="\n">
<ruleDescriptor.tokenListLabels:{it | <ASTLabelType> <it.label.text>_tree;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
  :{it | pANTLR3_REWRITE_RULE_<rewriteElementType>_STREAM stream_<it>;}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
  :{it | pANTLR3_REWRITE_RULE_SUBTREE_STREAM
  stream_<it>;}; separator="\n">
>>

/* Note that we defer the actual creation of any rewrite streams we need here and just initialize
* them to NULL. This saves creating huge numbers of rewrite streams that cannot be used as only
* one alt will be taken in a rule, but we are declaring all the streams here. So we define
* a macro that contains the create code, then use this macro later to check if the stream
* has been created yet. Checking for NULL is almost free in C.
*/
ruleLabelInitializations() ::= <<
<super.ruleLabelInitializations()>
<ruleDescriptor.tokenLabels:{it | <it.label.text>_tree = NULL;}; separator="\n">
<ruleDescriptor.tokenListLabels:{it | <it.label.text>_tree = NULL;}; separator="\n">

<ruleDescriptor.allTokenRefsInAltsWithRewrites
:{it | stream_<it> = NULL;
#define CREATE_stream_<it> if (stream_<it> == NULL) {stream_<it> =
antlr3RewriteRule<rewriteElementType>StreamNewAE(ADAPTOR, RECOGNIZER, (pANTLR3_UINT8)"token
<it>"); \} };
separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
:{it | stream_<it> = NULL;
#define CREATE_stream_<it> if (stream_<it> == NULL) {stream_<it> =
antlr3RewriteRuleSubtreeStreamNewAE(ADAPTOR, RECOGNIZER, (pANTLR3_UINT8)"rule <it>"); \} };
separator="\n">

<if(ruleDescriptor.hasMultipleReturnValues)>
retval.tree = NULL;
<endif>
>>

/** a rule label including default value */
ruleLabelInitVal(label) ::= <<
<super.ruleLabelInitVal(...)>
<label.label.text>.tree = NULL;
>>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative

```

```

* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<endif>
<endif>
>>

@alt.initializations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements
nts
//
/** ID but track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) { <endif>CREATE_stream_<token>;
stream_<token>->add(stream_<token>, <label>, NULL);<if(backtracking)> }<endif><\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
* to the tracking list stream_ID for use in the rewrite.
*/
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>CREATE_stream_<token>; stream_<token>-
>add(stream_<token>, <label>, NULL);<if(backtracking)> }<endif><\n>
>>

wildcardTrack(label,elementIndex) ::= <<
<super.wildcard(...)>
>>

```

```

/**
 rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) { <endif>CREATE_stream_<rule.name>;
stream_<rule.name>->add(stream_<rule.name>, <label>.tree, NULL);<if(backtracking)> }<endif>
>>

```

```

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabelTrack(...)>
>>

```

```

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) { <endif>CREATE_stream_<rule.name>;
stream_<rule.name>->add(stream_<rule.name>, <label>.tree, NULL);<if(backtracking)> }<endif>
>>

```

```

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabelAST(...)>
>>

```

// RULE REF AST

```

/** Match ^(label+=TOKEN
 ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

```

/* How to accumulate lists when we are doing rewrite tracking...

```

*/
listLabelTrack(label) ::= <<
/* listLabelTrack(label)
*/
if (list_<label> == NULL)
{

```



```

    list_<label>=ctx->vectors->newVector(ctx->vectors);
}
list_<label>->add(list_<label>, <label>.tree, NULL);
>>

/* How to accumulate lists of rule outputs (only allowed with AST
 * option but if the user is going to walk the tree, they will want
 * all their custom elements from rule returns.
 *
 * Normally, we use inline structures (which the compiler lays down
 * code to copy from heap allocations. However, here we want to accumulate copies
 * of the returned structures because we are adding them to a list. This only makes sense if the
 * grammar is not rewriting the tree as a tree rewrite only preserves the tree, not the object/structure
 * returned from the
 * rule. The rewrite will extract the tree pointer. However, if we are not going to
 * do a tree re-write, then the user may wish to iterate the structures returned by the rule in
 * action code and will expect the user defined returns[] elements to be available when they do this.
 * Hence we cannot just preserve the tree that was returned. So, we must copy the local structure and provide
 * a function that can free the allocated space. We cannot know how to free user allocated elements and
 * presume that the user will know to do this using their own factories for the structures they allocate.
 */
listLabelAST(label) ::= <<
if (list_<label> == NULL)
{
    list_<label>=ctx->vectors->newVector(ctx->vectors);
}
{
    RETURN_TYPE_<label> * tcopy;

    tcopy = (RETURN_TYPE_<label> *)ANTLR3_MALLOC(sizeof(RETURN_TYPE_<label>)); /* Note no
memory allocation checks! */
    ANTLR3_MEMCPY((void *)tcopy, (const void *)<label>, sizeof(RETURN_TYPE_<label>));
    list_<label>->add(list_<label>, (void
*)tcopy, freeScope); /* Add whatever the return type is */<n>
}
>>

// R e w r i t e

rewriteCode(
alts,
description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,

```

```

    referencedWildcardListLabels,
rewriteBlockLevel,
enclosingTreeLevel,
treeLevel) ::=
<<

/* AST REWRITE
* elements      : <referencedElementsDeep; separator=", ">
* token labels  : <referencedTokenLabels; separator=", ">
* rule labels   : <referencedRuleLabels; separator=", ">
* token list labels : <referencedTokenListLabels; separator=", ">
* rule list labels : <referencedRuleListLabels; separator=", ">
*/
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) <\n>
<endif>
{
<rewriteCodeLabelsDecl()>
<rewriteCodeLabelsInit()>
root_0 = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));
<prevRuleRootRef()>.tree = root_0;
<alts:rewriteAlt()>
separator="else ">
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef()>.tree = (<ASTLabelType>)(ADAPTOR->rulePostProcessing(ADAPTOR, root_0));
INPUT->replaceChildren(INPUT, ADAPTOR->getParent(ADAPTOR, retval.start),
ADAPTOR->getChildIndex(ADAPTOR, retval.start),
ADAPTOR->getChildIndex(ADAPTOR, _last),
retval.tree);
<endif>
<endif>
<prevRuleRootRef()>.tree = root_0; // set result root
<rewriteCodeLabelsFree()>
}
>>

rewriteCodeLabelsDecl() ::= <<
<referencedTokenLabels
: {it | pANTLR3_REWRITE_RULE_<rewriteElementType>_STREAM stream_<it>;};
separator="\n"
>
<referencedTokenListLabels
: {it | pANTLR3_REWRITE_RULE_<rewriteElementType>_STREAM stream_<it>;};
separator="\n"
>
<referencedRuleLabels

```

```

: {it | pANTLR3_REWRITE_RULE_SUBTREE_STREAM stream_<it>;}
separator="\n"
>
<referencedRuleListLabels
: {it | pANTLR3_REWRITE_RULE_SUBTREE_STREAM stream_<it>;}
separator="\n"
>
>>

rewriteCodeLabelsInit()
::= <<
<referencedTokenLabels
: {it | stream_<it>=antlr3RewriteRule<rewriteElementType>StreamNewAEE(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", <it>);}
separator="\n"
>
<referencedTokenListLabels
: {it | stream_<it>=antlr3RewriteRule<rewriteElementType>StreamNewAEV(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", list_<it>); }
separator="\n"
>
<referencedRuleLabels
: {it | stream_<it>=antlr3RewriteRuleSubtreeStreamNewAEE(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", <it>.tree != NULL ? <it>.tree : NULL);}
separator="\n"
>
<referencedRuleListLabels
: {it | stream_<it>=antlr3RewriteRuleSubtreeStreamNewAEV(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", list_<it>);}
separator="\n"
>
>>
rewriteCodeLabelsFree() ::= <<
<referencedTokenLabels
: {it | if (stream_<it> != NULL) stream_<it>->free(stream_<it>); }
separator="\n"
>
<referencedTokenListLabels
: {it | if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}
separator="\n"
>
<referencedRuleLabels
: {it
| if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}
separator="\n"
>
<referencedRuleListLabels
: {it | if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}

```

```

separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
  alt,
  rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
// <fileName>:<description>
{
  if ( <referencedElementsDeep:{el | (stream_<el> != NULL && stream_<el>->hasNext(stream_<el>)) } ;
  separator="|| "> )
  {
    <alt>
  }
  <referencedElementsDeep:{el | if ( stream_<el> != NULL) stream_<el>->reset(stream_<el>);<n>}>
}<n>
>>

rewriteClosureBlock(
  alt,
  rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
// <fileName>:<description>
{
  while
  ( <referencedElements:{el | (stream_<el> != NULL && stream_<el>->hasNext(stream_<el>)) } ; separator="|| "> )
  {
    <alt>
  }
  <referencedElements:{el | if (stream_<el> != NULL) stream_<el>->reset(stream_<el>);<n>}>
}<n>
>>
RewriteEarlyExitException() ::=
<<
CONSTRUCTEX();
EXCEPTION->type      = ANTLR3_REWRITE_EARLY_EXCEPTION;
EXCEPTION->name      = (void *)ANTLR3_REWRITE_EARLY_EXCEPTION_NAME;
>>

```

```

rewritePositiveClosureBlock(
  alt,
  rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
if (<referencedElements:{el | (stream_<el> == NULL || !stream_<el>->hasNext(stream_<el>)) }; separator="|| ">)
{
  <RewriteEarlyExitException()>
}
else
{
  while ( <referencedElements:{el | (stream_<el>->hasNext(stream_<el>)) }; separator="|| "> ) {
    <alt>
  }
  <referencedElements:{el | stream_<el>->reset(stream_<el>);<\n>}>
}
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>)
{
  <a.alt>
}<\n>
<else>
{
  <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = NULL; /* \<-- rewriteEmptyAlt() */"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
  <ASTLabelType> root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));
  <root:rewriteElement()>
  <children:rewriteElement()>
  ADAPTOR->addChild(ADAPTOR, root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

```

```

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,terminalOptions,args) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextNode(stream_<label>));<\n>
>>

/**
Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextNode(stream_<label>));<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRootToken(ADAPTOR, stream_<label> == NULL ?
NULL : stream_<label>->nextToken(stream_<label>, root_<treeLevel>));<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,terminalOptions,args) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR,
<createRewriteNodeFromElement(...)>, root_<treeLevel>));<\n>
>>

rewriteImaginaryTokenRef(args,token,terminalOptions,elementIndex) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <createImaginaryNode(tokenType=token,
...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,terminalOptions,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR,
<createImaginaryNode(tokenType=token, ...)>, root_<treeLevel>));<\n>
>>

```

```

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule,dup) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<rule> == NULL ? NULL : stream_<rule>-
>nextTree(stream_<rule>));<\n>
>>

rewriteRuleRefRoot(rule,dup) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, stream_<rule> == NULL ? NULL
: stream_<rule>->nextNode(stream_<rule>), root_<treeLevel>));<\n>
>>

rewriteNodeAction(action)
::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = (<ASLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <action>, root_<treeLevel>));<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextTree(stream_<label>));<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextTree(stream_<label>));<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, stream_<label> == NULL ? NULL
: stream_<label>->nextNode(stream_<label>), root_<treeLevel>));<\n>

```

>>

```
/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label)
 ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot((<ASTLabelType>)(stream_<label> == NULL
? NULL : stream_<label>->nextNode(stream_<label>), root_<treeLevel>));<\n>
>>
```

```
rewriteWildcardLabelRef(label) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextTree(stream_<label>));<\n>
>>
```

```
createImaginaryNode(tokenType,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
<! new MethodNode(IDLabel, args) !>
<terminalOptions.node>New(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
<if(args)>

#if <length(args)> == 2
(<ASTLabelType>)ADAPTOR->createTypeTokenText(ADAPTOR, <tokenType>, TOKTEXT(<args; separator=",
">))
#else
(<ASTLabelType>)ADAPTOR->createTypeText(ADAPTOR, <tokenType>, (pANTLR3_UINT8)<args;
separator=", ">)
#endif

<else>
(<ASTLabelType>)ADAPTOR->createTypeText(ADAPTOR, <tokenType>, (pANTLR3_UINT8)"<tokenType>")
<endif>
<endif>
>>
```

```
createRewriteNodeFromElement(token,terminalOptions,args)
 ::= <<
<if(terminalOptions.node)>
<terminalOptions.node>New(stream_<token>->nextToken(stream_<token>)<if(args)>, <args; separator=",
"><endif>)
<else>
<if(args)> <! must create new node from old !>

#if <length(args)> == 2
ADAPTOR->createTypeTokenText(ADAPTOR, <token>->getType(<token>, TOKTEXT(<token>, <args;
separator=", ">)) /* JIMI */
#else
ADAPTOR->createTypeToken(ADAPTOR, <token>->getType(<token>, <token>, <args; separator=", ">)
```



```
#endif

<else>
stream_<token> == NULL ? NULL : stream_<token>->nextNode(stream_<token>)
<endif>
<endif>
>>
```

Found in path(s):

```
*/opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/C/AST.stg
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```

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```
*/
/** Template subgroup to add template rewrite output
* If debugging, then you'll also get STDbg.stg loaded.
*/
```

```
@returnScopeInterface.memVars() ::= <<
<@super.memVars()>
/* ST returnInterface.memVars */
ST *st;
```

```

>>

@returnScopeInterface.properties() ::= <<
<@super.properties()>
/* ST returnScope.properties */
@property (retain, getter=getST, setter=setST:) ST *st;
>>

@returnScopeInterface.methodsDecl() ::= <<
<@super.methodsDecl()>
/* ST AST returnScopeInterface.methodsDecl */
-
(id) getTemplate;
- (NSString *) toString;
- (NSString *) description;
>>

@returnScopeInterface() ::= <<
/* ST returnScopeInterface */
@interface <returnScopeInterface.name> : ReturnScope {
<returnScopeInterface.memVars()>
}
<returnScopeInterface.properties()>

<returnScopeInterface.methods()>
@end
>>

@returnScopeImplementation.synthesize() ::= <<
<@super.synthesize()>
/* ST returnScope.synthesize */
@synthesize st;
>>

@returnScopeImplementation.methods() ::= <<
<@super.methods()>
/* ST returnScope.methods */
- (id) getTemplate { return st; }
- (NSString *) toString { return st==nil?nil:[st toString]; }
- (NSString *) description { [self toString]; }
>>

@returnScopeImplementation() ::= <<
@implementation <returnScopeImplementation.name>
<returnScopeImplementation.synthesize()>

<returnScopeImplementation.methods()>
@end

```

```

>>

/** Add this to each rule's return value struct */
@returnScope.ruleReturnMembers() ::= <<
<@super.ruleReturnMembers()>
/* ST returnScope.ruleReturnMembers --
empty */
>>

@genericParserHeaderFile.memVars() ::= <<
<@super.memVars()>
/* ST genericParserHeaderFile.memVars -- empty now */
STGroup *templateLib; /* ST -- really a part of STAttrMap */
>>

@genericParserHeaderFile.properties() ::= <<
<@super.properties()>
/* ST genericParser.properties */
@property (retain, getter=getTemplateLib, setter=setTemplateLib:) STGroup *templateLib;
>>

@genericParserHeaderFile.methodsDecl() ::= <<
<@super.methodsDecl()>
/* ST genericParser.methodsDecl */
- init;
- (STGroup *) getTemplateLib;
- (void) setTemplateLib:(STGroup *)aTemplateLib;
@end
>>

@genericParser.synthesize() ::= <<
<@super.synthesize()>
/* ST genericParserImplementation.synthesize */
@synthesize templateLib;
>>

@genericParser.methods() ::= <<
<@super.methods()>
/* ST genericParser.methods */

- (STGroup *)getTemplateLib
{
    return templateLib;
}

- (void) setTemplateLib:(STGroup *)aTemplateLib
{
    templateLib = aTemplateLib;
}

```

```

}

>>

@genericParser.members() ::= <<
<@super.members()>
STGroup
*templateLib = [STGroup newSTGroup:@"<name>Templates"];

- (STGroup *) getTemplateLib
{
return templateLib;
}

- (void) setTemplateLib:(STGroup *) templateLib
{
this.templateLib = templateLib;
}

/** allows convenient multi-value initialization:
* "new STAttrMap().put(...).put(...)"
*/
/* REPLACE THIS STATIC CLASS
static class STAttrMap extends HashMap {
- (STAttrMap *) setObject:(id)aValue forKey:(NS*)String attrName
{
[super setObject:value forKey:attrName];
return self;
}
- (STAttrMap *) setObjectWithInt:(NSInteger)value forKey:(NSString *)attrName
{
[super setObject:[NSNumber numberWithInt:value] forKey:attrName];
return self;
}
}
*/
>>

@STAttrMap() ::= <<
/* ----- ST start STAttrMap ----- */
<@STAttrMap.interface()>
<@STAttrMap.implementation()>
/* ----- ST end STAttrMap ----- */
>>

@STAttrMap.interface() ::= <<
/* ----- ST start STAttrMap.interface ----- */
@interface STAttrMap : HashMap {

```

```

/* <@STAttrMap.memVars()>
*/
    STGroup *templateLib;
}

/* <@STAttrMap.properties()> */
@property (retain, getter=getTemplateLib, setter=setTemplateLib:) STGroup *templateLib;
/* <@STAttrMap.methodsDecl()> */
- (id) init;
- (STAttrMap *) setObject:(id)value forKey:(NSString *)attrName;
- (STAttrMap *) setObjectWithInt:(NSInteger)value forKey:(NSString *)attrName;
- (void) setTemplateLib:(STGroup *)aTemplateLib;
- (STGroup *) getTemplateLib;
@end
/* ----- ST end STAttrMap.interface ----- */
>>

@implementation STAttrMap
/* ----- ST start STAttrMap.implementation ----- */
/** allows convenient multi-value initialization:
 * "new STAttrMap().put(...).put(...)"
 */
@implementation STAttrMap
@synthesize templateLib;

<@STAttrMap.methods()>
@end
/* ----- ST end STAttrMap.implementation ----- */
>>

@implementation STAttrMap.memVars() ::= <<
/* ----- ST start STAttrMap.memVars ----- */
    STGroup *templateLib;
/* ----- ST end STAttrMap.memVars ----- */
>>

@implementation STAttrMap.properties()
::= <<
/* ----- ST start STAttrMap.properties ----- */
@property (retain, getter=getTemplateLib, setter=setTemplateLib:) STGroup *templateLib;
/* ----- ST end STAttrMap.properties ----- */
>>

@implementation STAttrMap.methodsDecl() ::= <<
/* ----- ST start STAttrMap.methodsDecl ----- */
- (id) init;
- (STAttrMap *) setObject:(id)value forKey:(NSString *)attrName;
- (STAttrMap *) setObjectWithInt:(NSInteger)value forKey:(NSString *)attrName;

```

```

- (void) setTemplateLib:(STGroup *)aTemplateLib;
- (STGroup *) getTemplateLib;
/* ----- ST end STAttrMap.methodsDecl ----- */
>>

@STAttrMap.methods() ::= <<
/* ----- ST start STAttrMap.methods ----- */
- (id) init
{
    self = [super initWithLen:16];
    if ( self != nil ) {
        templateLib = [STGroup newSTGroup:"<name>Templates"];
    }
    return self;
}

- (STAttrMap *) setObject:(id)aValue forKey:(NSString *)aAttrName
{
    [super setObject:aValue forKey:aAttrName];
    return self;
}

-
(STAttrMap *) setObjectWithInt:(NSInteger)aValue forKey:(NSString *)aAttrName
{
    [super setObject:[NSNumber numberWithInt:aValue] forKey:aAttrName];
    return self;
}

- (void) setTemplateLib:(STGroup *)aTemplateLib
{
    templateLib = aTemplateLib;
}

- (STGroup *)getTemplateLib
{
    return templateLib;
}
/* ----- ST end STAttrMap.methods ----- */
>>

/** x+=rule when output=template */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ST ruleRefAndListLable */
<ruleRef(...)>
<listLabel(elem=[label getTemplate,...]>
>>

rewriteTemplate(alts) ::= <<

```

```

/* ----- ST start rewriteTemplate ----- */
// TEMPLATE REWRITE
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {
  <alts:rewriteTemplateAlt(); separator="else ">
  <if(rewriteMode)><replaceTextInLine()><endif>
}
<else>
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
<endif>
/* ----- ST end rewriteTemplate ----- */
>>

replaceTextInLine()
::= <<
/* ----- ST start replaceTextInLine ----- */
<if(TREE_PARSER)>
[[ (TokenRewriteStream *)input getTokenStream]
  replaceFromIndex:[ [input getTreeAdaptor] getTokenStartIndex:retval.start]
  ToIndex:[ [input getTreeAdaptor] getTokenStopIndex:retval.start]
  Text:retval.st];
<else>
[(TokenRewriteStream *)input)
  replaceFromIndex:[ ((CommonToken *)retval.start) getTokenIndex]
  ToIndex:[ [input LT:-1] getTokenIndex]
  Text:retval.st];
<endif>
/* ----- ST end replaceTextInLine ----- */
>>

rewriteTemplateAlt() ::= <<
/* ----- ST start rewriteTemplateAlt ----- */
/* ST <it.description> */
<if(it.pred)>
if (<it.pred> ) {
  retval.st = <it.alt>;
}<\n>
<else>
{
  retval.st = <it.alt>;
}<\n>
<endif>
/* ----- ST end rewriteTemplateAlt ----- */
>>

rewriteEmptyTemplate(alts) ::= <<
nil;

```

>>

/** Invoke a template with a set of attribute name/value pairs.

* Set the value

of the rule's template *after* having set

* the attributes because the rule's template might be used as

* an attribute to build a bigger template; you get a self-embedded

* template.

*/

rewriteExternalTemplate(name,args) ::= <<

/* ----- ST start rewriteExternalTemplate ----- */

[templateLib getInstanceOf:@"<name>"]

<if(args)>[[STAttrMap newSTAttrMap] <args:{ a | setObject:<a.value> forKey:@"<a.name>"}]><endif>]

/* ----- ST end rewriteExternalTemplate ----- */

>>

/** expr is a string expression that says what template to load */

rewriteIndirectTemplate(expr,args) ::= <<

/* ----- ST start rewriteIndirectTemplate ----- */

[templateLib getInstanceOf:<expr>

<if(args)> [[STAttrMap newSTAttrMap]<args:{ a | setObject:<a.value> forKey:@"<a.name>"}]>

<else>]<endif>

/* ----- ST end rewriteIndirectTemplate ----- */

>>

/** Invoke an inline template with a set of attribute name/value pairs */

rewriteInlineTemplate(args, template) ::= <<

/* ----- ST

start rewriteInlineTemplate ----- */

STGroup *templateLib;

templateLib.templates = [STAttrMap newSTAttrMap];

<if(args)> [templateLib.templates <args:{ a | setObject:<a.value> forKey:@"<a.name>"}]><endif>

[ST newST:templateLib template:@"<template>"];

/* ----- ST end rewriteInlineTemplate ----- */

>>

/** plain -> {foo} action */

rewriteAction(action) ::= <<

/* ----- ST start rewriteAction ----- */

<action>

/* ----- ST end rewriteAction ----- */

>>

/** An action has %st.attrName=expr; or % {st}.attrName=expr; */

actionSetAttribute(st,attrName,expr) ::= <<

/* ----- ST start actionSetAttribute ----- */

[[ST attributes] setObject:<expr> forKey:@"<attrName>"];

<![<st> setAttribute:<expr> name:@"<attrName>"];!>


```

/* ----- ST end actionSetAttribute ----- */
>>

/** Translate %{stringExpr} */
actionStringConstructor(stringExpr) ::= <<
/* ----- ST start actionStringConstructor ----- */
[ST newSTWithTemplate:<stringExpr>]
/* -----
ST end actionStringConstructor ----- */
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/ObjC/ST.stg
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```

*/

```

```

/** Template overrides to add debugging to AST stuff. Dynamic inheritance
* hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.
*/
parserMembers() ::= <<

```

```

DebugTreeAdaptor *adaptor = [DebugTreeAdaptor newTreeAdaptor:(id)dbg Adaptor:[CommonTreeAdaptor
newTreeAdaptor]];

// fix this
- (void) setTreeAdaptor:(id<TreeAdaptor>)anAdaptor
{
    adaptor = [DebugTreeAdaptor newTreeAdaptor:dbg Adaptor:anAdaptor];
<if(grammar.grammarIsRoot)>
    adaptor = [DebugTreeAdaptor
newTreeAdaptor:adaptor withDBG:dbg];
<else>
    adaptor = (DebugTreeAdaptor *)adaptor; // delegator sends dbg adaptor
<endif><\n>
    <grammar.directDelegates:{g[<g:delegateName()> setTreeAdaptor:adaptor];}>
}

- (id<TreeAdaptor>)getTreeAdaptor
{
    return adaptor;
}<\n>
>>

parserCtorBody() ::= <<
<super.parserCtorBody()>
>>

createListenerAndHandshake() ::= <<
DebugEventSocketProxy proxy =
    [DebugEventSocketProxy newDebugEventSocketProxy:self, port, <if(TREE_PARSER)>[input
getTreeAdaptor]<else>adaptor<endif>];
[self setDebugListener:proxy];
[self set<inputStreamType>:[Debug<inputStreamType> newDebug<inputStreamType>:input with:proxy]];
try {
    [proxy handshake];
}
@catch (IOException *ioe) {
    [self reportError:ioe];
}
>>

@ctorForRootGrammar.finally() ::= <<
CommonTreeAdaptor *adap = [CommonTreeAdaptor newTreeAdaptor];
[self setTreeAdaptor:adap];
[proxy setTreeAdaptor:adap];
>>

@ctorForProfilingRootGrammar.finally() ::= <<
CommonTreeAdaptor *adap = [CommonTreeAdaptor

```

```
newTreeAdaptor];
[self setTreeAdaptor:adap];
[proxy setTreeAdaptor:adap];
>>
```

```
@ctorForPredefinedListener.superClassRef() ::= @"super(input, dbg);"
```

```
@ctorForPredefinedListener.finally() ::=<<
<if(grammar.grammarIsRoot)> <! don't create new adaptor for delegates !>
CommonTreeAdaptor *adap = [CommonTreeAdaptor newTreeAdaptor];
[self setTreeAdaptor:adap];<\n>
<endif>
>>
```

```
@treeParserHeaderFile.superClassName ::= "DebugTreeParser"
```

```
@rewriteElement.pregen() ::= "[debugListener locationLine:<e.line> column:<e.pos>];"
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
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```

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```

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*/

/** Templates for building ASTs during normal parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* The situation is not too bad as rewrite (->) usage makes ^ and !

* invalid. There is no huge explosion of combinations.

*/

```
finishedBacktracking(block) ::= <<
```

```
<if(!ruleDescriptor.isSynPred)>
```

```
<if(backtracking)>
```

```
if <actions.(actionScope).synpredgate>:
```

```
  <block>
```

```
<else>
```

```
<block>
```

```
<endif>
```

```
<endif>
```

```
>>
```

```
@ruleBody.setErrorReturnValue() ::= <<
```

```
retval.tree = self._adaptor.errorNode(self.input, retval.start, self.input.LT(-1), re)
```

```
>>
```

```
// TOKEN AST STUFF
```

```
/** ID and output=AST */
```

```
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
```

```
<super.tokenRef(...)>
```

```
<finishedBacktracking({
```

```
<label>_tree = <createNodeFromToken(...)>
```

```
self._adaptor.addChild(root_0, <label>_tree
```

```
})>
```

```
>>
```

```
/** ID! and output=AST (same as plain tokenRef) */
```

```
tokenRefBang(token,label,elementIndex,terminalOptions={}) ::= "<super.tokenRef(...)>"
```

```
/** ID^ and output=AST */
```

```
tokenRefRuleRoot(token,label,elementIndex,terminalOptions={}) ::= <<
```

```
<super.tokenRef(...)>
```

```

<finishedBacktracking({
<label>_tree = <createNodeFromToken(...)>
root_0 = self._adaptor.becomeRoot(<label>_tree, root_0)
})>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/**
label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate
// that refactoring when
// I have more time.

matchSet(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <%
<super.matchSet(postmatchCode={ <finishedBacktracking({ self._adaptor.addChild(root_0,
<createNodeFromToken(...)>})>}, ...)>
%>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={}) ::= <<
<matchSet(...)>
>>

```

```
matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= "<super.matchSet(...)>"
```

```
// note there is no matchSetTrack because -> rewrites force sets to be  
// plain old blocks of alts: (A|B|...|C)
```

```
matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={}) ::= <<  
<if(label)>  
<label> = self.input.LT(1)<\n>  
<endif>  
<super.matchSet(postmatchCode={ <finishedBacktracking({root_0 =  
self._adaptor.becomeRoot(<createNodeFromToken(...)>, root_0)})>, ...}>  
>>
```

```
// RULE REF AST
```

```
/** rule when output=AST */  
ruleRef(rule,label,elementIndex,args,scope) ::= <<  
<super.ruleRef(...)>  
<finishedBacktracking({ self._adaptor.addChild(root_0,  
<label>.tree})>  
>>
```

```
/** rule! is same as normal rule ref */  
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"
```

```
/** rule^ */  
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<  
<super.ruleRef(...)>  
<finishedBacktracking({root_0 = self._adaptor.becomeRoot(<label>.tree, root_0)})>  
>>
```

```
/** x+=rule when output=AST */  
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<  
<ruleRef(...)>  
<listLabel(label, {<label>.tree})>  
>>
```

```
/** x+=rule! when output=AST is a rule ref with list addition */  
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<  
<ruleRefBang(...)>  
<listLabel(label, {<label>.tree})>  
>>
```

```
/** x+=rule^ */  
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<  
<ruleRefRuleRoot(...)>  
<listLabel(label, {<label>.tree})>  
>>
```

```

// WILDCARD AST

wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<
<super.wildcard(...)>
<finishedBacktracking({
<label>_tree = self._adaptor.createWithPayload(<label>)
self._adaptor.addChild(root_0,
<label>_tree)
})>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

wildcardRuleRoot(token,label,elementIndex,terminalOptions={ }) ::= <<
<super.wildcard(...)>
<finishedBacktracking({
<label>_tree = self._adaptor.createWithPayload(<label>)
root_0 = self._adaptor.becomeRoot(<label>_tree, root_0)
})>
>>

createNodeFromToken(label,terminalOptions={ }) ::= <%
<if(terminalOptions.node)>
<terminalOptions.node><label> <! new MethodNode(IDLabel) !>
<else>
self._adaptor.createWithPayload(<label>)
<endif>
%>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<finishedBacktracking({
retval.tree = self._adaptor.rulePostProcessing(root_0)
self._adaptor.setTokenBoundaries(retval.tree, retval.start, retval.stop)
})>
>>

Found in path(s):
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Python/ASTParser.stg
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```

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*/

```
@outputFile.imports() ::= <<
<@super.imports()>
<if(!TREE_PARSER)><! tree parser would already have imported !>
import org.antlr.runtime.tree.*;<\n>
<endif>
>>
```

```
@genericParser.members() ::= <<
<@super.members()>
<parserMembers()>
>>
```

```
/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
protected var adaptor:TreeAdaptor = new CommonTreeAdaptor();<\n>
override public function set treeAdaptor(adaptor:TreeAdaptor):void {
    this.adaptor = adaptor;

    <grammar.directDelegates: {g|<g:delegateName()>.treeAdaptor = this.adaptor;}>
}
override public function get treeAdaptor():TreeAdaptor {
    return adaptor;
}
>>
```



```

@returnScope.ruleReturnMembers() ::= <<
<ASTLabelType> tree;
public function get tree():Object { return tree; }
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
var root_0:<ASTLabelType> = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,
ruleDescriptor.wildcardTreeListLabels]:{it |var <it.label.text>_tree:<ASTLabelType>=null;}; separator="\n">
<ruleDescriptor.tokenListLabels:{it |var <it.label.text>_tree:<ASTLabelType>=null;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {it |var stream_<it>:RewriteRule<rewriteElementType>Stream=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {it |var stream_<it>:RewriteRuleSubtreeStream=new
RewriteRuleSubtreeStream(adaptor,"rule <it>");}; separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative
* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = <ASTLabelType>(adaptor.nil());<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<token>.add(<label>);<\n>
>>

```

```

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions)
 ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<token>.add(<label>);<n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<rule.name>.add(<label>.tree);
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(label, {<label>.tree }>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope)
 ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<rule>.add(<label>.tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(label, {<label>.tree }>
>>

// R e w r i t e

```

```

rewriteCode(
  alts, description,
  referencedElementsDeep, // ALL referenced elements to right of ->
  referencedTokenLabels,
  referencedTokenListLabels,
  referencedRuleLabels,
  referencedRuleListLabels,
  referencedWildcardLabels,
  referencedWildcardListLabels,
  rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels, referencedWildcardListLabels];
separator=", ">
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {<\n>
<endif>
<prevRuleRootRef(>.tree = root_0;
<rewriteCodeLabels(>
root_0 = <ASTLabelType>(adaptor.nil());
<alts:rewriteAlt(> separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>.tree = <ASTLabelType>(adaptor.rulePostProcessing(root_0));
input.replaceChildren(adaptor.getParent(retval.start),
    adaptor.getChildIndex(retval.start),
    adaptor.getChildIndex(_last),
    retval.tree);
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.tree = root_0;
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>.tree = root_0;
<endif>
<endif>
<if(backtracking)>
}
<endif>

```

```

>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
  :{it |var stream_<it>:RewriteRule<rewriteElementType>Stream=new
RewriteRule<rewriteElementType>Stream(adaptor,"token
<it>",<it>)};
  separator="\n"
>
<referencedTokenListLabels
  :{it |var stream_<it>:RewriteRule<rewriteElementType>Stream=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>", list_<it>)};
  separator="\n"
>
<referencedWildcardLabels
  :{it |var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"wildcard
<it>",<it>)};
  separator="\n"
>
<referencedWildcardListLabels
  :{it |var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"wildcard
<it>",<it>);
  separator="\n"
>
<referencedRuleLabels
  :{it |var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"rule
<it>",<it>!=null?<it>.tree:null)};
  separator="\n"
>
<referencedRuleListLabels
  :{it |var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"token
<it>",<it>);
  separator="\n"
>
>>

```

```

/** Generate code for an optional rewrite block; note
it uses the deep ref'd element
* list rather shallow like other blocks.
*/
rewriteOptionalBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
if ( <referencedElementsDeep:{el | stream_<el>.hasNext}; separator="||"> ) {

```

```

    <alt>
  }
  <referencedElementsDeep:{el | stream_<el>.reset();<\n>}>
>>

rewriteClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
// <fileName>:<description>
while ( <referencedElements:{el | stream_<el>.hasNext}; separator="||"> ) {
  <alt>
}
<referencedElements:{el | stream_<el>.reset();<\n>}>
>>

rewritePositiveClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
if ( !(<referencedElements:{el
| stream_<el>.hasNext}; separator="||"> ) ) {
  throw new RewriteEarlyExitException();
}
while ( <referencedElements:{el | stream_<el>.hasNext}; separator="||"> ) {
  <alt>
}
<referencedElements:{el | stream_<el>.reset();<\n>}>
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>) {
  <a.alt>
}<\n>
<else>
{
  <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */

```

```

rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
var root_<treeLevel>:<ASTLabelType> = <ASTLabelType>(adaptor.nil());
<root:rewriteElement()>
<children:rewriteElement()>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,terminalOptions,args) ::= <<
adaptor.addChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/**
Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>));<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,terminalOptions,args) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>));<\n>
>>

```

```

rewriteImaginaryTokenRef(args,token,terminalOptions,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>,
  <createImaginaryNode(token,terminalOptions,args)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,terminalOptions,elementIndex) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<createImaginaryNode(token,terminalOptions,args)>,
root_<treeLevel>));<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<rule>.nextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<rule>.nextNode(), root_<treeLevel>));<\n>
>>

rewriteNodeAction(action) ::= <<
adaptor.addChild(root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action)
::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<action>, root_<treeLevel>));<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>

```

>>

```
/** Gen ^($ruleLabel ...) where ruleLabel=rule */  
rewriteRuleLabelRefRoot(label) ::= <<  
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>));<\n>  
>>
```

```
/** Gen ^($ruleLabel ...) where ruleLabel+=rule */  
rewriteRuleListLabelRefRoot(label) ::= <<  
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>));<\n>  
>>
```

```
rewriteWildcardLabelRef(label) ::= <<  
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>  
>>
```

```
createImaginaryNode(tokenType,terminalOptions,args)  
::= <<  
<if(terminalOptions.node)>  
<! new MethodNode(IDLabel, args) !>  
new <terminalOptions.node>(tokenType<if(args)>, <args; separator=", "><endif>)  
<else>  
<ASTLabelType>(adaptor.create(tokenType, <args; separator=", "><if(!args)>"<tokenType>"<endif>))  
<endif>  
>>
```

```
createRewriteNodeFromElement(token,terminalOptions,args) ::= <<  
<if(terminalOptions.node)>  
new <terminalOptions.node>(stream_<token>.nextToken()<if(args)>, <args; separator=", "><endif>)  
<else>  
<if(args)> <! must create new node from old !>  
adaptor.create(<token>, <args; separator=", ">)  
<else>  
stream_<token>.nextNode()  
<endif>  
<endif>  
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/codegen/templates/ActionScript/AST.stg
```

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/*

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*/

```
@genericParserHeaderFile.memVars() ::= <<
/* AST parserHeaderFile.memVars */
NSInteger ruleLevel;
NSArray *ruleNames;
<@super.memVars()> /* AST super.memVars */
<parserMemVars()> /* AST parserMemVars */
>>
```

```
@genericParserHeaderFile.properties() ::= <<
/* AST parserHeaderFile.properties */
<@super.properties()> /* AST super.properties */
<parserProperties()> /* AST parserproperties */
>>
```

```
@genericParserHeaderFile.methodsDecl() ::= <<
/* AST parserHeaderFile.methodsDecl
*/
<@super.methodsDecl()> /* AST super.methodsDecl */
<parserMethodsDecl()> /* AST parsermethodsDecl */
>>
```

```
@genericParser.synthesize() ::= <<
/* AST genericParser.synthesize */
<@super.synthesize()>
```

```

<parserSynthesize()>
>>

@genericParser.methods() ::= <<
/* AST genericParser.methods */
<@super.methods()>
<parserMethods()>
>>

/* additional init code for tree support */
@genericParser.init() ::= <<
/* AST genericParser.init */
<@super.init()>
[self setTreeAdaptor:[[CommonTreeAdaptor newTreeAdaptor] retain]];
>>

@genericParser.dealloc() ::= <<
/* AST genericParser.dealloc */
[self setTreeAdaptor:nil];
<@super.dealloc()>
>>

/* Add an adaptor property that knows how to build trees */
parserMemVars() ::= <<
/* AST parserMemVars */
id<TreeAdaptor> treeAdaptor;
>>

/* Add an adaptor property that knows how to build trees */
parserProperties() ::= <<
/* AST parserProperties */
@property (retain, getter=getTreeAdaptor, setter=setTreeAdaptor:) id<TreeAdaptor> treeAdaptor;
>>

/**
Declaration of additional tree support methods - go in interface of parserHeaderFile() */
parserMethodsDecl() ::= <<
/* AST parserMethodsDecl */
- (id<TreeAdaptor>) getTreeAdaptor;
- (void) setTreeAdaptor:(id<TreeAdaptor>)theTreeAdaptor;
>>

/* Add an adaptor property that knows how to build trees */
parserSynthesize() ::= <<
/* AST parserProperties */
@synthesize treeAdaptor;
>>

```

```

/** Definition of addition tree support methods - go in implementation of genericParser() */
parserMethods() ::= <<
/* AST parserMethods */
- (id\<TreeAdaptor>) getTreeAdaptor
{
return treeAdaptor;
}

- (void) setTreeAdaptor:(id\<TreeAdaptor>)aTreeAdaptor
{
if (aTreeAdaptor != treeAdaptor) {
treeAdaptor = aTreeAdaptor;
}
}
>>

/** addition memVars for returnscopes */
@returnScopeInterface.memVars() ::= <<
/* AST returnScopeInterface.memVars */
<recognizer.ASTLabelType; null="CommonTree"> *tree;
>>

/** the interface of returnScope properties */
@returnScopeInterface.properties() ::= <<
/* AST returnScopeInterface.properties
*/
@property (retain, getter=getTree, setter=setTree:) <recognizer.ASTLabelType; null="CommonTree"> *tree;
>>

/** the interface of returnScope methodsDecl */
@returnScopeInterface.methodsDecl() ::= <<
/* AST returnScopeInterface.methodsDecl */
- (<recognizer.ASTLabelType; null="CommonTree"> *)getTree;<\n>
- (void) setTree:(<recognizer.ASTLabelType; null="CommonTree"> *)aTree;<\n>
>>

/** the implementation of returnScope synthesize */
@returnScopeImplementation.synthesize() ::= <<
/* AST returnScope.synthesize */
@synthesize tree;
>>

/** the implementation of returnScope methods */
@returnScopeImplementation.methods() ::= <<
/* AST returnScope.methods */
- (<ASTLabelType> *)getTree
{
return tree;
}

```

```

}

- (void) setTree:(<ASTLabelType> *)aTree
{
    if (tree != aTree) {
        if (tree != nil) [tree release];
        if (aTree != nil) [aTree retain];
        tree = aTree;
    }
}

- (void) dealloc
{
    self.tree = nil;
    [super dealloc];
}

>>

/** Add
    a variable to track rule's return AST */
ruleDeclarations() ::= <<
/* AST ruleDeclarations */
<super.ruleDeclarations()>
<ASTLabelType> *root_0 = nil;<\n>
>>

ruleLabelDefs() ::= <<
/* AST ruleLabelDefs */
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,
    ruleDescriptor.wildcardTreeListLabels]:{it | <ASTLabelType> *<it.label.text>_tree=nil;}; separator="\n">
<ruleDescriptor.tokenListLabels:{it | <ASTLabelType> *<it.label.text>_tree = nil;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites:{it | RewriteRuleTokenStream *stream_<it> =
    [[RewriteRule<rewriteElementType>Stream newRewriteRule<rewriteElementType>Stream:treeAdaptor
        description:@"token <it>"] retain];}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites:{it | RewriteRuleSubtreeStream *stream_<it> =
    [[RewriteRuleSubtreeStream newRewriteRuleSubtreeStream:treeAdaptor
        description:@"rule <it>"] retain];}; separator="\n">
>>

ruleCleanUp() ::= <<
/* AST ruleCleanUp */
<super.ruleCleanUp()>
<[ruleDescriptor.allTokenRefsInAltsWithRewrites,ruleDescriptor.allRuleRefsInAltsWithRewrites]:{it |
    [stream_<it> release];}; separator="\n">
<!

```

```

<if(ruleDescriptor.hasMultipleReturnValues)>
<if(backtracking)>if ( state.backtracking == 0 ) {<\n>
<endif>
  [<prevRuleRootRef()> setTree:(<ASTLabelType> *)[treeAdaptor rulePostProcessing:root_0]];<\n>
  [treeAdaptor setTokenBoundaries:<prevRuleRootRef()> getTree]
    From:<prevRuleRootRef()> getStart]
    To:<prevRuleRootRef()> getStop]];<\n>
<if(backtracking)>}<\n>
<endif>
<endif>
[root_0 release];
!>
>>

```

```

rewriteCodeLabelsCleanUp() ::= <<
/* AST rewriteCodeLabelsCleanUp */
<referencedTokenLabels:{it | [stream_<it> release];}; separator="\n">
<referencedTokenListLabels:{it | [stream_<it> release];}; separator="\n">
<referencedRuleLabels:{it |
  [stream_<it> release];}; separator="\n">
<referencedRuleListLabels:{it | [stream_<it> release];}; separator="\n">
>>

```

```

/** When doing auto AST construction, we must define some variables;
 * These should be turned off if doing rewrites. This must be a "mode"
 * as a rule could have both rewrite and AST within the same alternative
 * block.
 */

```

```

@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType> *)[treeAdaptor class] newEmptyTree] retain];<\n>
<endif>
<endif>
<endif>
>>

```

// Tracking Rule Elements

```

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex) ::= <<
<! <super.tokenRef(...)> !>
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) <endif>
  [stream_<token> addElement:<label>];<\n>
>>

```

```

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the
rewrite.
*/
tokenRefTrackAndListLabel(token,label,elementIndex) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex) ::= <<
<! <super.tokenRef(...)> !>
<tokenRefBang(...)>
<if(backtracking)>
if ( !<actions.(actionScope).synpredgate> ) <endif>
[stream_<token> addElement:<label>];<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>
[stream_<rule.name> addElement:[<label> getTree]];
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(elem={ [<label> getTree] },...)>
>>

/**
^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<! <super.ruleRefRuleRoot(...)> !>
<ruleRefRuleRoot(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>
[stream_<rule.name> addElement:[<label> getTree]];<\n>
>>

/** ^(x+=rule ...) rewrite */

```

```

ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem={ [<label> getTree] },...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list
labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {<n>
<endif>
<prevRuleRootRef(>).tree = root_0;<n>
<rewriteCodeLabels(>
root_0 = (<ASTLabelType> *)[[[treeAdaptor class] newEmptyTree] retain];<n>
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>).tree = (<ASTLabelType>)[treeAdaptor rulePostProcessing:root_0];
[input replaceChildren:[treeAdaptor getParent:retval.start]
From:[treeAdaptor getChildIndex:retval.start]
To:[treeAdaptor getChildIndex:_last]
With:retval.tree];
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>).tree = root_0;<n>
<else>

```

```

<if(!rewriteMode)>
<prevRuleRootRef(>.tree
= root_0;<\n>
<endif>
<endif>
<if(backtracking)>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {it | RewriteRule<rewriteElementType>Stream *stream_<it> =
[[RewriteRule<rewriteElementType>Stream newRewriteRule<rewriteElementType>Stream:treeAdaptor
description: @ "token <it>" element:<it>] retain];};
separator="\n"
>
<referencedTokenListLabels: {it | RewriteRule<rewriteElementType>Stream *stream_<it> =
[[RewriteRule<rewriteElementType>Stream newRewriteRule<rewriteElementType>Stream:treeAdaptor
description: @ "token <it>" elements:list_<it>] retain];};
separator="\n"
>
<referencedWildcardLabels: {it | RewriteRuleSubtreeStream stream_<it> =
[[RewriteRuleSubtreeStream newRewriteRuleSubtreeStream:treeAdaptor
description: "wildcard <it>" element:<it>] retain];};
separator="\n"
>
<referencedWildcardListLabels: {it | RewriteRuleSubtreeStream stream_<it> =
[[RewriteRuleSubtreeStream newRewriteRuleSubtreeStream:treeAdaptor
descriptor: "wildcard <it>" elements:list_<it>] retain];};
separator="\n"
>
<referencedRuleLabels: {it | RewriteRuleSubtreeStream *stream_<it> =
[[RewriteRuleSubtreeStream newRewriteRuleSubtreeStream:treeAdaptor
description: @ "token <it>" element:<it>!nil?[<it> getTree]:nil] retain];};
separator="\n"
>
<referencedRuleListLabels: {it | RewriteRuleSubtreeStream *stream_<it> =
[[RewriteRuleSubtreeStream newRewriteRuleSubtreeStream:treeAdaptor
description: @ "token <it>" elements:list_<it>] retain];};
separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
* list rather shallow like other blocks.
*/
rewriteOptionalBlock(

```



```

alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
if ( <referencedElementsDeep:{el | [stream_<el> hasNext]}; separator="||">
) {
<alt>
}
<referencedElementsDeep:{el | [stream_<el> reset];<\n>}>
>>

rewriteClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
while ( <referencedElements:{el | [stream_<el> hasNext]}; separator="||"> ) {
<alt>
}
<referencedElements:{el | [stream_<el> reset];<\n>}>
>>

rewritePositiveClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
{
if ( !(<referencedElements:{el | [stream_<el> hasNext]}; separator=" || ">) ) {
@throw [RewriteEarlyExitException newException];
}
while ( <referencedElements:{el | [stream_<el> hasNext]}; separator=" || "> ) {
<alt>
}
<referencedElements:{el | [stream_<el> reset];<\n>}>
}
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>)

```

```

{
  <a.alt>
}<\n>
<else>
{
  <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = nil;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
  <ASTLabelType> *root_<treeLevel> = (<ASTLabelType> *)[[treeAdaptor class] newEmptyTree] retain];
  <root:rewriteElement()>
  <children:rewriteElement()>
  [treeAdaptor addChild:root_<treeLevel> toTree:root_<enclosingTreeLevel>];
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,terminalOptions,args) ::= <<
// TODO: args: <args> separator=", ">
[treeAdaptor addChild:<createRewriteNodeFromElement(...)> toTree:root_<treeLevel>];<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
[treeAdaptor addChild:[stream_<label> nextNode] toTree:root_<treeLevel>];<\n>
>>

/**
  Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
[treeAdaptor addChild:[stream_<label> nextNode] toTree:root_<treeLevel>];<\n>
>>

/** Gen ^($label ...) */

```

```

rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:[stream_<label> nextNode]
old:root_<treeLevel>];<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,terminalOptions,args) ::= <<
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:<createRewriteNodeFromElement(...)>
old:root_<treeLevel>];<\n>
>>

rewriteImaginaryTokenRef(args,token,terminalOptions,elementIndex) ::= <<
[treeAdaptor addChild:<createImaginaryNode(tokenType=token, ...)> toTree:root_<treeLevel>];<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,terminalOptions,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>
*)[treeAdaptor becomeRoot:<createImaginaryNode(tokenType=token, ...)> old:root_<treeLevel>];<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
[treeAdaptor addChild:[stream_<rule> nextTree] toTree:root_<treeLevel>];<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:(id\<Tree>)[stream_<rule> nextNode]
old:root_<treeLevel>];<\n>
>>

rewriteNodeAction(action) ::= <<
[treeAdaptor addChild:<action> toTree:root_<treeLevel>];<\n>
>>

```

```

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:<action>
old:root_<treeLevel>];<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
[treeAdaptor addChild:[stream_<label> nextTree] toTree:root_<treeLevel>];<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
[treeAdaptor addChild:[stream_<label> nextTree] toTree:root_<treeLevel>];<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:[stream_<label> nextNode]
old:root_<treeLevel>];<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType> *)[treeAdaptor becomeRoot:[stream_<label> nextNode]
old:root_<treeLevel>];<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
[treeAdaptor addChild:[stream_<label> nextTree] toTree:root_<treeLevel>];<\n>
>>

createImaginaryNode(tokenType,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
  [<terminalOptions.node> new<terminalOptions.node>:<tokenType> <if(args)>, <args; separator=", "><endif>]
<else>
  <if(args)>
    [[treeAdaptor createTree:<tokenType> <if(first(args))>FromToken:<first(args)><endif>
<if(first(rest(args)))>Text:<first(rest(args))><else>Text:@ "<tokenType>"<endif>] retain]
  <else>
    [[treeAdaptor createTree:<tokenType> Text:@ "<tokenType>"] retain]
  <endif>
<endif>
>>

createRewriteNodeFromElement(token,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
  [<terminalOptions.node> new<terminalOptions.node>:[stream_<token> nextToken]<if(args)>, <args;
separator=", "><endif>]

```

```

<else>
  <if(args)> <! must create new node from old !>
    [[treeAdaptor createTree:<token> Text:<first(rest(args))> <args; separator=", ">] retain]
  <else>
    [stream_<token> nextNode]
  <endif>
<endif>
>>

```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/ObjC/AST.stg
 No license file was found, but licenses were detected in source scan.

```

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```
*/
```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Java/ST.stg
 * /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Java/Dbg.stg
 * /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Python/AST.stg
 * /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/ObjC/ST4ObjC.stg

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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

/** Add a variable to track last element matched */

```
ruleDeclarations() ::= <<
```

```
<super.ruleDeclarations()>
```

```
var _first_0:<ASTLabelType>
```

```

= null;
var _last:<ASTLabelType> = null;<\n>
>>

/** What to emit when there is no rewrite rule. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(rewriteMode)>
retval.tree = <ASTLabelType>(_first_0);
if ( adaptor.getParent(retval.tree)!=null && adaptor.isNil( adaptor.getParent(retval.tree) ) )
    retval.tree = <ASTLabelType>(adaptor.getParent(retval.tree));
<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
    enclosingTreeLevel, treeLevel) ::= <<
_last = <ASTLabelType>(input.LT(1));
{
var _save_last_<treeLevel>:<ASTLabelType> = _last;
var _first_<treeLevel>:<ASTLabelType> = null;
<if(!rewriteMode)>
var root_<treeLevel>:<ASTLabelType> = <ASTLabelType>(adaptor.nil());
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if
( <actions.(actionScope).synpredgate> )<endif>
<if(root.el.rule)>
if ( _first_<enclosingTreeLevel>==null ) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if ( _first_<enclosingTreeLevel>==null ) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( input.LA(1)==TokenConstants.DOWN ) {
    matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
    <children:element()>
    matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
}
<else>
matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>

```

```

<children:element()>
matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

```

```
// TOKEN AST STUFF
```

```

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex,terminalOptions)
 ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.tokenRef(...)>
>>

```

```

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = new <terminalOptions.node>( <label> );
<else>
<label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>;
<endif>
>>

```

```

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions)

```



```

 ::= <<
 _last = <ASTLabelType>(input.LT(1));
 <super.tokenRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
 <if(terminalOptions.node)>
 <label>_tree = new <terminalOptions.node>(<label>);
 <else>
 <label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
 <endif><\n>
 root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<label>_tree, root_<treeLevel>));
 <if(backtracking)>}<endif>
 <endif>
 >>

```

```

 /** Match ^(label+=TOKEN ...) auto construct */
 tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
 <tokenRefRuleRoot(...)>
 <listLabel(elem=label,...)>
 >>

```

```

 /** Match . wildcard and auto dup the node/subtree */
 wildcard(token,label,elementIndex,terminalOptions) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.wildcard(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
 <label>_tree = (<ASTLabelType>)adaptor.dupTree(<label>);
 adaptor.addChild(root_<treeLevel>, <label>_tree);
 <if(backtracking)>}<endif>
 <else>
 <! rewrite mode !>
 <if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
 if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>;
 <endif>
 >>

```

// SET AST

```

 matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
 _last = <ASTLabelType>(input.LT(1));
 <super.matchSet(postmatchCode={
 <if(!rewriteMode)>
 <if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
 <if(terminalOptions.node)>
 <label>_tree = new <terminalOptions.node>(<label>);
 <else>
 <label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));

```

```

<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}\<endif>
<endif>
}, ...
)>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite(...)> <! set return tree !>
>>

matchSetBang(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug)
::= <<
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = new <terminalOptions.node>( <label>);
<else>
<label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
<endif><\n>
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<label>_tree, root_<treeLevel>));
<if(backtracking)>}\<endif>
<endif>
}, ...
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>
<if(!rewriteMode)>
adaptor.addChild(root_<treeLevel>, <label>.tree);
<else> <! rewrite mode !>
if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>.tree;
<endif>
>>

```

```

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(label, {<label>.tree})>
>>

/** ^(rule ...) auto
construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>root_<treeLevel> =
<ASTLabelType>(adaptor.becomeRoot(<label>.tree, root_<treeLevel>));
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(label, {<label>.tree})>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefRootTrack(...)>
>>

/**
^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefRuleRootTrackAndListLabel(...)>
>>

```

```

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,terminalOptions,scope) ::= <<
<if(terminalOptions.node)>
new <terminalOptions.node>(stream_<token>.nextNode())
<else>
stream_<token>.nextNode()
<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<\n><endif>
retval.tree = <ASTLabelType>(adaptor.rulePostProcessing(root_0));
<if(backtracking)>}<endif>
<endif>
>>

```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/ActionScript/ASTTreeParser.stg

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```

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```

```
*/
```

```
/** Template overrides to add debugging to normal Java output;
```

```
* If ASTs are built, then you'll also get ASTDbg.stg loaded.
```

```
*/
```

```
@outputFile.imports() ::= <<
<@super.imports()>
using Antlr.Runtime.Debug;
using IOException = System.IO.IOException;
>>
```

```
@genericParser.members() ::= <<
<if(grammar.grammarIsRoot)>
public static readonly
string[] ruleNames =
new string[]
{
"invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">
};<\n>
<endif>
<if(grammar.grammarIsRoot)><! grammar imports other grammar(s) !>
int ruleLevel = 0;
public virtual int RuleLevel { get { return ruleLevel; } }
public virtual void IncRuleLevel() { ruleLevel++; }
public virtual void DecRuleLevel() { ruleLevel--; }
<if(profile)>
<ctorForProfilingRootGrammar()>
<else>
<ctorForRootGrammar()>
<endif>
<ctorForPredefinedListener()>
<else><! imported grammar !>
public int RuleLevel { get { return <grammar.delegators:{g| <g.delegateName()>>}.RuleLevel; } }
public void IncRuleLevel() { <grammar.delegators:{g| <g.delegateName()>>}.IncRuleLevel(); }
public void DecRuleLevel() { <grammar.delegators:{g| <g.delegateName()>>}.DecRuleLevel(); }
<ctorForDelegateGrammar()>
<endif>
<if(profile)>
```

```

public override bool AlreadyParsedRule( IIntStream input, int ruleIndex )
{
    int stopIndex = GetRuleMemoization(ruleIndex, input.Index);
    ((Profiler)dbg).ExamineRuleMemoization(input,
    ruleIndex, stopIndex, <grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
    return base.AlreadyParsedRule(input, ruleIndex);
}<\n>
public override void Memoize( IIntStream input, int ruleIndex, int ruleStartIndex )
{
    ((Profiler)dbg).Memoize(input, ruleIndex, ruleStartIndex,
<grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
    base.Memoize(input, ruleIndex, ruleStartIndex);
}<\n>
<endif>
protected virtual bool EvalPredicate( bool result, string predicate )
{
    dbg.SemanticPredicate( result, predicate );
    return result;
}<\n>
>>

ctorForRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<! Same except we add port number and profile stuff if root grammar !>
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input )
: this( input, DebugEventSocketProxy.DefaultDebuggerPort, new RecognizerSharedState() )
{
}
<actions.(actionScope).ctorModifier;
null="public"> <name>( <inputStreamType> input, int port, RecognizerSharedState state )
: base( input, state )
{
    <createListenerAndHandshake()>
    <grammar.directDelegates:{g|<g:delegateName()> = new <g.recognizerName>( input, dbg, this.state,
this<grammar.delegates:{g|, <g:delegateName()>}> );}; separator="\n">
    <parserCtorBody()>
    <@finally()>
}<\n>
>>

ctorForProfilingRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input )
: this( input, new Profiler(null), new RecognizerSharedState() )
{
}
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, IDebugEventListener dbg,
RecognizerSharedState state )

```

```

: base( input, dbg, state )
{
  Profiler p = (Profiler)dbg;
  p.setParser(this);
  <grammar.directDelegates:
  {g|<g.delegateName()> = new <g.recognizerName>( input, dbg, this.state, this<grammar.delegators:{g|,
  <g.delegateName()>>> );}; separator="\n">
  <parserCtorBody()>
  <@finally()>
  }
  <\n>
  >>

/**
  Basically we don't want to set any dbg listeners are root will have it. */
ctorForDelegateGrammar() ::= <<
  <actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, IDebugEventListener dbg,
  RecognizerSharedState state<grammar.delegators:{g|, <g.recognizerName> <g.delegateName()>>> )
  : base( input, dbg, state )
  {
  <grammar.directDelegates:
  {g|<g.delegateName()> = new <g.recognizerName>( input, this, this.state<grammar.delegators:{g|,
  <g.delegateName()>>> );}; separator="\n">
  <parserCtorBody()>
  }<\n>
  >>

ctorForPredefinedListener() ::= <<
  <actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, IDebugEventListener dbg
  )
  <@superClassRef>: base( input, dbg, new RecognizerSharedState() )<@end>
  {
  <if(profile)>
  Profiler p = (Profiler)dbg;
  p.setParser(this);
  <endif>
  <grammar.directDelegates:{g|<g.delegateName()> = new <g.recognizerName>(input, dbg, this.state,
  this<grammar.delegators:{g|,
  <g.delegateName()>>>);}; separator="\n">
  <parserCtorBody()>
  <@finally()>
  }<\n>
  >>

createListenerAndHandshake() ::= <<
  <if(TREE_PARSER)>
  DebugEventSocketProxy proxy = new DebugEventSocketProxy( this, port, input.TreeAdaptor );<\n>
  <else>

```

```

DebugEventSocketProxy proxy = new DebugEventSocketProxy( this, port, null );<\n>
<endif>
DebugListener = proxy;
try
{
    proxy.Handshake();
}
catch ( IOException ioe )
{
    ReportError( ioe );
}
>>

@genericParser.superClassName() ::= "Debug<@super.superClassName()>"

/*
* Much of the following rules were merged into CSharp3.stg.
*/

@rule.preamble() ::= <<
if (RuleLevel == 0)
    DebugListener.Commence();
IncRuleLevel();
>>
//@rule.preamble() ::= <<
//try
//{
// dbg.EnterRule( GrammarFileName, "<ruleName>" );
// if ( RuleLevel == 0 )
// {
//     dbg.Commence();
// }
// IncRuleLevel();
// dbg.Location( <ruleDescriptor.tree.line>, <ruleDescriptor.tree.charPositionInLine> );<\n>
//>>

@rule.postamble() ::= <<
DecRuleLevel();
if (RuleLevel == 0)
    DebugListener.Terminate();
>>
//@rule.postamble()
//::= <<
//dbg.Location(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.charPositionInLine>);<\n>
//}
//finally
//{
// dbg.ExitRule( GrammarFileName, "<ruleName>" );

```



```

// DecRuleLevel();
// if ( RuleLevel == 0 )
// {
//   dbg.Terminate();
// }
//}<\n>
//>>

@@insertSynpreds.start() ::= "dbg.BeginBacktrack( state.backtracking );"
@@insertSynpreds.stop() ::= "dbg.EndBacktrack( state.backtracking, success );"

// Common debug event triggers used by region overrides below

//enterSubRule() ::= <<
//try
//{
//   dbg.EnterSubRule( <decisionNumber> );<\n>
//>>

//exitSubRule() ::= <<
//}
//finally
//{
//   dbg.ExitSubRule( <decisionNumber> );
//}<\n>
//>>

//enterDecision() ::= <<
//try
//{
//   dbg.EnterDecision( <decisionNumber> );<\n>
//>>

//exitDecision() ::= <<
//}
//finally
//{
//   dbg.ExitDecision( <decisionNumber> );
//}<\n>
//>>

//enterAlt(n) ::= "dbg.EnterAlt( <n> );<\n>"

// Region overrides that tell various constructs to add debugging
// triggers

@@block.predecision() ::= "<enterSubRule()><enterDecision()>"

```

```

//@block.postdecision() ::= "<exitDecision>"

//@block.postbranch() ::= "<exitSubRule>"

//@ruleBlock.predecision() ::= "<enterDecision>"

//@ruleBlock.postdecision() ::= "<exitDecision>"

//@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

//@blockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

//@positiveClosureBlock.preloop() ::= "<enterSubRule>"

//@positiveClosureBlock.postloop() ::= "<exitSubRule>"

//@positiveClosureBlock.predecision() ::= "<enterDecision>"

//@positiveClosureBlock.postdecision() ::= "<exitDecision>"

//@positiveClosureBlock.earlyExitException() ::=
// "dbg.RecognitionException( eee<decisionNumber> );<n>"

//@closureBlock.preloop() ::= "<enterSubRule>"

//@closureBlock.postloop() ::= "<exitSubRule>"

//@closureBlock.predecision() ::= "<enterDecision>"

//@closureBlock.postdecision() ::= "<exitDecision>"

//@altSwitchCase.prealt() ::= "<enterAlt(n=i)>"

//@element.prematch()
 ::=
// "dbg.Location( <it.line>, <it.pos> );"

//@matchSet.mismatchedSetException() ::=
// "dbg.RecognitionException( mse );"

//@dfaState.noViableAltException() ::= "dbg.RecognitionException( nvae );"

//@dfaStateSwitch.noViableAltException() ::= "dbg.RecognitionException( nvae );"

//dfaDecision(decisionNumber,description) ::= <<
//try
//{
// isCyclicDecision = true;

```

```

// <super.dfaDecision(...)>
//}
//catch ( NoViableAltException nvae )
//{
// dbg.RecognitionException( nvae );
// throw nvae;
//}
//>>

@@cyclicDFA.errorMethod() ::= <<
//public override void Error( NoViableAltException nvae )
//{
// ((DebugParser)recognizer).dbg.RecognitionException( nvae );
//}
//>>

```

```

/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
EvalPredicate(<pred>, "<description>")
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/CSharp3/Dbg.stg

```

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*/

group AST;

```
@outputFile.imports() ::= <<
```

```
<@super.imports(>
```

```
>>
```

```
@genericParser.members() ::= <<
```

```
<@super.members(>
```

```
<parserMembers(>
```

```
>>
```

```
/** Add an adaptor property that knows how to build trees */
```

```
parserMembers() ::= <<
```

```
<!protected TreeAdaptor adaptor = new CommonTreeAdaptor();<\n>!>
```

```
setTreeAdaptor: function(adaptor) {
```

```
    this.adaptor = adaptor;
```

```
    <grammar.directDelegates: { g|<g:delegateName(>.setTreeAdaptor(this.adaptor); }>
```

```
},
```

```
getTreeAdaptor: function() {
```

```
    return this.adaptor;
```

```
},
```

```
>>
```

```
@returnScope.ruleReturnMembers()
```

```
 ::= <<
```

```
getTree: function() { return this.tree; }
```

```
>>
```

```
/** Add a variable to track rule's return AST */
```

```
ruleDeclarations() ::= <<
```

```
<super.ruleDeclarations(>
```

```
var root_0 = null;<\n>
```

```
>>
```

```
ruleLabelDefs() ::= <<
```

```
<super.ruleLabelDefs(>
```

```
<ruleDescriptor.tokenLabels: { var <it.label.text>_tree=null; }; separator="\n">
```

```
<ruleDescriptor.tokenListLabels: { var <it.label.text>_tree=null; }; separator="\n">
```

```
<ruleDescriptor.allTokenRefsInAltsWithRewrites
```

```
    : { var stream_<it>=new org.antlr.runtime.tree.RewriteRuleTokenStream(this.adaptor, "token <it>"); }
```

```
separator="\n">
```

```
<ruleDescriptor.allRuleRefsInAltsWithRewrites
```

```

    :{ var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"rule <it>");};
separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
 * These should be turned off if doing rewrites. This must be a "mode"
 * as a rule could have both rewrite and AST within the same alternative
 * block.
 */
@alt.declarations()
::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = this.adaptor.nil();<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<token>.add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<token>.add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite
 */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

```

```

wildcardTrack(label,elementIndex) ::= <<
<super.wildcard(...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<rule.name>.add(<label>.getTree());
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<rule>.add(<label>.getTree());
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".getTree()",...)>
>>

//
R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">

```

```

// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {<\n>
<endif>
<prevRuleRootRef(>.tree = root_0;
<rewriteCodeLabels(>
root_0 = this.adaptor.nil();
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>.tree
= this.adaptor.rulePostProcessing(root_0);
this.input.replaceChildren(this.adaptor.getParent(retval.start),
                this.adaptor.getChildIndex(retval.start),
                this.adaptor.getChildIndex(_last),
                retval.tree);
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.tree = root_0;
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>.tree = root_0;
<endif>
<endif>
<endif>
<if(backtracking)>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {var stream_<it>=new org.antlr.runtime.tree.RewriteRule<rewriteElementType>Stream(this.adaptor,"token
<it>",<it>);};
separator="\n"
>
<referencedTokenListLabels
: {var stream_<it>=new org.antlr.runtime.tree.RewriteRule<rewriteElementType>Stream(this.adaptor,"token
<it>",<it>);};
separator="\n"
>
<referencedWildcardLabels
: {var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"wildcard
<it>",<it>);};
separator="\n"

```

```

>
<referencedWildcardListLabels
  :{ var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"wildcard <it>",list_<it>);};
  separator="\n"
>
<referencedRuleLabels
  :{ var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"token
<it>",<it>!=null?<it>.tree:null);};
  separator="\n"
>
<referencedRuleListLabels
  :{ var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"token <it>",list_<it>);};
  separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
// <fileName>:<description>
if ( <referencedElementsDeep:{el | stream_<el>.hasNext()}; separator="||"> ) {
  <alt>
}
<referencedElementsDeep:{el
| stream_<el>.reset();<n>}>
>>

rewriteClosureBlock(
  alt,rewriteBlockLevel,
  referencedElementsDeep, // all nested refs
  referencedElements, // elements in immediately block; no nested blocks
  description) ::=
<<
// <fileName>:<description>
while ( <referencedElements:{el | stream_<el>.hasNext()}; separator="||"> ) {
  <alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

rewritePositiveClosureBlock(
  alt,rewriteBlockLevel,

```



```

referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
if ( !( <referencedElements:{el | stream_<el>.hasNext()}; separator="||"> ) ) {
    throw new org.antlr.runtime.tree.RewriteEarlyExitException();
}
while ( <referencedElements:{el | stream_<el>.hasNext()}; separator="||"> ) {
    <alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

```

```

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if ( <a.pred> ) {
    <a.alt>
} <n>
<else>
{
    <a.alt>
} <n>
<endif>
>>

```

```

/**
For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

```

```

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
var root_<treeLevel> = this.adaptor.nil();
<root:rewriteElement()>
<children:rewriteElement()>
this.adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
} <n>
>>

```

```

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

```

```

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

```

```

/** Gen ID or ID[args] */

```

```

rewriteTokenRef(token,elementIndex,terminalOptions,args) ::= <<
this.adaptor.addChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/**
Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,terminalOptions,args) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(<createRewriteNodeFromElement(...)>, root_<treeLevel>);<\n>
>>

rewriteImaginaryTokenRef(args,token,terminalOptions,elementIndex) ::= <<
this.adaptor.addChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,terminalOptions,elementIndex) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>);<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this
rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/

```

```

prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<rule>.nextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<rule>.nextNode(), root_<treeLevel>);<\n>
>>

rewriteNodeAction(action) ::= <<
this.adaptor.addChild(root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(<action>, root_<treeLevel>);<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
this.adaptor.addChild(root_<treeLevel>,
stream_<label>.nextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

createImaginaryNode(tokenType,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
<! new MethodNode(IDLabel, args) !>
new <terminalOptions.node>(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>

```

```
this.adaptor.create(<tokenType>, <args; separator=", "><if(!args)>"<tokenType>"<endif>
<endif>
>>
```

```
createRewriteNodeFromElement(token,terminalOptions,args) ::= <<
<if(terminalOptions.node)>
new <terminalOptions.node>(stream_<token>.nextToken(<if(args)>,
<args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
this.adaptor.create(<token>, <args; separator=", ">)
<else>
stream_<token>.nextNode()
<endif>
<endif>
>>
```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/JavaScript/AST.stg

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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined

into tokenRef, ruleRef, ...

*/

/** Add a variable to track last element matched */

ruleDeclarations() ::= <<

<super.ruleDeclarations()>

<if(!ruleDescriptor.isSynPred)>

<ASTLabelType> _first_0 = default(<ASTLabelType>);

<ASTLabelType> _last = default(<ASTLabelType>);

<endif>

>>

/** What to emit when there is no rewrite rule. For auto build

* mode, does nothing.

*/

noRewrite(rewriteBlockLevel=false, treeLevel=false) ::= <<

<if(!ruleDescriptor.isSynPred)>

<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>

<if(rewriteMode)>

retval.Tree = (<ASTLabelType>)_first_0;

if (adaptor.GetParent(retval.Tree)!=null && adaptor.IsNil(adaptor.GetParent(retval.Tree)))

retval.Tree = (<ASTLabelType>)adaptor.GetParent(retval.Tree);

<endif>

<if(backtracking)>}<endif>

<endif>

>>

/** match ^(root children) in tree parser; override here to

* add tree construction actions.

*/

tree(root, actionsAfterRoot, children, nullableChildList,

```

    enclosingTreeLevel, treeLevel) ::= <<
<if(!ruleDescriptor.isSynPred)>
    _last
    = (<ASTLabelType>)input.LT(1);
    {
    <ASTLabelType> _save_last_<treeLevel> = _last;
    <ASTLabelType> _first_<treeLevel> = default(<ASTLabelType>);
    <if(!rewriteMode)>
    <ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.Nil();
    <endif>
    <root:element()>
    <if(rewriteMode)>
    <if(backtracking)>if (<actions.(actionScope).synpredgate><endif>
    <if(root.el.rule)>
    if (_first_<enclosingTreeLevel> == null) _first_<enclosingTreeLevel> = <root.el.label>.Tree;
    <else>
    if (_first_<enclosingTreeLevel> == null) _first_<enclosingTreeLevel> = <root.el.label>;
    <endif>
    <endif>
    <actionsAfterRoot:element()>
    <if(nullableChildList)>
    if (input.LA(1) == TokenType.Down) {
    Match(input, TokenType.Down, null); <checkRuleBacktrackFailure()>
    <children:element()>
    Match(input, TokenType.Up, null); <checkRuleBacktrackFailure()>
    }
    <else>
    Match(input, TokenType.Down, null); <checkRuleBacktrackFailure()>
    <children:element()>
    Match(input, TokenType.Up, null); <checkRuleBacktrackFailure()>
    <endif>
    <if(!rewriteMode)>
    adaptor.AddChild(root_<enclosingTreeLevel>,
    root_<treeLevel>);
    <endif>
    _last = _save_last_<treeLevel>;
    }
    <else>
    <super.tree(...)>
    <endif>
    >>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex,terminalOptions) ::= <<

```

```

<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<else>
<super.tokenRefBang(...)>
<endif>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree = new
<terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text; format="string"><endif>);
<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
alOptions.text)>,<terminalOptions.text;
format="string"><endif>);
<endif><\n>
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel> == null) _first_<treeLevel> = <label>;
<endif>
<else>
<super.tokenRef(...)>
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
<tokenRef(...)>
<listLabelElem(elem=label,...)>
<else>
<super.tokenRefAndListLabel(...)>
<endif>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<

```

```

<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree = new
<terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text;
format="string"><endif>);
<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
alOptions.text)>,<terminalOptions.text; format="string"><endif>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
<endif>
<else>
<super.tokenRefRuleRoot(...)>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
<tokenRefRuleRoot(...)>
<listLabelElem(elem=label,...)>
<else>
<super.tokenRefRuleRootAndListLabel(...)>
<endif>
>>

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,terminalOptions) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if
(<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.DupTree(<label>);
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel> == null) _first_<treeLevel> = <label>;
<endif>

```



```

<else>
<super.wildcard(...)>
<endif>
>>

// SET AST

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
<if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
  <super.matchSet(postmatchCode={
  <if(!rewriteMode)>
  <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
  <if(terminalOptions.node)>
  <label>_tree = new
  <terminalOptions.node>(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
  t)>,<terminalOptions.text; format="string"><endif>);
  <else>
  <label>_tree =
  (<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
  alOptions.text)>,<terminalOptions.text;
  format="string"><endif>);
  <endif><\n>
  adaptor.AddChild(root_<treeLevel>, <label>_tree);
  <if(backtracking)>}\}<endif>
  <endif>
  }, ...
  )>
<else>
<super.matchSet(...)>
<endif>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<if(!ruleDescriptor.isSynPred)>
<matchSet(...)>
<noRewrite(...)> <! set return tree !>
<else>
<super.matchRuleBlockSet(...)>
<endif>
>>

matchSetBang(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
<if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
  <super.matchSet(...)>
<else>
<super.matchSetBang(...)>

```

```

<endif>
>>

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
<if(!ruleDescriptor.isSynPred)>
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(terminalOptions.node)>
<label>_tree = new
<terminalOptions.node><(if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(terminalOptions.tex
t)>,<terminalOptions.text;
format="string"><endif>);
<else>
<label>_tree =
(<ASTLabelType>)adaptor.DupNode(<if(terminalOptions.type)><terminalOptions.type>,<endif><label><if(termin
alOptions.text)>,<terminalOptions.text; format="string"><endif>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>\}<endif>
<endif>
}, ...
)>
<else>
<super.matchSetRuleRoot(...)>
<endif>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(!rewriteMode)>
adaptor.AddChild(root_<treeLevel>, <label>.Tree);
<else> <! rewrite mode !>
if (_first_<treeLevel> == null) _first_<treeLevel> = <label>.Tree;
<endif>
<else>
<super.ruleRef(...)>
<endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope)

```

```

 ::= <<
 <if(!ruleDescriptor.isSynPred)>
 <ruleRef(...)>
 <listLabelElem(elem={<label>.Tree},...)>
 <else>
 <super.ruleRefAndListLabel(...)>
 <endif>
 >>

 /** ^(rule ...) auto construct */
 ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
 <if(!ruleDescriptor.isSynPred)>
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_<treeLevel> =
 (<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_<treeLevel>);
 <endif>
 <else>
 <super.ruleRefRuleRoot(...)>
 <endif>
 >>

 /** ^(x+=rule ...) auto construct */
 ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <if(!ruleDescriptor.isSynPred)>
 <ruleRefRuleRoot(...)>
 <listLabelElem(elem={<label>.Tree},...)>
 <else>
 <super.ruleRefRuleRootAndListLabel(...)>
 <endif>
 >>

 /** rule when output=AST and tracking for rewrite */
 ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrack(...)>
 >>

 /**
 x+=rule when output=AST and tracking for rewrite */
 ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <if(!ruleDescriptor.isSynPred)>
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrackAndListLabel(...)>
 <else>
 <super.ruleRefTrackAndListLabel(...)>
 <endif>

```

>>

```
/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRefRuleRootTrack(...)>
<else>
<super.ruleRefRuleRootTrack(...)>
<endif>
>>
```

```
/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRefRuleRootTrackAndListLabel(...)>
<else>
<super.ruleRefRuleRootTrackAndListLabel(...)>
<endif>
>>
```

```
/** Streams for token refs are tree nodes now; override to
 * change NextToken to NextNode.
 */
createRewriteNodeFromElement(token,terminalOptions,args)
 ::= <%
<if(terminalOptions.node)>
new
<terminalOptions.node><(if(terminalOptions.type)><terminalOptions.type>,<endif>stream_<token>.NextNode())
<else>
stream_<token>.NextNode()
<endif>
%>
```

```
ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(!ruleDescriptor.isSynPred)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
retval.Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
<if(backtracking)>}<endif>
<endif>
<endif>
>>
```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-

jar/org/antlr/codegen/templates/CSharp3/ASTTreeParser.stg

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*/

/*

New style messages. This file contains the actual layout of the messages emitted by ANTLR.

The text itself is coming out of the languages/*stg files, according to the chosen locale.

This file contains the default format ANTLR uses.

*/

group antlr;

location(file, line, column) ::= "<file>:<line>:<column>:"

message(id, text) ::= "<id> <text>"

report(location, message, type) ::= "<type>(<message.id>): <location> <message.text>"

wantsSingleLineMessage() ::= "false"

Found in path(s):

*

/opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/tool/templates/messages/formats/antlr.stg
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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

group ASTTreeParser;

```

/** Add a variable to track last element matched */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
_First[0] := nil;
_Last := nil;<\n>
>>

ruleDeclarationVars() ::= <<
<super.ruleDeclarationVars()>
_First, _Save_Last: array [0..63] of I<ASTLabelType>;
_Last: I<ASTLabelType>;
>>

/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if (State.Backtracking = 0) then
begin<endif>
<if(rewriteMode)>
RetVal.Tree := _First[0] as I<ASTLabelType>;
if (Adaptor.GetParent(RetVal.Tree) \<\> nil) and (Adaptor.IsNil(Adaptor.GetParent(RetVal.Tree))) then
RetVal.Tree := Adaptor.GetParent(RetVal.Tree) as I<ASTLabelType>;
<endif>
<if(backtracking)>end;<endif>
>>

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
_Last := Input.LT(1)
as I<ASTLabelType>;
begin
_Save_Last[<treeLevel>] := _Last;
_First[<treeLevel>] := nil;
<if(!rewriteMode)>
Root[<treeLevel>] := Adaptor.GetNilNode as I<ASTLabelType>;<\n>
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>
<if(root.el.rule)>
if (_First[<enclosingTreeLevel>] = nil) then _First[<enclosingTreeLevel>] := <root.el.label>.Tree;
<else>
if (_First[<enclosingTreeLevel>] = nil) then _First[<enclosingTreeLevel>] := <root.el.label>;

```

```

<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (Input.LA(1) = TToken.DOWN) then
begin
  Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
  <children:element()>
  Match(Input, TToken.UP, nil); <checkRuleBacktrackFailure()>
end;
<else>
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
Adaptor.AddChild(Root[<enclosingTreeLevel>],
Root[<treeLevel>]);
<endif>
_Last := _Save_Last[<treeLevel>];
end;<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
<if(terminalOptions.node)>
<label>_tree := T<terminalOptions.node>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Adaptor.AddChild(Root[<treeLevel>], <label>_tree);

```



```

<if(backtracking)>
end;
<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (State.Backtracking = 0) then <endif>
if (_First[<treeLevel>] = nil) then _First[<treeLevel>] := <label>;
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions)
::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<if(terminalOptions.node)>
<label>_tree := T<terminalOptions.node>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Root[<treeLevel>] := Adaptor.BecomeRoot(<label>_tree, Root[<treeLevel>]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.matchSet(..., postmatchCode={

```

```

<if(!rewriteMode)>
<if(backtracking)>if
(State.Backtracking = 0) then begin <endif>
<if(terminalOptions.node)>
<label>_tree := T<terminalOptions.node>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Adaptor.AddChild(Root[<treeLevel>], <label>_tree);
<if(backtracking)>end;<endif>
<endif>
}
)>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then begin <endif>
<if(terminalOptions.node)>
<label>_tree := T<terminalOptions.node>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Root[<treeLevel>] := Adaptor.BecomeRoot(<label>_tree,
Root[<treeLevel>]) as I<ASTLabelType>;
<if(backtracking)>end;<endif>
<endif>
}
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRef(...)>

```

```

<if(backtracking)>if (State.Backtracking = 0) then <endif>
<if(!rewriteMode)>
Adaptor.AddChild(Root[<treeLevel>], <label>.Tree);
<else> <! rewrite mode !>
if (_First[<treeLevel>] = nil) then _First[<treeLevel>] := <label>.Tree;
<endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>Root[<treeLevel>] :=
Adaptor.BecomeRoot(<label>.Tree, Root[<treeLevel>]) as I<ASTLabelType>;
<endif>
>>

/**
^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRefRootTrack(...)>
>>

```

```

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken
 * to nextNode.
 */
createRewriteNodeFromElement(token,terminalOptions,scope) ::= <<
<if(terminalOptions.node)>
T<terminalOptions.node>.Create((Locals['Stream_<token>'] as IRewriteRuleElementStream).NextNode)
<else>
(Locals['Stream_<token>'] as IRewriteRuleElementStream).NextNode
<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(!rewriteMode)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
RefVal.Tree := Adaptor.RulePostProcessing(Root[0]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Delphi/ASTTreeParser.stg

```

No license file was found, but licenses were detected in source scan.

```

/*

```

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*/

/** Templates for building ASTs during tree parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* Each combination has its own template except that label/no label

* is combined into tokenRef, ruleRef, ...

*/

group ASTTreeParser;

/** Add a variable to track last element matched */

ruleDeclarations()

::= <<

<super.ruleDeclarations()>

<ASTLabelType> _first_0 = null;

<ASTLabelType> _last = null;<\n>

>>

/** What to emit when there is no rewrite rule. For auto build

* mode, does nothing.

*/

noRewrite(rewriteBlockLevel, treeLevel) ::= <<

<if(backtracking)>if (state.backtracking==0) {<endif>

<if(rewriteMode)>

retval.tree = (<ASTLabelType>)_first_0;

```

if ( adaptor.getParent(retval.tree)!=null && adaptor.isNil( adaptor.getParent(retval.tree) ) )
    retval.tree = (<ASTLabelType>)adaptor.getParent(retval.tree);
<endif>
<if(backtracking)><endif>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
    enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)input.LT(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = null;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.nil();
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if
    ( state.backtracking==0 )<endif>
<if(root.el.rule)>
if ( _first_<enclosingTreeLevel>==null ) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if ( _first_<enclosingTreeLevel>==null ) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( input.LA(1)==Token.DOWN ) {
    match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
    <children:element()>
    match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

```

```

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
  _last = (<ASTLabelType>)input.LT(1);
  <super.tokenRef(...)>
>>

/**
  ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
  _last = (<ASTLabelType>)input.LT(1);
  <super.tokenRef(...)>
  <if(!rewriteMode)>
  <if(backtracking)>if ( state.backtracking==0 ) {<endif>
  <if(terminalOptions.node)>
  <label>_tree = new <terminalOptions.node>(<label>);
  <else>
  <label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
  <endif><\n>
  adaptor.addChild(root_<treeLevel>, <label>_tree);
  <if(backtracking)>}<endif>
  <else> <! rewrite mode !>
  <if(backtracking)>if ( state.backtracking==0 )<endif>
  if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>;
  <endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
  <tokenRef(...)>
  <listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
  _last = (<ASTLabelType>)input.LT(1);
  <super.tokenRef(...)>
  <if(!rewriteMode)>
  <if(backtracking)>if
  ( state.backtracking==0 ) {<endif>
  <if(terminalOptions.node)>
  <label>_tree = new <terminalOptions.node>(<label>);
  <else>
  <label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
  <endif><\n>
  root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);

```

```

<endif(backtracking)>><endif>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
  _last = (<ASTLabelType>)input.LT(1);
  <super.matchSet(..., postmatchCode={
  <if(!rewriteMode)>
  <if(backtracking)>if ( state.backtracking==0 ) {<endif>
  <if(terminalOptions.node)>
  <label>_tree = new <terminalOptions.node>(<label>);
  <else>
  <label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
  <endif><\n>
  adaptor.addChild(root_<treeLevel>, <label>_tree);
  <if(backtracking)>><endif>
  <endif>
  }
  )>
  >>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0")
  ::= <<
  <matchSet(...)>
  <noRewrite()> <! set return tree !>
  >>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
  _last = (<ASTLabelType>)input.LT(1);
  <super.matchSet(...)>
  >>

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
  <super.matchSet(..., postmatchCode={
  <if(!rewriteMode)>
  <if(backtracking)>if ( state.backtracking==0 ) {<endif>
  <if(terminalOptions.node)>
  <label>_tree = new <terminalOptions.node>(<label>);
  <else>
  <label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);

```



```

<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)></endif>
<endif>
}
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if ( state.backtracking==0 ) <endif>
<if(!rewriteMode)>
adaptor.addChild(root_<treeLevel>, <label>.getTree());
<else>
<! rewrite mode !>
if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>.tree;
<endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( state.backtracking==0 ) <endif>root_<treeLevel> =
(<ASTLabelType>)adaptor.becomeRoot(<label>.getTree(), root_<treeLevel>);
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** Streams for token refs are tree nodes now; override to
* change nextToken to nextNode.
*/

```

```
createRewriteNodeFromElement(token,terminalOptions,scope) ::= <<
<if(terminalOptions.node)>
new <terminalOptions.node>(stream_<token>.nextNode())
<else>
stream_<token>.nextNode()
<endif>
>>
```

```
ruleCleanUp()
::= <<
<super.ruleCleanUp()>
<if(!rewriteMode)>
<if(backtracking)>if ( state.backtracking==0 ) {<\n><endif>
retval.tree = (<ASTLabelType>)adaptor.rulePostProcessing(root_0);
<if(backtracking)>}<endif>
<endif>
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Perl5/ASTTreeParser.stg
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```

/*

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*/

/*

* This code generating template and the associated C runtime was produced by:

* Jim Idle jimi|hereisanat|idle|dotgoeshere|ws.

* If it causes the destruction of the Universe, it will be pretty cool so long as

* I am in a different one at the time.

*/

cTypeInitMap ::= [

"int" : "0", // Integers start out being 0

"long" : "0", // Longs start out

being 0

"float" : "0.0", // Floats start out being 0

"double" : "0.0", // Doubles start out being 0

"ANTLR3_BOOLEAN" : "ANTLR3_FALSE", // Booleans start out being Antlr C for false

"byte" : "0", // Bytes start out being 0

"short" : "0", // Shorts start out being 0

"char" : "0" // Chars start out being 0

]

leadIn(type) ::=

<<

/** \file

* This <type> file was generated by \$ANTLR version <ANTLRVersion>

*

* - From the grammar source file : <fileName>

* - On : <generatedTimestamp>

<if(LEXER)>

* - for the lexer : <name>Lexer

<endif>

<if(PARSER)>

* - for the parser : <name>Parser

<endif>

<if(TREE_PARSER)>

* - for the tree parser : <name>TreeParser

<endif>

*

* Editing it, at least manually, is not wise.

*

* C language generator and runtime by Jim Idle, jimi|hereisanat|idle|dotgoeshere|ws.

*

*

>>

```

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile( LEXER,
            PARSER,
            TREE_PARSER,
            actionScope,
            actions,
            docComment,
            recognizer,
            name,
            tokens,
            tokenNames,
            rules,
            cyclicDFAs,
            bitsets,
            buildTemplate,
            buildAST,
            rewriteMode,
            profile,
            backtracking,
            synpreds,
            memoize,
            numRules,
            fileName,
            ANTLRVersion,
            generatedTimestamp,
            trace,
            scopes,
            superClass,
            literals
            ) ::=

<<
<leadIn("C source")>
*/
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```

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```

```
<if(actions.(actionScope).header)>
```

```
/* =====
```

```
* This is what the grammar programmer asked us to put at the top of every file.
```

```
*/
```

```
<actions.(actionScope).header>
```

```
/* End of Header action.
```

```
* =====
```

```
*/
```

```
<endif>
```

```
/* -----
```

```
* Include the ANTLR3 generated header file.
```

```
*/
```

```
#include "<name>.h"
```

```
<actions.(actionScope).postinclude>
```

```
/* ----- */
```

```
<docComment>
```

```
<if(literals)>
```

```
/** String
```

```
literals used by <name> that we must do things like MATCHS() with.
```

```
* C will normally just lay down 8 bit characters, and you can use L"xxx" to
```

```
* get wchar_t, but wchar_t is 16 bits on Windows, which is not UTF32 and so
```

```
* we perform this little trick of defining the literals as arrays of UINT32
```

```
* and passing in the address of these.
```

```
*/
```

```
<literals:{it | static ANTLR3_UCHAR lit_<i>[] = <it>;}; separator="\n">
```

<endif>

```
/* MACROS that hide the C interface implementations from the
 * generated code, which makes it a little more understandable to the human eye.
 * I am very much against using C pre-processor macros for function calls and bits
 * of code as you cannot see what is happening when single stepping in debuggers
 * and so on. The exception (in my book at least) is for generated code, where you are
 * not maintaining it, but may wish to read and understand it. If you single step it, you know that input()
 * hides some indirect calls, but is always referring to the input
 * stream. This is
 * probably more readable than ctx->input->istream->input(snarfle0->blarg) and allows me to rejig
 * the runtime interfaces without changing the generated code too often, without
 * confusing the reader of the generated output, who may not wish to know the gory
 * details of the interface inheritance.
 */
```

```
#define CTX ctx
```

```
/* Aids in accessing scopes for grammar programmers
```

```
*/
```

```
#undef SCOPE_TYPE
```

```
#undef SCOPE_STACK
```

```
#undef SCOPE_TOP
```

```
#define SCOPE_TYPE(scope) p<name>_##scope##_SCOPE
```

```
#define SCOPE_STACK(scope) p<name>_##scope##_Stack
```

```
#define SCOPE_TOP(scope) ctx->p<name>_##scope##_Top
```

```
#define SCOPE_SIZE(scope) ctx->p<name>_##scope##_Stack_limit
```

```
#define SCOPE_INSTANCE(scope, i) (ctx->SCOPE_STACK(scope)->get(ctx->SCOPE_STACK(scope),i))
```

```
<if(LEXER)>
```

```
/* Macros for accessing things in a lexer
```

```
*/
```

```
#undef LEXER
```

```
#undef RECOGNIZER
```

```
#undef RULEMEMO
```

```
#undef GETCHARINDEX
```

```
#undef GETLINE
```

```
#undef GETCHARPOSITIONINLINE
```

```
#undef EMIT
```

```
#undef EMITNEW
```

```
#undef
```

```
    MATCHC
```

```
#undef MATCHS
```

```

#undef MATCHRANGE
#undef LTOKEN
#undef HASFAILED
#undef FAILEDFLAG
#undef INPUT
#undef STRSTREAM
#undef LA
#undef HASEXCEPTION
#undef EXCEPTION
#undef CONSTRUCTEX
#undef CONSUME
#undef LRECOVER
#undef MARK
#undef REWIND
#undef REWINDLAST
#undef BACKTRACKING
#undef MATCHANY
#undef MEMOIZE
#undef HAVEPARSEDRULE
#undef GETTEXT
#undef INDEX
#undef SEEK
#undef PUSHSTREAM
#undef POPSTREAM
#undef SETTEXT
#undef SETTEXT8

#define LEXER ctx->pLexer
#define RECOGNIZER LEXER->rec
#define LEXSTATE RECOGNIZER->state
#define TOKSOURCE LEXSTATE->tokSource
#define GETCHARINDEX() LEXER->getCharIndex(LEXER)
#define GETLINE() LEXER->getLine(LEXER)
#define GETTEXT() LEXER->getText(LEXER)
#define GETCHARPOSITIONINLINE() LEXER->getCharPositionInLine(LEXER)
#define EMIT() LEXSTATE->type = _type; LEXER->emit(LEXER)
#define EMITNEW(t) LEXER->emitNew(LEXER,
t)
#define MATCHC(c) LEXER->matchc(LEXER, c)
#define MATCHS(s) LEXER->matchs(LEXER, s)
#define MATCHRANGE(c1,c2) LEXER->matchRange(LEXER, c1, c2)
#define MATCHANY() LEXER->matchAny(LEXER)
#define LTOKEN LEXSTATE->token
#define HASFAILED() (LEXSTATE->failed == ANTLR3_TRUE)
#define BACKTRACKING LEXSTATE->backtracking
#define FAILEDFLAG LEXSTATE->failed
#define INPUT LEXER->input
#define STRSTREAM INPUT

```

```

#define ISTREAM INPUT->istream
#define INDEX() ISTREAM->index(ISTREAM)
#define SEEK(n) ISTREAM->seek(ISTREAM, n)
#define EOF_TOKEN &(LEXSTATE->tokSource->eofToken)
#define HASEXCEPTION() (LEXSTATE->error == ANTLR3_TRUE)
#define EXCEPTION LEXSTATE->exception
#define CONSTRUCTEX() RECOGNIZER->exConstruct(RECOGNIZER)
#define LRECOVER() LEXER->recover(LEXER)
#define MARK() ISTREAM->mark(ISTREAM)
#define REWIND(m) ISTREAM->rewind(ISTREAM, m)
#define
    REWINDLAST() ISTREAM->rewindLast(ISTREAM)
#define MEMOIZE(ri,si) RECOGNIZER->memoize(RECOGNIZER, ri, si)
#define HAVEPARSEDRULE(r) RECOGNIZER->alreadyParsedRule(RECOGNIZER, r)
#define PUSHSTREAM(str) LEXER->pushCharStream(LEXER, str)
#define POPSTREAM() LEXER->popCharStream(LEXER)
#define SETTEXT(str) LEXSTATE->text = str
#define SKIP() LEXSTATE->token = &(TOKSOURCE->skipToken)
#define USER1 LEXSTATE->user1
#define USER2 LEXSTATE->user2
#define USER3 LEXSTATE->user3
#define CUSTOM LEXSTATE->custom
#define RULEMEMO LEXSTATE->ruleMemo
#define DBG RECOGNIZER->debugger

/* If we have been told we can rely on the standard 8 bit or UTF16 input
 * stream, then we can define our macros to use the direct pointers
 * in the input object, which is much faster than indirect calls. This
 * is really only significant to lexers with a lot of fragment rules (which
 * do not place LA(1) in a temporary at the moment) and even then
 * only if there is
 * a lot of input (order of say 1M or so).
 */
#if defined(ANTLR3_INLINE_INPUT_8BIT) || defined(ANTLR3_INLINE_INPUT_UTF16)

# ifdef ANTLR3_INLINE_INPUT_8BIT

/* 8 bit character set */

# define NEXTCHAR ((pANTLR3_UINT8)(INPUT->nextChar))
# define DATAP ((pANTLR3_UINT8)(INPUT->data))

# else

# define NEXTCHAR ((pANTLR3_UINT16)(INPUT->nextChar))
# define DATAP ((pANTLR3_UINT16)(INPUT->data))

# endif

```



```

# define LA(n) ((NEXTCHAR + n) > (DATAP + INPUT->sizeBuf) ? ANTLR3_CHARSTREAM_EOF :
(ANTLR3_UCHAR)(*NEXTCHAR + n - 1))
# define CONSUME() //
{ //
if (NEXTCHAR < (DATAP + INPUT->sizeBuf)) //
{ //
INPUT->charPositionInLine++; //
if ((ANTLR3_UCHAR)(*NEXTCHAR) == INPUT->newlineChar) //
{ //
INPUT->line++; //
INPUT->charPositionInLine = 0; //
INPUT->currentLine = (void *) (NEXTCHAR + 1); //
} //
INPUT->nextChar = (void *) (NEXTCHAR + 1); //
} //
}

#else

// Pick up the input character by calling the input stream implementation.
//
#define CONSUME() INPUT->istream->consume(INPUT->istream)
#define LA(n) INPUT->istream->_LA(INPUT->istream, n)

#endif
<endif>

<if(PARSER)>
/* Macros for accessing things in the parser
*/

#undef PARSER
#undef RECOGNIZER
#undef HAVEPARSEDRULE
#undef MEMOIZE
#undef INPUT
#undef STRSTREAM
#undef HASEXCEPTION
#undef EXCEPTION
#undef MATCHT
#undef
MATCHANYT
#undef FOLLOWSTACK
#undef FOLLOWPUSH
#undef FOLLOWPOP
#undef PRECOVER
#undef PREPORTERROR

```

```

#undef LA
#undef LT
#undef CONSTRUCTEX
#undef CONSUME
#undef MARK
#undef REWIND
#undef REWINDLAST
#undef PERRORRECOVERY
#undef HASFAILED
#undef FAILEDFLAG
#undef RECOVERFROMMISMATCHEDSET
#undef RECOVERFROMMISMATCHEDELEMENT
#undef INDEX
#undef ADAPTOR
#undef SEEK
#undef RULEMEMO
#undef DBG

#define PARSER ctx->pParser
#define RECOGNIZER PARSER->rec
#define PSRSTATE RECOGNIZER->state
#define HAVEPARSEDRULE(r) RECOGNIZER->alreadyParsedRule(RECOGNIZER, r)
#define MEMOIZE(ri,si) RECOGNIZER->memoize(RECOGNIZER, ri, si)
#define INPUT PARSER->tstream
#define STRSTREAM INPUT
#define ISTREAM INPUT->istream
#define INDEX() ISTREAM->index(INPUT->istream)
#define HASEXCEPTION() (PSRSTATE->error == ANTLR3_TRUE)
#define EXCEPTION PSRSTATE->exception
#define
    MATCH(t, fs) RECOGNIZER->match(RECOGNIZER, t, fs)
#define MATCHANY() RECOGNIZER->matchAny(RECOGNIZER)
#define FOLLOWSTACK PSRSTATE->following
#ifdef SKIP_FOLLOW_SETS
#define FOLLOWPUSH(x)
#define FOLLOWPOP()
#else
#define FOLLOWPUSH(x) FOLLOWSTACK->push(FOLLOWSTACK, ((void *)&(x)), NULL)
#define FOLLOWPOP() FOLLOWSTACK->pop(FOLLOWSTACK)
#endif
#define PRECOVER() RECOGNIZER->recover(RECOGNIZER)
#define PREPORTERROR() RECOGNIZER->reportError(RECOGNIZER)
#define LA(n) INPUT->istream->_LA(ISTREAM, n)
#define LT(n) INPUT->_LT(INPUT, n)
#define CONSTRUCTEX() RECOGNIZER->exConstruct(RECOGNIZER)
#define CONSUME() ISTREAM->consume(ISTREAM)
#define MARK() ISTREAM->mark(ISTREAM)
#define REWIND(m) ISTREAM->rewind(ISTREAM, m)

```

```

#define REWINDLAST() ISTREAM->rewindLast(ISTREAM)
#define SEEK(n) ISTREAM->seek(ISTREAM, n)
#define PERRORRECOVERY PSRSTATE->errorRecovery
#define
    FAILEDFLAG PSRSTATE->failed
#define HASFAILED() (FAILEDFLAG == ANTLR3_TRUE)
#define BACKTRACKING PSRSTATE->backtracking
#define RECOVERFROMMISMATCHEDSET(s) RECOGNIZER->recoverFromMismatchedSet(RECOGNIZER,
s)
#define RECOVERFROMMISMATCHEDELEMENT(e) RECOGNIZER-
>recoverFromMismatchedElement(RECOGNIZER, s)
#define ADAPTOR          ctx->adaptor
#define RULEMEMO        PSRSTATE->ruleMemo
#define DBG            RECOGNIZER->debugger

<endif>

<if(TREE_PARSER)>
/* Macros for accessing things in the parser
*/

#undef  PARSER
#undef  RECOGNIZER
#undef  HAVEPARSEDRULE
#undef  INPUT
#undef  STRSTREAM
#undef  HASEXCEPTION
#undef  EXCEPTION
#undef  MATCHT
#undef  MATCHANYT
#undef  FOLLOWSTACK
#undef  FOLLOWPUSH
#undef  FOLLOWPOP
#undef  PRECOVER
#undef  PREPORTERROR
#undef  LA
#undef  LT
#undef  CONSTRUCTEX
#undef  CONSUME
#undef  MARK
#undef  REWIND
#undef  REWINDLAST
#undef  PERRORRECOVERY
#undef
    HASFAILED
#undef  FAILEDFLAG
#undef  RECOVERFROMMISMATCHEDSET
#undef  RECOVERFROMMISMATCHEDELEMENT

```

```

#undef BACKTRACKING
#undef ADAPTOR
#undef RULEMEMO
#undef SEEK
#undef INDEX
#undef DBG

#define PARSER ctx->pTreeParser
#define RECOGNIZER PARSER->rec
#define PSRSTATE RECOGNIZER->state
#define HAVEPARSEDRULE(r) RECOGNIZER->alreadyParsedRule(RECOGNIZER, r)
#define INPUT PARSER->ctnstream
#define ISTREAM INPUT->tstream->istream
#define STRSTREAM INPUT->tstream
#define HASEXCEPTION() (PSRSTATE->error == ANTLR3_TRUE)
#define EXCEPTION PSRSTATE->exception
#define MATCHT(t, fs) RECOGNIZER->match(RECOGNIZER, t, fs)
#define MATCHANYT() RECOGNIZER->matchAny(RECOGNIZER)
#define FOLLOWSTACK PSRSTATE->following
#define FOLLOWPUSH(x) FOLLOWSTACK->push(FOLLOWSTACK, ((void *)&(x)), NULL)
#define FOLLOWPOP() FOLLOWSTACK->pop(FOLLOWSTACK)
#define
    PRECOVER() RECOGNIZER->recover(RECOGNIZER)
#define PREPORTERROR() RECOGNIZER->reportError(RECOGNIZER)
#define LA(n) ISTREAM->_LA(ISTREAM, n)
#define LT(n) INPUT->tstream->_LT(INPUT->tstream, n)
#define CONSTRUCTEX() RECOGNIZER->exConstruct(RECOGNIZER)
#define CONSUME() ISTREAM->consume(ISTREAM)
#define MARK() ISTREAM->mark(ISTREAM)
#define REWIND(m) ISTREAM->rewind(ISTREAM, m)
#define REWINDLAST() ISTREAM->rewindLast(ISTREAM)
#define PERRORRECOVERY PSRSTATE->errorRecovery
#define FAILEDFLAG PSRSTATE->failed
#define HASFAILED() (FAILEDFLAG == ANTLR3_TRUE)
#define BACKTRACKING PSRSTATE->backtracking
#define RECOVERFROMMISMATCHEDSET(s) RECOGNIZER->recoverFromMismatchedSet(RECOGNIZER,
s)
#define RECOVERFROMMISMATCHEDELEMENT(e) RECOGNIZER-
>recoverFromMismatchedElement(RECOGNIZER, s)
#define ADAPTOR INPUT->adaptor
#define RULEMEMO PSRSTATE->ruleMemo
#define SEEK(n) ISTREAM->seek(ISTREAM,
n)
#define INDEX() ISTREAM->index(ISTREAM)
#define DBG RECOGNIZER->debugger

<endif>

```

```

#define TOKTEXT(tok, txt) tok, (pANTLR3_UINT8)txt

/* The 4 tokens defined below may well clash with your own #defines or token types. If so
 * then for the present you must use different names for your defines as these are hard coded
 * in the code generator. It would be better not to use such names internally, and maybe
 * we can change this in a forthcoming release. I deliberately do not #undef these
 * here as this will at least give you a redefined error somewhere if they clash.
 */
#define UP ANTLR3_TOKEN_UP
#define DOWN ANTLR3_TOKEN_DOWN
#define EOR ANTLR3_TOKEN_EOR
#define INVALID ANTLR3_TOKEN_INVALID

/* =====
 * Functions to create and destroy scopes. First come the rule scopes, followed
 * by the global
 * declared scopes.
 */

<rules: {r |<if(r.ruleDescriptor.ruleScope)>
<ruleAttributeScopeFuncDecl(scope=r.ruleDescriptor.ruleScope)>
<ruleAttributeScopeFuncs(scope=r.ruleDescriptor.ruleScope)>
<endif>}>

<recognizer.scopes:{it | <if(it.isDynamicGlobalScope)>
<globalAttributeScopeFuncDecl(it)>
<globalAttributeScopeFuncs(it)>
<endif>}>

/* ===== */

/* =====
 * Start of recognizer
 */

<recognizer>

/* End of code
 * =====
 */

>>
headerFileExtension() ::= ".h"

headerFile( LEXER,
            PARSER,

```

```

TREE_PARSER,
actionScope,
actions,
docComment,
recognizer,
name,
tokens,
tokenNames,
rules,
cyclicDFAs,
bitsets,
buildTemplate,

buildAST,
rewriteMode,
profile,
backtracking,
synpreds,
memoize,
numRules,
fileName,
ANTLRVersion,
generatedTimestamp,
trace,
scopes,
superClass,
literals
) ::=
<<
<leadIn("C header")>
<if(PARSER)>
* The parser <mainName()>
<endif>
<if(LEXER)>
* The lexer <mainName()>
<endif>
<if(TREE_PARSER)>
* The tree parser <mainName()>
<endif>
has the callable functions (rules) shown below,
* which will invoke the code for the associated rule in the source grammar
* assuming that the input stream is pointing to a token/text stream that could begin
* this rule.
*
* For instance if you call the first (topmost) rule in a parser grammar, you will
* get the results of a full parse, but calling a rule half way through the grammar will
* allow you to pass part of a full token stream to the parser, such as for syntax checking
* in editors

```

and so on.

*

- * The parser entry points are called indirectly (by function pointer to function) via
- * a parser context typedef p<name>, which is returned from a call to <name>New().

*

<if(LEXER)>

- * As this is a generated lexer, it is unlikely you will call it 'manually'. However
- * the methods are provided anyway.

*

<endif>

- * The methods in p<name> are as follows:

*

```
* <rules:{r | <if(!r.ruleDescriptor.isSynPred)> - <headerReturnType(ruleDescriptor=r.ruleDescriptor,...)>
p<name>-><r.ruleDescriptor.name>(p<name><endif>}; separator="\n * ">
```

*

- * The return type for any particular rule is of course determined by the source
- * grammar file.

*/

```
// [The "BSD license"]
```

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```

#ifndef _<name>_H
#define _<name>_H
<actions.(actionScope).preincludes>
/* =====
* Standard antlr3 C runtime definitions
*/
#include \<antlr3.h>

/* End of standard antlr 3 runtime definitions
* =====
*/
<actions.(actionScope).includes>

#ifdef __cplusplus
extern "C" {
#endif

// Forward declare the context typedef so that we can use it before it is
// properly defined. Delegates and delegates (from import statements) are
// interdependent and their context structures contain pointers to each other
// C only allows such things to be declared if you pre-declare the typedef.
//
typedef struct <name>_Ctx_struct
<name>, * p<name>;

<if(recognizer.grammar.delegates)>
// Include delegate definition header files
//
<recognizer.grammar.delegates: {g|#include \<<g.recognizerName>.h>}; separator="\n">

<endif>

<actions.(actionScope).header>

#ifdef ANTLR3_WINDOWS
// Disable: Unreferenced parameter, - Rules with parameters that are not used
// constant conditional, - ANTLR realizes that a prediction is always true (synpred usually)
// initialized but unused variable - tree rewrite variables declared but not needed
// Unreferenced local variable - lexer rule declares but does not always use _type
// potentially uninitialized variable used - retval always returned from a rule
// unreferenced local function has been removed - susually getTokenNames or freeScope, they can go without
warnigns
//
// These are only really displayed at warning level /W4 but that is the code ideal I am aiming at
// and the codegen must generate some of these

```



```

warnings by necessity, apart from 4100, which is
// usually generated when a parser rule is given a parameter that it does not use. Mostly though
// this is a matter of orthogonality hence I disable that one.
//
#pragma warning( disable : 4100 )
#pragma warning( disable : 4101 )
#pragma warning( disable : 4127 )
#pragma warning( disable : 4189 )
#pragma warning( disable : 4505 )
#pragma warning( disable : 4701 )
#endif
<if(backtracking)>

/* =====
* BACKTRACKING IS ENABLED
* =====
*/
<endif>

<rules:{r |<headerReturnScope(ruleDescriptor=r.ruleDescriptor,...)>}>

<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScopeDecl(it)><endif>}>
<rules:{r |<ruleAttributeScopeDecl(scope=r.ruleDescriptor.ruleScope)>}>
<if(recognizer.grammar.delegators)>
// Include delegator definition header files
//
<recognizer.grammar.delegators: {g##include \<<g.recognizerName>.h}; separator="\n">

<endif>

/** Context tracking structure for <mainName()>
*/
struct
<name>_Ctx_struct
{
/** Built in ANTLR3 context tracker contains all the generic elements
* required for context tracking.
*/
<if(PARSER)>
pANTLR3_PARSER pParser;
<endif>
<if(LEXER)>
pANTLR3_LEXER pLexer;
<endif>
<if(TREE_PARSER)>
pANTLR3_TREE_PARSER pTreeParser;
<endif>

```

```

<if(recognizer.grammar.delegates)>
  <recognizer.grammar.delegates:
    {g|p<g.recognizerName> <g.delegateName(>}; separator="\n">
  <endif>
<if(recognizer.grammar.delegators)>
  <recognizer.grammar.delegators:
    {g|p<g.recognizerName> <g.delegateName(>}; separator="\n">
  <endif>
<scopes:{it | <if(it.isDynamicGlobalScope)>
  <globalAttributeScopeDef(it)>
<endif>} ; separator="\n\n">
<rules: {r | <if(r.ruleDescriptor.ruleScope)>
  <ruleAttributeScopeDef(scope=r.ruleDescriptor.ruleScope)>
<endif>}>

<if(LEXER)>
  <rules:{r | <if(!r.ruleDescriptor.isSynPred)><headerReturnType(ruleDescriptor=r.ruleDescriptor)>
(*m<r.ruleDescriptor.name>) (struct <name>_Ctx_struct
  * ctx<if(r.ruleDescriptor.parameterScope)>,
<endif><r.ruleDescriptor.parameterScope:parameterScope(>);<endif>} ; separator="\n">
<endif>
<if(!LEXER)>
  <rules:{r | <headerReturnType(ruleDescriptor=r.ruleDescriptor)> (*<r.ruleDescriptor.name>) (struct
<name>_Ctx_struct * ctx<if(r.ruleDescriptor.parameterScope)>,
<endif><r.ruleDescriptor.parameterScope:parameterScope(>);}; separator="\n">
<! generate rule/method definitions for imported rules so they
  appear to be defined in this recognizer. !>
  // Delegated rules
<recognizer.grammar.delegatedRules:{ruleDescriptor|
  <headerReturnType(ruleDescriptor)> (*<ruleDescriptor.name>)(struct <name>_Ctx_struct *
ctx<if(ruleDescriptor.parameterScope)>, <endif><ruleDescriptor.parameterScope:parameterScope(>);};
separator="\n">
<endif>

  const char * (*getGrammarFileName());
  void (*reset) (struct <name>_Ctx_struct * ctx);
  void (*free) (struct <name>_Ctx_struct * ctx);
  <@members>
  <@end>
  <actions.(actionScope).context>
};

//
Function prototypes for the constructor functions that external translation units
// such as delegators and delegates may wish to call.
//
ANTLR3_API p<name> <name>New (<inputType(>) instream<recognizer.grammar.delegators:{g|,
p<g.recognizerName> <g.delegateName(>}>);

```

```

ANTLR3_API p<name> <name>NewSSD (<inputType()> instream,
pANTLR3_RECOGNIZER_SHARED_STATE state<recognizer.grammar.delegators:{ g|, p<g.recognizerName>
<g.delegateName()>}>);
<if(!recognizer.grammar.grammarIsRoot)>
extern pANTLR3_UINT8 <recognizer.grammar.composite.rootGrammar.recognizerName>TokenNames[];
<endif>

/** Symbolic definitions of all the tokens that the <grammarType()> will work with.
* \{
*
* Antlr will define EOF, but we can't use that as it is too common in
* in C header files and that would be confusing. There is no way to filter this out at the moment
* so we just undef it here for now. That isn't the value we get back from C recognizers
* anyway. We are looking
* for ANTLR3_TOKEN_EOF.
*/
#ifdef EOF
#undef EOF
#endif
#ifdef Tokens
#undef Tokens
#endif
<tokens:{it | #define <it.name> <it.type>}; separator="\n">
#ifdef EOF
#undef EOF
#define EOF ANTLR3_TOKEN_EOF
#endif

#ifdef TOKENSOURCE
#define TOKENSOURCE(lxr) lxr->pLexer->rec->state->tokSource
#endif

/* End of token definitions for <name>
* =====
*/
/** \} */

#ifdef __cplusplus
}
#endif

#endif

/* END - Note:Keep extra line feed to satisfy UNIX systems */

>>

```

```

inputType() ::= <<
<if(LEXER)>
pANTLR3_INPUT_STREAM
<endif>
<if(PARSER)>
pANTLR3_COMMON_TOKEN_STREAM
<endif>
<if(TREE_PARSER)>
pANTLR3_COMMON_TREE_NODE_STREAM
<endif>
>>

grammarType() ::= <<
<if(PARSER)>
parser
<endif>
<if(LEXER)>
lexer
<endif>
<if(TREE_PARSER)>
tree parser
<endif>
>>

mainName() ::= <<
<if(PARSER)>
<name>
<endif>
<if(LEXER)>
<name>
<endif>
<if(TREE_PARSER)>
<name>
<endif>
>>

headerReturnScope(ruleDescriptor) ::= "<returnScope(...)>"

headerReturnType(ruleDescriptor)
::= <<
<if(LEXER)>
<if(!ruleDescriptor.isSynPred)>
void
<else>
<returnType()>
<endif>
<else>
<returnType()>

```

```

<endif>
>>

// Produce the lexer output
//
lexer( grammar,
    name,
    tokens,
    scopes,
    rules,
    numRules,
    filterMode,
    superClass,
    labelType="pANTLR3_COMMON_TOKEN") ::= <<

<if(filterMode)>
/* Forward declare implementation function for ANTLR3_TOKEN_SOURCE interface when
* this is a filter mode lexer.
*/
static pANTLR3_COMMON_TOKEN <name>NextToken (pANTLR3_TOKEN_SOURCE toksource);

/* Override the normal MEMOIZE and HAVEALREADYPARSED macros as this is a filtering
* lexer. In filter mode, the memoizing and backtracking are gated at BACKTRACKING > 1 rather
* than just BACKTRACKING. In some cases this might generate code akin to:
* if (BACKTRACKING) if (BACKTRACKING > 1) memoize.
* However, I assume that the C compilers/optimizers are smart enough to work this one out
* these days -
Jim
*/
#undef MEMOIZE
#define MEMOIZE(ri,si) if (BACKTRACKING>1) { RECOGNIZER->memoize(RECOGNIZER, ri, si) }
#undef HAVEPARSEDRULE
#define HAVEPARSEDRULE(r) if (BACKTRACKING>1) { RECOGNIZER->alreadyParsedRule(RECOGNIZER,
r) }
<endif>

/* Forward declare the locally static matching functions we have generated and any predicate functions.
*/
<rules:{r | static ANTLR3_INLINE <headerReturnType(ruleDescriptor=r.ruleDescriptor)>
<if(!r.ruleDescriptor.isSynPred)>m<endif><r.ruleDescriptor.name> (p<name>
ctx<if(r.ruleDescriptor.parameterScope)>, <endif><r.ruleDescriptor.parameterScope:parameterScope(>>);};
separator="\n">
static void <name>Free(p<name> ctx);

/* =====
* Lexer matching rules end.
* =====
*/

```

```

<scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScope(it)><endif>}>

<actions.lexer.members>

static void
<name>Free (p<name> ctx)
{
<if(memoize)>
if (RULEMEMO
!= NULL)
{
RULEMEMO->free(RULEMEMO);
RULEMEMO = NULL;
}
<endif>
<if(grammar.directDelegates)>
// Free the lexers that we delegated to
// functions to. NULL the state so we only free it once.
//
<grammar.directDelegates:
    {g|ctx-><g:delegateName()>->pLexer->rec->state = NULL;
    ctx-><g:delegateName()>->free(ctx-><g:delegateName()>);}; separator="\n">
<endif>
    LEXER->free(LEXER);

    ANTLR3_FREE(ctx);
}

static void
<name>Reset (p<name> ctx)
{
    RECOGNIZER->reset(RECOGNIZER);
}

/** \brief Name of the grammar file that generated this code
*/
static const char fileName[] = "<fileName>";

/** \brief Return the name of the grammar file that generated this code.
*/
static const char * getGrammarFileName()
{
    return fileName;
}

<if(filterMode)>
    <filteringNextToken()>

```

```

<endif>

/** \brief Create a new lexer called <name>
 *
 * \param[in] instream Pointer to an initialized input stream
 * \return
 * - Success p<name> initialized
 * for the lex start
 * - Fail NULL
 */
ANTLR3_API p<name> <name>New
(<inputType> instream<grammar.delegators:{g|, p<g.recognizerName> <g.delegateName()>>})
{
    // See if we can create a new lexer with the standard constructor
    //
    return <name>NewSSD(instream, NULL<grammar.delegators:{g|, <g.delegateName()>>});
}

/** \brief Create a new lexer called <name>
 *
 * \param[in] instream Pointer to an initialized input stream
 * \param[state] state Previously created shared recognizer stat
 * \return
 * - Success p<name> initialized for the lex start
 * - Fail NULL
 */
ANTLR3_API p<name> <name>NewSSD
(pANTLR3_INPUT_STREAM instream, pANTLR3_RECOGNIZER_SHARED_STATE
state<grammar.delegators:{g|, p<g.recognizerName> <g.delegateName()>>})
{
    p<name> ctx; // Context structure we will build and return

    ctx = (p<name>) ANTLR3_CALLOC(1, sizeof(<name>));

    if (ctx == NULL)
    {
        // Failed to allocate memory for lexer context
        return NULL;
    }

    /*
    -----
    * Memory for basic structure is allocated, now to fill in
    * in base ANTLR3 structures. We initialize the function pointers
    * for the standard ANTLR3 lexer function set, but upon return
    * from here, the programmer may set the pointers to provide custom
    * implementations of each function.
    */

```

```

* We don't use the macros defined in <name>.h here so you can get a sense
* of what goes where.
*/

/* Create a base lexer, using the supplied input stream
*/
ctx->pLexer = antlr3LexerNewStream(ANTLR3_SIZE_HINT, instream, state);

/* Check that we allocated the memory correctly
*/
if (ctx->pLexer == NULL)
{
ANTLR3_FREE(ctx);
return NULL;
}
<if(memoize)>
<if(grammar.grammarIsRoot)>
// Create a LIST for recording rule memos.
//
ctx->pLexer->rec->ruleMemo = antlr3IntTrieNew(15); /* 16 bit depth is enough for 32768 rules! */
<endif>
<endif>

/* Install the implementation of our <name> interface
*/
<rules:{r | <if(!r.ruleDescriptor.isSynPred)>ctx->m<r.ruleDescriptor.name> =
m<r.ruleDescriptor.name>;<endif>}>; separator="\n">

/** When the nextToken() call is made to this lexer's pANTLR3_TOKEN_SOURCE
* it will call mTokens() in this generated code, and will pass it the ctx
* pointer of this lexer, not the context of the base lexer, so store that now.
*/
ctx->pLexer->ctx = ctx;

/**Install the token matching function
*/
ctx->pLexer->mTokens = (void (*)(void *))(mTokens);

ctx->getGrammarFileName = getGrammarFileName;
ctx->free = <name>Free;
ctx->reset = <name>Reset;

<if(grammar.directDelegates)>
// Initialize the lexers that we are going to delegate some
// functions to.
//
<grammar.directDelegates:
{g|ctx-><g.delegateName()> = <g.recognizerName>NewSSD(instream, ctx->pLexer->rec->state,

```



```

ctx<grammar.delegators:{g|,<g:delegateName()>}>;
separator="\n">
<endif>
<if(grammar.delegators)>
// Install the pointers back to lexers that will delegate us to perform certain functions
// for them.
//
<grammar.delegators:
    {g|ctx-><g:delegateName()> = <g:delegateName()>; separator="\n">
<endif>
<if(filterMode)>
/* We have filter mode turned on, so install the filtering nextToken function
*/
ctx->pLexer->rec->state->tokSource->nextToken = <name>NextToken;
<endif>
<actions.lexer.apifuncs>

/* Return the newly built lexer to the caller
*/
return ctx;
}
<if(cyclicDFAs)>

/* =====
* DFA tables for the lexer
*/
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
/* =====
* End of DFA tables for the lexer
*/
<endif>

/* =====
* Functions to match the lexer grammar defined tokens from
the input stream
*/

<rules; separator="\n\n">

/* =====
* Lexer matching rules end.
* =====
*/
<if(synpreds)>

/* =====
* Lexer syntactic predicates
*/

```

```

<synpreds:{p | <lexerSynpred(predname=p)>>
/* =====
* Lexer syntactic predicates end.
* =====
*/
<endif>

/* End of Lexer code
* =====
* =====
*/

>>

```

```

filteringNextToken() ::= <<
/** An override of the lexer's nextToken() method that backtracks over mTokens() looking
* for matches in lexer filterMode. No error can be generated upon error; just rewind, consume
* a token and then try again. BACKTRACKING
needs to be set as well.
* Make rule memoization happen only at levels above 1 as we start mTokens
* at BACKTRACKING==1.
*/
static pANTLR3_COMMON_TOKEN
<name>NextToken(pANTLR3_TOKEN_SOURCE toksource)
{
    pANTLR3_LEXER lexer;
    pANTLR3_RECOGNIZER_SHARED_STATE state;

    lexer = (pANTLR3_LEXER)(toksource->super);
    state = lexer->rec->state;

    /* Get rid of any previous token (token factory takes care of
    * any deallocation when this token is finally used up.
    */
    state ->token = NULL;
    state ->error = ANTLR3_FALSE; /* Start out without an exception */
    state ->failed = ANTLR3_FALSE;

    /* Record the start of the token in our input stream.
    */
    state->tokenStartCharIndex = lexer->input->istream->index(lexer->input->istream);
    state->tokenStartCharPositionInLine = lexer->input->getCharPositionInLine(lexer->input);
    state->tokenStartLine = lexer->input->getLine(lexer->input);
    state->text = NULL;

    /*

```

Now call the matching rules and see if we can generate a new token

```
*/
for (;;)
{
if (lexer->input->istream->_LA(lexer->input->istream, 1) == ANTLR3_CHARSTREAM_EOF)
{
/* Reached the end of the stream, nothing more to do.
*/
pANTLR3_COMMON_TOKEN teof = &(toksource->eofToken);

teof->setStartIndex (teof, lexer->getCharIndex(lexer));
teof->setStopIndex (teof, lexer->getCharIndex(lexer));
teof->setLine (teof, lexer->getLine(lexer));
return teof;
}

state->token = NULL;
state->error = ANTLR3_FALSE; /* Start out without an exception */

{
ANTLR3_MARKER m;

m = lexer->input->istream->mark(lexer->input->istream);
state->backtracking = 1; /* No exceptions */
state->failed = ANTLR3_FALSE;

/* Call the generated lexer, see if it can get a new token together.
*/
lexer->mTokens(lexer->ctx);
state->backtracking = 0;

<! mTokens backtracks with synpred at BACKTRACKING==2
and we set the synpredgate
to allow actions at level 1. !>

if (state->failed == ANTLR3_TRUE)
{
lexer->input->istream->rewind(lexer->input->istream, m);
lexer->input->istream->consume(lexer->input->istream); <! advance one char and try again !>
}
else
{
lexer->emit(lexer); /* Assemble the token and emit it to the stream */
return state->token;
}
}
}
}
```

>>

```
actionGate() ::= "BACKTRACKING==0"
```

```
filteringActionGate() ::= "BACKTRACKING==1"
```

```
/** How to generate a parser */
```

```
genericParser( grammar,  
  name,  
    scopes,  
    tokens,  
    tokenNames,  
    rules,  
    numRules,  
    bitsets,  
    inputStreamType,  
    superClass,  
    labelType,  
  members,  
  rewriteElementType, filterMode,  
    ASTLabelType="pANTLR3_BASE_TREE"  
  ) ::= <<
```

```
<if(grammar.grammarIsRoot)>
```

```
/** \brief Table of all token names in symbolic order, mainly used for
```

```
*
```

```
error reporting.
```

```
*/
```

```
pANTLR3_UINT8 <name>TokenNames[<length(tokenNames)>+4]
```

```
= {
```

```
  (pANTLR3_UINT8) "\<invalid>", /* String to print to indicate an invalid token */
```

```
  (pANTLR3_UINT8) "\<EOR>",
```

```
  (pANTLR3_UINT8) "\<DOWN>",
```

```
  (pANTLR3_UINT8) "\<UP>",
```

```
  <tokenNames:{it |(pANTLR3_UINT8) <it>; separator=",\n">
```

```
};
```

```
<endif>
```

```
<@members>
```

```
<@end>
```

```
<rules:{r |<ruleAttributeScopeFuncMacro(scope=r.ruleDescriptor.ruleScope)>>
```

```
<scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScopeFuncMacro(it)><endif>>
```

```
// Forward declare the locally static matching functions we have generated.
```

```
//
```

```
<rules:{r | static <headerReturnType(ruleDescriptor=r.ruleDescriptor)> <r.ruleDescriptor.name> (p<name>
```

```

ctx<if(r.ruleDescriptor.parameterScope)>, <endif><r.ruleDescriptor.parameterScope:parameterScope(>>);};
separator="\n">
static void <name>Free(p<name> ctx);
static void <name>Reset (p<name> ctx);

<if(!LEXER)>
<! generate rule/method definitions for
imported rules so they
appear to be defined in this recognizer. !>
<if(recognizer.grammar.delegatedRules)>
// Delegated rules
//
<recognizer.grammar.delegatedRules:{ruleDescriptor|static <headerReturnType(ruleDescriptor)>
<ruleDescriptor.name>(p<name> ctx<if(ruleDescriptor.parameterScope)>,
<endif><ruleDescriptor.parameterScope:parameterScope(>>);}; separator="\n">

<endif>
<endif>

/* For use in tree output where we are accumulating rule labels via label += ruleRef
* we need a function that knows how to free a return scope when the list is destroyed.
* We cannot just use ANTLR3_FREE because in debug tracking mode, this is a macro.
*/
static void ANTLR3_CDECL freeScope(void * scope)
{
    ANTLR3_FREE(scope);
}

/** \brief Name of the grammar file that generated this code
*/
static const char fileName[] = "<fileName>";

/** \brief Return the name of the grammar file that generated this code.
*/
static const char * getGrammarFileName()
{
    return fileName;
}

/** \brief Create a
new <name> parser and return a context for it.
*
* \param[in] instream Pointer to an input stream interface.
*
* \return Pointer to new parser context upon success.
*/
ANTLR3_API p<name>
<name>New (<inputStreamType> instream<grammar.delegators: {g|, p<g.recognizerName>
<g:delegateName(>>)>>)

```

```

{
// See if we can create a new parser with the standard constructor
//
return <name>NewSSD(instream, NULL<grammar.delegators:{g|, <g:delegateName()>>});
}

/** \brief Create a new <name> parser and return a context for it.
*
* \param[in] instream Pointer to an input stream interface.
*
* \return Pointer to new parser context upon success.
*/
ANTLR3_API p<name>
<name>NewSSD (<inputStreamType> instream, pANTLR3_RECOGNIZER_SHARED_STATE
state<grammar.delegators:{g|, p<g.recognizerName> <g:delegateName()>>})
{
    p<name> ctx;    /* Context structure we will build and return */

    ctx = (p<name>) ANTLR3_CALLOC(1, sizeof(<name>));

    if (ctx == NULL)
    {
        // Failed to allocate memory
        for parser context
        //
        return NULL;
    }

    /* -----
    * Memory for basic structure is allocated, now to fill in
    * the base ANTLR3 structures. We initialize the function pointers
    * for the standard ANTLR3 parser function set, but upon return
    * from here, the programmer may set the pointers to provide custom
    * implementations of each function.
    *
    * We don't use the macros defined in <name>.h here, in order that you can get a sense
    * of what goes where.
    */

<if(PARSER)>
    /* Create a base parser/recognizer, using the supplied token stream
    */
    ctx->pParser = antlr3ParserNewStream(ANTLR3_SIZE_HINT, instream->tstream, state);
<endif>
<if(TREE_PARSER)>
    /* Create a base Tree parser/recognizer, using the supplied tree node stream
    */
    ctx->pTreeParser = antlr3TreeParserNewStream(ANTLR3_SIZE_HINT, instream, state);

```

```

<endif>

/* Install the implementation
of our <name> interface
*/
<rules: {r | ctx-><r.ruleDescriptor.name> = <r.ruleDescriptor.name>;}; separator="\n">
<if(grammar.delegatedRules)>
// Install the delegated methods so that they appear to be a part of this
// parser
//
<grammar.delegatedRules: {ruleDescriptor | ctx-><ruleDescriptor.name> = <ruleDescriptor.name>;};
separator="\n">
<endif>

ctx->free = <name>Free;
ctx->reset = <name>Reset;
ctx->getGrammarFileName = getGrammarFileName;

/* Install the scope pushing methods.
*/
<rules: {r |<if(r.ruleDescriptor.ruleScope)>
<ruleAttributeScope(scope=r.ruleDescriptor.ruleScope)><\n>
<endif>}>
<recognizer.scopes: {it |<if(it.isDynamicGlobalScope)>
<globalAttributeScope(it)><\n>
<endif>}>
<@apifuncs>

<@end>
<if(grammar.directDelegates)>
// Initialize the parsers that we are going to delegate some
// functions to.
//
<grammar.directDelegates:
    {g|ctx-><g.delegateName()> = <g.recognizerName>NewSSD(instream, PSRSTATE,
ctx<grammar.delegators: {g|, <g.delegateName()>}>);}; separator="\n">
<endif>
<if(grammar.delegators)>
// Install the pointers back to parsers that will delegate us to perform certain functions
// for them.
//
<grammar.delegators:
    {g|ctx-><g.delegateName()> = <g.delegateName()>;}; separator="\n">
<endif>
<actions.parser.apifuncs>
<actions.treeparser.apifuncs>
<if(memoize)>
<if(grammar.grammarIsRoot)>

```

```

/* Create a LIST for recording rule memos.
*/
RULEMEMO = antlr3IntTrieNew(15); /* 16 bit depth is enough for 32768 rules! */<\n>
<endif>
<endif>
/* Install the token table
*/
PSRSTATE->tokenNames = <grammar.composite.rootGrammar.recognizerName>TokenNames;

<@debugStuff()>

/* Return the newly built parser to the caller
*/
return ctx;
}

static void
<name>Reset (p<name> ctx)
{
    RECOGNIZER->reset(RECOGNIZER);
}

/** Free the parser resources
*/
static void
<name>Free(p<name> ctx)
{
    /* Free any scope memory
    */
    <rules: {r
|<if(r.ruleDescriptor.ruleScope)><ruleAttributeScopeFree(scope=r.ruleDescriptor.ruleScope)><\n><endif> }>
    <recognizer.scopes: {it |<if(it.isDynamicGlobalScope)><globalAttributeScopeFree(it)><\n><endif> }>

    <@cleanup>
    <@end>
<if(grammar.directDelegates)>
    // Free the parsers that we delegated to
    // functions to.NULL the state so we only free it once.
    //
    <grammar.directDelegates:
        {g| ctx-><g:delegateName()>-><if(TREE_PARSER)>pTreeParser<else>pParser<endif>->rec->state = NULL;
        ctx-><g:delegateName()>->free(ctx-><g:delegateName()>);}; separator="\n">
    <endif>
<if(memoize)>
<if(grammar.grammarIsRoot)>
    if (RULEMEMO != NULL)
    {
        RULEMEMO->free(RULEMEMO);
    }
}

```



```

RULEMEMO = NULL;
}
<endif>
<endif>
// Free this parser
//
<if(TREE_PARSER)>
    ctx->pTreeParser->free(ctx->pTreeParser);<\n>
<else>
    ctx->pParser->free(ctx->pParser);<\n>
<endif>

    ANTLR3_FREE(ctx);

/* Everything is released, so we can return
*/
return;
}

/**
Return token names used by this <grammarType()>
*
* The returned pointer is used as an index into the token names table (using the token
* number as the index).
*
* \return Pointer to first char * in the table.
*/
static pANTLR3_UINT8 *getTokenNames()
{
    return <grammar.composite.rootGrammar.recognizerName>TokenNames;
}

<members>

/* Declare the bitsets
*/
<bitsets:{it | <bitsetDeclare(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
    words64=it.bits)>}>

<if(cyclicDFAs)>

/* =====
* DFA tables for the parser
*/
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
/* =====
* End of DFA tables for the parser

```

```

*/
<endif>

/* =====
* Parsing rules
*/
<rules; separator="\n\n">
<if(grammar.delegatedRules)>
// Delegated methods that appear to be a part of this
//
parser
//
<grammar.delegatedRules:{ruleDescriptor|
  <returnType()> <ruleDescriptor.name>(p<name> ctx<if(ruleDescriptor.parameterScope.attributes)>,
<endif><ruleDescriptor.parameterScope:parameterScope()>)
  \{
    <if(ruleDescriptor.hasReturnValue)>return <endif>ctx-><ruleDescriptor.grammar:delegateName()>-
  ><ruleDescriptor.name>(ctx-
  ><ruleDescriptor.grammar:delegateName()><if(ruleDescriptor.parameterScope.attributes)>,
  <endif><ruleDescriptor.parameterScope.attributes:{a|<a.name>}; separator=", ">);
  \}); separator="\n\n">

<endif>
/* End of parsing rules
* =====
*/

/* =====
* Syntactic predicates
*/
<synpreds:{p | <synpred(predname=p)>}>
/* End of syntactic predicates
* =====
*/

>>

parser( grammar,
  name,
  scopes,
  tokens,
  tokenNames,
  rules,
  numRules,

```

```

    bitsets,
    ASTLabelType,
    superClass="Parser",
    labelType="pANTLR3_COMMON_TOKEN",
    members={<actions.parser.members>}
  )
  ::= <<
<genericParser(inputStreamType="pANTLR3_COMMON_TOKEN_STREAM", rewriteElementType="TOKEN",
...)>
>>

```

```

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */

```

```

treeParser( grammar,
  name,
  scopes,
  tokens,
  tokenNames,
  globalAction,
  rules,
  numRules,
  bitsets,
  filterMode,
  labelType={<ASTLabelType>},
  ASTLabelType="pANTLR3_BASE_TREE",
  superClass="TreeParser",
  members={<actions.treeparser.members>}
) ::= <<
<genericParser(inputStreamType="pANTLR3_COMMON_TREE_NODE_STREAM",
rewriteElementType="NODE", ...)>
>>

```

```

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule,
they need to
 * be in a rule by themselves.
 */

```

```

synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
static void <ruleName>_fragment(p<name> ctx <ruleDescriptor.parameterScope:parameterScope(>))
{
  <ruleLabelDefs(>
  <ruleLabelInitializations(>

```

```

<if(trace)>
  ANTLR3_PRINTF("enter <ruleName> %d failed = %d, backtracking = %d\n",LT(1),failed,BACKTRACKING);
  <block>
  ANTLR3_PRINTF("exit <ruleName> %d, failed = %d, backtracking = %d\n",LT(1),failed,BACKTRACKING);

<else>
  <block>
<endif>
<ruleCleanUp()>
}
// $ANTLR end <ruleName>
>>

```

```

synpred(predname) ::= <<
static ANTLR3_BOOLEAN <predname>(p<name> ctx)
{
  ANTLR3_MARKER start;
  ANTLR3_BOOLEAN success;

  BACKTRACKING++;
  <@start()>
  start = MARK();
  <predname>_fragment(ctx); // can never throw exception
  success = !(FAILEDFLAG);
  REWIND(start);
  <@stop()>
  BACKTRACKING--;
  FAILEDFLAG = ANTLR3_FALSE;
  return success;
}<\n>
>>

```

```

lexerSynpred(predname)
::= <<
<synpred(predname)>
>>

```

```

ruleMemoization(rname) ::= <<
<if(memoize)>
if ( (BACKTRACKING>0) && (HAVEPARSEDRULE(<ruleDescriptor.index>)) )
{
  <if(ruleDescriptor.hasMultipleReturnValues)>
  <if(!ruleDescriptor.isSynPred)>
  retval.start = 0;<\n>
<endif>
<endif>
  <(ruleDescriptor.actions.after):execAfter()>
  <finalCode(finalBlock=finally)>

```

```

<if(!ruleDescriptor.isSynPred)>
  <scopeClean()><\n>
<endif>
  return <ruleReturnValue()>;
}
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
if (HASEXCEPTION())
{
  goto rule<ruleDescriptor.name>Ex;
}
<if(backtracking)>
if (HASFAILED())
{
  <scopeClean()>
  <@debugClean()>
  return <ruleReturnValue()>;
}
<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>
if (BACKTRACKING>0)
{
  FAILEDFLAG = <>true_value()>;
  <scopeClean()>
  return <ruleReturnValue()>;
}
<endif>
>>

/** How to generate
code for a rule. This includes any return type
* data aggregates required for multiple return values.
*/
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
/**
* $ANTLR start <ruleName>
* <fileName>:<description>
*/
static <returnType()>
<ruleName>(p<name> ctx<if(ruleDescriptor.parameterScope)>,
<endif><ruleDescriptor.parameterScope:parameterScope()>)

```

```

{
  <if(trace)>ANTLR3_PRINTF("enter <ruleName> %s failed=%d, backtracking=%d\n", LT(1),
BACKTRACKING);<endif>
  <ruleDeclarations()>
  <ruleDescriptor.actions.declarations>
  <ruleLabelDefs()>
  <ruleInitializations()>
  <ruleDescriptor.actions.init>
  <ruleMemoization(rname=ruleName)>
  <ruleLabelInitializations()>
  <@preamble()>
  {
    <block>
  }

  <ruleCleanUp()>
  <if(exceptions)>
    if (HASEXCEPTION())
    {
      <exceptions: {e|<catch(decl=e.decl,action=e.action)><\n>}>
    }
    else
    {
      <(ruleDescriptor.actions.after):execAfter()>
    }
  <else>
    <if(!emptyRule)>
      <if(actions.(actionScope).rulecatch)>
        <actions.(actionScope).rulecatch>
      <else>
        if (HASEXCEPTION())
        {
          PREPORTERROR();
          PRECOVER();
          <@setErrorReturnValue()>
        }
        <if(ruleDescriptor.actions.after)>
        else
        {
          <(ruleDescriptor.actions.after):execAfter()>
        }<\n>
        <endif>
      <endif>
    <endif>
  <endif>

  <if(trace)>ANTLR3_PRINTF("exit <ruleName> %d failed=%s backtracking=%s\n", LT(1), failed,
BACKTRACKING);<endif>

```

```

    <memoize(>
<if(finally)>
    <finalCode(finalBlock=finally)>
<endif>
    <scopeClean(>
    <@postamble(>
    return <ruleReturnValue(>;
}
/* $ANTLR end <ruleName> */
>>

finalCode(finalBlock) ::= <<
{
    <finalBlock>
}
>>

catch(decl,action) ::= <<
/* catch(decl,action)
*/
{
    <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType(>
    retval;<\n>
<else>
<ruleDescriptor.returnScope.attributes:{ a |
<a.type> <a.name>;
}>
<endif>
<if(memoize)>
ANTLR3_MARKER <ruleDescriptor.name>_StartIndex;
<endif>
>>

ruleInitializations() ::= <<
/* Initialize rule variables
*/
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.returnScope.attributes:{ a |
<if(a.initValue)>retval.<a.name> = <a.initValue>;<endif>
}>
>>

```

```

<else>
<ruleDescriptor.returnScope.attributes:{ a |
<if(a.initValue)><a.name> = <a.initValue>;<endif>
}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_startIndex = INDEX();<\n>
<endif>
<ruleDescriptor.useScopes:{ it |<scopeTop(it)> = <scopePush(it)>;}; separator="\n">
<ruleDescriptor.ruleScope:{ it |<scopeTop(it.name)> = <scopePush(it.name)>;}; separator="\n">
>>

```

```

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {it |<labelType> <it.label.text>;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {it |pANTLR3_VECTOR list_<it.label.text>;};
separator="\n"
>
<[ruleDescriptor.ruleLabels,ruleDescriptor.ruleListLabels]
: ruleLabelDef(); separator="\n"
>
>>

```

```

ruleLabelInitializations() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {it |<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {it |list_<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.ruleLabels,ruleDescriptor.ruleListLabels]
: ruleLabelInitVal(); separator="\n"
>
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!ruleDescriptor.isSynPred)>
retval.start = LT(1); retval.stop = retval.start;<\n>
<endif>
<endif>
>>

```

```

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it |<labelType> <it.label.text>;}; separator="\n"
>

```



```

<ruleDescriptor.charLabels:{it |ANTLR3_UINT32 <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {it |pANTLR3_INT_TRIE list_<it.label.text>;}; separator="\n"
>
>>

```

```

lexerRuleLabelInit() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it |<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {it |list_<it.label.text> = antlr3IntTrieNew(31);}; separator="\n"
>
>>

```

```

lexerRuleLabelFree() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it |<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {it |list_<it.label.text>->free(list_<it.label.text>);}; separator="\n"
>
>>

```

```

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
%>

```

```
memoize()
```

```

 ::= <<
 <if(memoize)>
 <if(backtracking)>
 if ( BACKTRACKING>0 ) { MEMOIZE(<ruleDescriptor.index>, <ruleDescriptor.name>_startIndex); }
 <endif>
 <endif>
 >>

```

```

 ruleCleanUp() ::= <<

 // This is where rules clean up and exit
 //
 goto rule<ruleDescriptor.name>Ex; /* Prevent compiler warnings */
 rule<ruleDescriptor.name>Ex: ;
 <if(ruleDescriptor.hasMultipleReturnValues)>
 <if(!TREE_PARSER)>
 <if(!ruleDescriptor.isSynPred)>
 retVal.stop = LT(-1);<\n>
 <endif>
 <endif>
 <endif>
 >>

```

```

 scopeClean() ::= <<
 <ruleDescriptor.useScopes:{ it |<scopePop(it)>}; separator="\n">
 <ruleDescriptor.ruleScope:{ it |<scopePop(it.name)>}; separator="\n">

 >>

 /** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules, which do not produce tokens.
 */
 lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
 // Comes from: <block.description>
 /** \brief Lexer rule generated by ANTLR3
 *
 * $ANTLR start <ruleName>
 *
 * Looks to match the characters the constitute the
 token <ruleName>
 * from the attached input stream.
 *
 *
 * \remark
 * - lexer->error == ANTLR3_TRUE if an exception was thrown.
 */
 static ANTLR3_INLINE
 void m<ruleName>(p<name> ctx<if(ruleDescriptor.parameterScope)>,
 <endif><ruleDescriptor.parameterScope:parameterScope()>)

```

```

{
  ANTLR3_UINT32 _type;
  <ruleDeclarations()>
  <ruleDescriptor.actions.declarations>
  <lexerRuleLabelDefs()>
  <if(trace)>System.out.println("enter <ruleName> "+(char)LA(1)+"
line="+GETLINE()+": "+GETCHARPOSITIONINLINE()+" failed="+failed+"
backtracking="+BACKTRACKING);<endif>

<if(nakedBlock)>
  <ruleMemoization(rname=ruleName)>
  <lexerRuleLabelInit()>
  <ruleDescriptor.actions.init>

  <block><\n>
<else>
  <ruleMemoization(rname=ruleName)>
  <lexerRuleLabelInit()>
  _type = <ruleName>;

  <ruleDescriptor.actions.init>

  <block>
  LEXSTATE->type = _type;
<endif>
  <if(trace)> ANTLR3_FPRINTF(stderr, "exit <ruleName> '%c' line=%d:%d failed = %d, backtracking
=%d\n",LA(1),GETLINE(),GETCHARPOSITIONINLINE(),failed,BACKTRACKING);<endif>
  <ruleCleanUp()>
  <lexerRuleLabelFree()>
  <(ruleDescriptor.actions.after):execAfter()>
  <memoize>
}
// $ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
/** This is the entry point in to the lexer from an object that
 * wants to generate the next token, such as a pCOMMON_TOKEN_STREAM
 */
static void
mTokens(p<name> ctx)
{
  <block><\n>

  goto ruleTokensEx; /* Prevent compiler warnings */

```

```

ruleTokensEx: ;
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

// <fileName>:<description>
{
  int alt<decisionNumber>=<maxAlt>;
  <decls>
  <@predecision()>
  <decision>
  <@postdecision()>
  <@prebranch()>
  switch (alt<decisionNumber>)
  {
  <alts:{ a | <altSwitchCase(i,a)>}>
  }
  <@postbranch()>
}
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
{
  // <fileName>:<description>

  ANTLR3_UINT32 alt<decisionNumber>;

  alt<decisionNumber>=<maxAlt>;

  <decls>
  <@predecision()>
  <decision>
  <@postdecision()>
  switch (alt<decisionNumber>)
  {
  <alts:{ a | <altSwitchCase(i,a)>}>
  }
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>

```

```

<@prealt(>
<alts>
<@postalt(>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt(>
<alts>
<@postalt(>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description)
n)
::= <<
// <fileName>:<description>
{
  int cnt<decisionNumber>=0;
  <decls>
  <@preloop(>

  for (;)
  {
    int alt<decisionNumber>=<maxAlt>;
    <@predecision(>
    <decision>
    <@postdecision(>
    switch (alt<decisionNumber>)
    {
      <alts:{ a | <altSwitchCase(i,a)>}>
      default:

    if ( cnt<decisionNumber> >= 1 )
    {
      goto loop<decisionNumber>;
    }
    <ruleBacktrackFailure(>
    <earlyExitEx(>
    <@earlyExitException(>
    goto rule<ruleDescriptor.name>Ex;
  }
  cnt<decisionNumber>++;
  }
  loop<decisionNumber>; /* Jump to here if this rule does not match */
  <@postloop(>

```

```

}
>>

earlyExitEx() ::= <<
/* mismatchedSetEx()
*/
CONSTRUCTEX();
EXCEPTION->type = ANTLR3_EARLY_EXIT_EXCEPTION;
EXCEPTION->name = (void *)ANTLR3_EARLY_EXIT_NAME;
<\n>
>>
positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description)
::= <<

// <fileName>:<description>
<decls>

<@preloop()>
for (;;)
{
    int alt<decisionNumber>=<maxAlt>;
    <@predecision()>
    <decision>
    <@postdecision()>
    switch (alt<decisionNumber>)
    {
    <alts:{ a | <altSwitchCase(i,a)> }>
    default:
        goto loop<decisionNumber>; /* break out of the loop */
        break;
    }
}
loop<decisionNumber>; /* Jump out to here if this rule does not match */
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by antlr before code generation
* so we can just use the normal block template
*/
optionalBlock ::= block

optionalBlockSingleAlt ::= block

```

```

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum,alt) ::= <<
case <altNum>:
  <@prealt()>
  <alt>
  break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
  <@declarations()>
  <@initializations()>
  <elements:element()>
  <rew>
  <@cleanup()>
}
>>

// E L E M E N T S
/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

/** Dump the elements one per line */
element(e) ::= <<
<@prematch()>
<e.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<if(label)><label> = (<labelType>)<endif> MATCHT(<token>,
&FOLLOW_<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

listLabel(label,elem) ::= <<
if (list_<label> == NULL)
{
    list_<label>=ctx->vectors->newVector(ctx->vectors);
}
list_<label>->add(list_<label>,
<elem>, NULL);
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = LA(1);<\n>
<endif>
MATCHC(<char>);
<checkRuleBacktrackFailure()>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = LA(1);<\n>
<endif>
MATCHRANGE(<a>, <b>);
<checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,terminalOptions,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= LA(1);<\n>
<else>
<label>=(<labelType>)LT(1);<\n>
<endif>
<endif>
if ( <s> )
{
    CONSUME();
    <postmatchCode>
<if(!LEXER)>
    PERRORRECOVERY=ANTLR3_FALSE;
<endif>
    <if(backtracking)>FAILEDFLAG=ANTLR3_FALSE;<\n><endif>
}
else
{

```



```

    <ruleBacktrackFailure()>
    <mismatchedSetEx()>
    <@mismatchedSetException()>
<if(LEXER)>
    LRECOVER();
<else>
    RECOVERFROMMISMATCHEDSET(&FOLLOW_set_in_<ruleName><elementIndex>);
<endif>

    goto rule<ruleDescriptor.name>Ex;
}<\n>
>>

mismatchedSetEx() ::= <<
CONSTRUCTEX();
EXCEPTION->type      = ANTLR3_MISMATCHED_SET_EXCEPTION;
EXCEPTION->name      = (void *)ANTLR3_MISMATCHED_SET_NAME;
<if(PARSER)>
EXCEPTION->expectingSet = &FOLLOW_set_in_<ruleName><elementIndex>;
<endif>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label,elementIndex) ::= <<
<if(label)>
<label>Start = GETCHARINDEX();
MATCHS(<string>);
<checkRuleBacktrackFailure()>
<label> = LEXSTATE->tokFactory->newToken(LEXSTATE->tokFactory);
<label>->setType(<label>, ANTLR3_TOKEN_INVALID);
<label>->setStartIndex(<label>, <label>Start);
<label>->setStopIndex(<label>, GETCHARINDEX()-1);
<label>->input = INPUT->tstream->istream;
<else>
MATCHS(<string>);
<checkRuleBacktrackFailure()><\n>
<endif>
>>

wildcard(token,label,elementIndex,terminalOptions) ::= <<
<if(label)>

```

```

<label>=(<labelType>)LT(1);<\n>
<endif>
MATCHANYT();
<checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(token,label,elementIndex,terminalOptions)
::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = LA(1);<\n>
<endif>
MATCHANY();
<checkRuleBacktrackFailure()>
>>

```

```

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
FOLLOWPUSH(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)>ctx-><scope:delegateName()>-><endif><rule.name>(ctx<if(scope)>-
-><scope:delegateName()><endif><if(args)>,
<args; separator=","><endif>);<\n>
FOLLOWPOP();
<checkRuleBacktrackFailure()>
>>

```

```

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** A lexer rule reference

```

```

* The 'rule' argument was the target rule name, but now
* is type Rule, whose toString is same: the rule name.
* Now though you can access full rule descriptor stuff.
*/
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
/* <description> */
<if(label)>
{
  ANTLR3_MARKER <label>Start<elementIndex> = GETCHARINDEX();
  <if(scope)>ctx-><scope.delegateName()-><endif>m<rule.name>(ctx<if(scope)>-
><scope.delegateName()-><endif> <if(args)>, <endif><args; separator=", ">;
  <checkRuleBacktrackFailure()->
  <label> = LEXSTATE->tokFactory->newToken(LEXSTATE->tokFactory);
  <label>->setType(<label>, ANTLR3_TOKEN_INVALID);
  <label>->setStartIndex(<label>, <label>Start<elementIndex>);
  <label>->setStopIndex(<label>, GETCHARINDEX()-1);

  <label>->input = INPUT;
}
<else>
<if(scope)>ctx-><scope.delegateName()-><endif>m<rule.name>(ctx<if(scope)>-
><scope.delegateName()-><endif> <if(args)>, <endif><args; separator=", ">;
<checkRuleBacktrackFailure()->
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
{
  ANTLR3_UINT32 <label>Start<elementIndex>;
  <labelType> <label>;
  <label>Start<elementIndex> = GETCHARINDEX();
  MATCHC(ANTLR3_CHARSTREAM_EOF);
  <checkRuleBacktrackFailure()->
  <label> = LEXSTATE->tokFactory->newToken(LEXSTATE->tokFactory);
  <label>->setType(<label>, ANTLR3_TOKEN_EOF);
  <label>->setStartIndex(<label>, <label>Start<elementIndex>);
  <label>->setStopIndex(<label>, GETCHARINDEX()-1);
  <label>->input = INPUT->tstream->istream;
}
<else>

```

```

MATCHC(ANTLR3_CHARSTREAM_EOF);
<checkRuleBacktrackFailure()>
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> |<= <opPrec>"
recRuleSetResultAction() ::= "root_0=$<ruleName>_primary.tree;"
recRuleSetReturnAction(src,name)  ::= "$<name>=$<src>.<name>;"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList, enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( LA(1)==ANTLR3_TOKEN_DOWN ) {
    MATCHT(ANTLR3_TOKEN_DOWN, NULL);
    <checkRuleBacktrackFailure()>
    <children:element()>
    MATCHT(ANTLR3_TOKEN_UP, NULL);
    <checkRuleBacktrackFailure()>
}
<else>
MATCHT(ANTLR3_TOKEN_DOWN, NULL);
<checkRuleBacktrackFailure()>
<children:element()>
MATCHT(ANTLR3_TOKEN_UP, NULL);
<checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate
    (even when it is
    * also hoisted into a prediction expression).
    */
validateSemanticPredicate(pred,description) ::= <<
if ( !(<evalPredicate(...)> ) )
{
    <ruleBacktrackFailure()>
    <newFPE(...)>
}
>>

newFPE() ::= <<
CONSTRUCTEX();
EXCEPTION->type = ANTLR3_FAILED_PREDICATE_EXCEPTION;

```

```

EXCEPTION->message    = (void *)"<description>";
EXCEPTION->ruleName  = (void *)"<ruleName>";
<\n>
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<

{
  int LA<decisionNumber>_<stateNumber> = LA(<k>);
  <edges; separator="\nelse ">
  else
  {
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>

    <newNVException()>
    goto rule<ruleDescriptor.name>Ex;

<endif>
  }
}
>>

newNVException() ::= <<
CONSTRUCTEX();
EXCEPTION->type      = ANTLR3_NO_VIABLE_ALT_EXCEPTION;
EXCEPTION->message   = (void *)"<description>";
EXCEPTION->decisionNum
  = <decisionNumber>;
EXCEPTION->state     = <stateNumber>;
<@noViableAltException()>
<\n>
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
  int LA<decisionNumber>_<stateNumber> = LA(<k>);
  <edges; separator="\nelse ">
}

```

```

>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */

dfaLoopbackStateDecls() ::= <<
ANTLR3_UINT32 LA<decisionNumber>_<stateNumber>;
>>

dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)
::= <<
{
/* dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)
 */
int LA<decisionNumber>_<stateNumber> = LA(<k>);
<edges; separator="\nelse "><<\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
{
alt<decisionNumber>=<eotPredictsAlt>;
}<\n>
<endif>
<endif>
}
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>;"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ( <if(predicates)><predicates> && <endif><labelExpr> )
{
<targetState>
}
>>

// F i x e d D F A (switch case)

```

```

/** A DFA state where a SWITCH may be generated.
    The code generator
    * decides if this is possible: CodeGenerator.canGenerateSwitch().
    */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( LA(<k> )
{
<edges; separator="\n">

default:
<if(eotPredictsAlt)>
    alt<decisionNumber>=<eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>
    <newNVException()>
    goto rule<ruleDescriptor.name>Ex;<\n>
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( LA(<k> )
{
    <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( LA(<k> )
{
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
    alt<decisionNumber>=<eotPredictsAlt>;
    break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{it |case <it>:}; separator="\n">
{
    <targetState>
}
    break;
>>

// C y c l i c D F A

```

```

/** The code to initiate execution of
    a cyclic DFA; this is used
    * in the rule to predict an alt just like the fixed DFA case.
    * The <name> attribute is inherited via the parser, lexer, ...
    */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = cdfa<decisionNumber>.predict(ctx, RECOGNIZER, ISTREAM,
&cdfa<decisionNumber>);
<checkRuleBacktrackFailure()>
>>

/* Dump DFA tables as static initialized arrays of shorts(16 bits)/characters(8 bits)
* which are then used to statically initialize the dfa structure, which means that there
* is no runtime initialization whatsoever, other than anything the C compiler might
* need to generate. In general the C compiler will lay out memory such that there is no
* runtime code required.
*/
cyclicDFA(dfa) ::= <<
/** Static dfa state tables for Cyclic dfa:
* <dfa.description>
*/
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_eot[<dfa.numberofStates>] =
{
<dfa.eot; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_eof[<dfa.numberofStates>]
=
{
<dfa.eof; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_min[<dfa.numberofStates>] =
{
<dfa.min; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_max[<dfa.numberofStates>] =
{
<dfa.max; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_accept[<dfa.numberofStates>] =
{
<dfa.accept; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_special[<dfa.numberofStates>] =
{
<dfa.special; wrap="\n", separator=", ", null="-1">
};

```



```

/** Used when there is no transition table entry for a particular state */
#define dfa<dfa.decisionNumber>_T_empty  NULL

<dfa.edgeTransitionClassMap.keys:{ table |
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_T<i0>[] =
{
<table; separator=" ", wrap="\n", null="-1">
\};}; null = "">

/* Transition tables are
a table of sub tables, with some tables
* reused for efficiency.
*/
static const ANTLR3_INT32 * const dfa<dfa.decisionNumber>_transitions[] =
{
<dfa.transitionEdgeTables:{ xref|dfa<dfa.decisionNumber>_T<xref>}; separator=" ", wrap="\n", null="_empty">
};

<if(dfa.specialStateSTs)>
static ANTLR3_INT32 dfa<dfa.decisionNumber>_sst(p<name> ctx, pANTLR3_BASE_RECOGNIZER recognizer,
pANTLR3_INT_STREAM is, pANTLR3_CYCLIC_DFA dfa, ANTLR3_INT32 s)
{
ANTLR3_INT32  _s;

_s  = s;
switch (s)
{
<dfa.specialStateSTs:{ state |
case <i0>:

<state>}; separator="\n">
}
<if(backtracking)>
if (BACKTRACKING > 0)
{
FAILEDFLAG = ANTLR3_TRUE;
return -1;
}
<endif>

CONSTRUCTEX();
EXCEPTION->type      = ANTLR3_NO_VIABLE_ALT_EXCEPTION;
EXCEPTION->message   = (void *)"<dfa.description>";
EXCEPTION->decisionNum = <dfa.decisionNumber>;
EXCEPTION->state     = _s;
<@noViableAltException()>
return -1;
}

```

```

<endif>

<@errorMethod()>

/*
Declare tracking structure for Cyclic DFA <dfa.decisionNumber>
*/
static
ANTLR3_CYCLIC_DFA cdfa<dfa.decisionNumber>
= {
    <dfa.decisionNumber>, /* Decision number of this dfa */
    /* Which decision this represents: */
    (const pANTLR3_UCHAR)"<dfa.description>",
<if(dfa.specialStateSTs)>
    (CDFA_SPECIAL_FUNC) dfa<dfa.decisionNumber>_sst,
<else>
    (CDFA_SPECIAL_FUNC) antlr3dfaspecialStateTransition, /* Default special state transition function */
<endif>

    antlr3dfaspecialTransition, /* DFA specialTransition is currently just a default function in the runtime */
    antlr3dfapredict, /* DFA simulator function is in the runtime */
    dfa<dfa.decisionNumber>_eot, /* EOT table */
    dfa<dfa.decisionNumber>_eof, /* EOF table */
    dfa<dfa.decisionNumber>_min, /* Minimum tokens for each state */
    dfa<dfa.decisionNumber>_max, /* Maximum tokens for each state */
    dfa<dfa.decisionNumber>_accept, /* Accept
table
    dfa<dfa.decisionNumber>_special, /* Special transition states
    dfa<dfa.decisionNumber>_transitions /* Table of transition tables

};
/* End of Cyclic DFA <dfa.decisionNumber>
* -----
*/
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
* state.
*/
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
{
    ANTLR3_UINT32 LA<decisionNumber>_<stateNumber>;<\n>
    ANTLR3_MARKER index<decisionNumber>_<stateNumber>;<\n>

    LA<decisionNumber>_<stateNumber> = LA(1);<\n>
    <if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
    index<decisionNumber>_<stateNumber> = INDEX();<\n>
    REWINDLAST();<\n>
}

```

```

<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
SEEK(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if ( s>=0 )
{
return s;
}
}
break;
>>

/** Just like
a fixed DFA edge, test the lookahead and indicate what
* state to jump to next if successful.
*/
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ( <if(predicates)><predicates> && <endif><(<labelExpr>) )
{
s = <targetStateNumber>;
}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
* always jump to the target.
*/
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "( (<left> && (<right>) )"

orPredicates(operands) ::= "<operands:{o|(<o>)}; separator=\"||\">"

notPredicate(pred) ::= "!( <evalPredicate(pred,{ })> )"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>(ctx)"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable

```

```

* somewhere. Must ask for the lookahead
directly.
*/
isolatedLookaheadTest(atom,k,atomAsInt) ::= "LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
((LA<decisionNumber>_<stateNumber> >= <lower>) && (LA<decisionNumber>_<stateNumber> \<= <upper>))
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(LA(<k>) >= <lower>) &&
(LA(<k>) \<= <upper>))"

setTest(ranges) ::= "<ranges; separator=\\ \" \| \>"

// A T T R I B U T E S

makeScopeSet() ::= <<
/* makeScopeSet()
*/
/** Definition of the <scope.name> scope variable tracking
* structure. An instance of this structure is created by calling
* <name>_<scope.name>Push().
*/
typedef struct <scopeStruct(sname=scope.name,...)>_struct
{
/** Function that the user may provide to be called when the
* scope is destroyed (so you can free pANTLR3_HASH_TABLES and so on)
*
* \param PPointer to an instance of this typedef/struct
*/
void (ANTLR3_CDECL *free) (struct <scopeStruct(sname=scope.name,...)>_struct
* frame);

/* =====
* Programmer defined variables...
*/
<scope.attributes:{it |<it.decl>;}; separator="\n">

/* End of programmer defined variables
* =====
*/
}
<scopeStruct(sname=scope.name,...)>, * <scopeType(sname=scope.name,...)>;

>>

globalAttributeScopeDecl(scope) ::= <<
<if(scope.attributes)>

```

```

/* globalAttributeScopeDecl(scope)
*/
<makeScopeSet(...)>
<endif>
>>

ruleAttributeScopeDecl(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeDecl(scope)
*/
<makeScopeSet(...)>
<endif>
>>

globalAttributeScopeFuncDecl(scope) ::=
<<
/* globalAttributeScopeFuncDecl(scope)
*/
<if(scope.attributes)>
/* -----
* Function declaration for creating a <name>_<scope.name> scope set
*/
static <scopeType(sname=scope.name,...)>
    <scopePushName(sname=scope.name,...)>(p<name> ctx);
static void ANTLR3_CDECL <scope.name>Free(<scopeType(sname=scope.name)> scope);
/* ----- */

<endif>
>>

globalAttributeScopeFuncMacro(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScopeFuncMacro(scope)
*/
/** Function for popping the top value from a <scopeStack(sname=scope.name)>
*/
void
<scopePopName(sname=scope.name,...)>(p<name> ctx)
{
    // First see if the user defined a function they want to be called when a
    // scope is popped/freed.
    //
    // If the user supplied the scope entries with a free function, then call it first
    //
    if (SCOPE_TOP(<scope.name>)->free != NULL)
    {
        SCOPE_TOP(<scope.name>)->free(SCOPE_TOP(<scope.name>));
    }
}

```

```

// Now we decrement the scope's upper limit bound. We do not actually pop the scope as
// we want to reuse scope entries if we do continuous push and pops. Most scopes don't
// next too far so we don't want to keep freeing and allocating them
//
ctx-><scopeStack(sname=scope.name,...)>_limit--;
SCOPE_TOP(<scope.name>) = (<scopeType(sname=scope.name)>)(ctx-><scopeStack(sname=scope.name,...)>-
>get(ctx-><scopeStack(sname=scope.name,...)>, ctx-><scopeStack(sname=scope.name,...)>_limit - 1));
}
<endif>
>>

```

```

ruleAttributeScopeFuncDecl(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeFuncDecl(scope)
*/
/* -----
* Function declarations for creating a <name>_<scope.name> scope set
*/
static <scopeType(sname=scope.name,...)> <scopePushName(sname=scope.name,...)>(p<name> ctx);
static void ANTLR3_CDECL <scope.name>Free(<scopeType(sname=scope.name)> scope);
/* ----- */

<endif>
>>

```

```

ruleAttributeScopeFuncMacro(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeFuncMacro(scope)
*/
/** Function
for popping the top value from a <scopeStack(sname=scope.name,...)>
*/
void
<scopePopName(sname=scope.name,...)>(p<name> ctx)
{
// First see if the user defined a function they want to be called when a
// scope is popped/freed.
//
// If the user supplied the scope entries with a free function,then call it first
//
if (SCOPE_TOP(<scope.name>)->free != NULL)
{
SCOPE_TOP(<scope.name>)->free(SCOPE_TOP(<scope.name>));
}
}

```

```

// Now we decrement the scope's upper limit bound. We do not actually pop the scope as
// we want to reuse scope entries if we do continuous push and pops. Most scopes don't

```

```

// next too far so we don't want to keep freeing and allocating them
//
ctx-><scopeStack(sname=scope.name,...)>_limit--;
SCOPE_TOP(<scope.name>) = (<scopeType(sname=scope.name)>)(ctx-><scopeStack(sname=scope.name,...)>-
>get(ctx-><scopeStack(sname=scope.name,...)>, ctx-><scopeStack(sname=scope.name,...)>_limit - 1));
}

<endif>
>>

globalAttributeScopeDef(scope)
::=
<<
/* globalAttributeScopeDef(scope)
*/
<if(scope.attributes)>
/** Pointer to the <scope.name> stack for use by <scopePushName(sname=scope.name)>()
* and <scopePopName(sname=scope.name,...)>()
*/
pANTLR3_STACK <scopeStack(sname=scope.name)>;
ANTLR3_UINT32 <scopeStack(sname=scope.name)>_limit;
/** Pointer to the top of the stack for the global scope <scopeStack(sname=scope.name)>
*/
<scopeType(sname=scope.name,...)> (*<scopePushName(sname=scope.name,...)>)(struct <name>_Ctx_struct *
ctx);
<scopeType(sname=scope.name,...)> <scopeTopDecl(sname=scope.name,...)>;

<endif>
>>

ruleAttributeScopeDef(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeDef(scope)
*/
/** Pointer to the <scope.name> stack for use by <scopePushName(sname=scope.name)>()
* and <scopePopName(sname=scope.name,...)>()
*/
pANTLR3_STACK <scopeStack(sname=scope.name,...)>;
ANTLR3_UINT32 <scopeStack(sname=scope.name,...)>_limit;
<scopeType(sname=scope.name,...)> (*<scopePushName(sname=scope.name,...)>)(struct
<name>_Ctx_struct * ctx);
<scopeType(sname=scope.name,...)> <scopeTopDecl(sname=scope.name,...)>;

<endif>
>>

globalAttributeScopeFuncs(scope) ::= <<
<if(scope.attributes)>

```

```

/* globalAttributeScopeFuncs(scope)
*/
<attributeFuncs(scope)>
<endif>
>>

ruleAttributeScopeFuncs(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeFuncs(scope)
*/
<attributeFuncs(scope)>
<endif>
>>

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScope(scope)
*/
ctx-><scopePushName(sname=scope.name,...)> = <scopePushName(sname=scope.name,...)>;
ctx-><scopeStack(sname=scope.name,...)> = antlr3StackNew(0);
ctx-><scopeStack(sname=scope.name,...)>_limit = 0;
<scopeTop(sname=scope.name,...)> = NULL;
<endif>
>>

ruleAttributeScope(scope) ::=
<<
<if(scope.attributes)>
/* ruleAttributeScope(scope)
*/
ctx-><scopePushName(sname=scope.name,...)> = <scopePushName(sname=scope.name,...)>;
ctx-><scopeStack(sname=scope.name,...)> = antlr3StackNew(0);
ctx-><scopeStack(sname=scope.name,...)>_limit
= 0;
<scopeTop(sname=scope.name,...)> = NULL;
<endif>
>>
globalAttributeScopeFree(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScope(scope)
*/
ctx-><scopeStack(sname=scope.name,...)>->free(ctx-><scopeStack(sname=scope.name,...)>);
<endif>
>>

ruleAttributeScopeFree(scope) ::=
<<
<if(scope.attributes)>

```



```

/* ruleAttributeScope(scope)
*/
ctx-><scopeStack(sname=scope.name,...)>->free(ctx-><scopeStack(sname=scope.name,...)>);
<endif>
>>

scopeTopDecl(sname) ::= <<
p<name>_<sname>Top
>>

scopeTop(sname) ::= <<
ctx-><scopeTopDecl(sname=sname,...)>
>>

scopePop(sname) ::= <<
<scopePopName(sname=sname,...)>(ctx);
>>

scopePush(sname) ::= <<
p<name>_<sname>Push(ctx)
>>

scopePopName(sname) ::= <<
p<name>_<sname>Pop
>>

scopePushName(sname) ::= <<
p<name>_<sname>Push
>>

scopeType(sname) ::= <<
p<name>_<sname>_SCOPE
>>

scopeStruct(sname) ::= <<
<name>_<sname>_SCOPE
>>

scopeStack(sname) ::= <<
p<name>_<sname>Stack
>>

attributeFuncs(scope)
::= <<
<if(scope.attributes)>
/* attributeFuncs(scope)
*/

```

```

static void ANTLR3_CDECL <scope.name>Free(<scopeType(sname=scope.name)> scope)
{
    ANTLR3_FREE(scope);
}

/** \brief Allocate initial memory for a <name> <scope.name> scope variable stack entry and
 *     add it to the top of the stack.
 *
 * \remark
 * By default the structure is freed with ANTLR_FREE(), but you can use the
 * the \@init action to install a pointer to a custom free() routine by
 * adding the code:
 * \code
 * <scopeTop(sname=scope.name)>->free = myroutine;
 * \endcode
 *
 * With lots of comments of course! The routine should be declared in
 * \@members { } as:
 * \code
 * void ANTLR3_CDECL myfunc( <scopeType(sname=scope.name)> ptr).
 * \endcode
 *
 * It should perform any custom freeing stuff that you need (call ANTLR_FREE3, not free())
 * NB: It should not free the pointer it is given, which is the scope stack entry itself
 * and will be freed by the function that calls your custom
 * free routine.
 *
 */
static <scopeType(sname=scope.name)>
<scopePushName(sname=scope.name)>(p<name> ctx)
{
    /* Pointer used to create a new set of attributes
     */
    <scopeType(sname=scope.name)>    newAttributes;

    /* Allocate the memory for a new structure if we need one.
     */
    if (ctx-><scopeStack(sname=scope.name)>->size(ctx-><scopeStack(sname=scope.name)>) > ctx-
    ><scopeStack(sname=scope.name)>_limit)
    {
        // The current limit value was less than the number of scopes available on the stack so
        // we can just reuse one. Our limit tracks the stack count, so the index of the entry we want
        // is one less than that, or conveniently, the current value of limit.
        //
        newAttributes = (<scopeType(sname=scope.name)>)ctx-><scopeStack(sname=scope.name)>->get(ctx-
    ><scopeStack(sname=scope.name)>, ctx-><scopeStack(sname=scope.name)>_limit);
    }
    else

```

```

{
    // Need a new allocation
    //
    newAttributes = (<scopeType(sname=scope.name)>)
ANTLR3_MALLOC(sizeof(<scopeStruct(sname=scope.name)>));
    if (newAttributes != NULL)
    {
        /* Standard ANTLR3 library implementation
        */
        ctx-><scopeStack(sname=scope.name)>->push(ctx-><scopeStack(sname=scope.name)>, newAttributes,
(void (*)(void *))<scope.name>Free);
    }
}

// Blank out any previous free pointer, the user might or might install a new one.
//
newAttributes->free = NULL;

// Indicate the position in the available stack that the current level is at
//
ctx-><scopeStack(sname=scope.name)>_limit++;

/* Return value is the pointer to the new entry, which may be used locally
* without de-referencing via the context.
*/
return newAttributes;
}<n>

<endif>
>>
returnStructName(r) ::= "<r.name>_return"

returnType() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>_<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
<else>
ANTLR3_BOOLEAN
<endif>
%>

```

```

/**
Generate the C type associated with a single or multiple return
* value(s).
*/
ruleLabelType(referencedRule) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.grammar.recognizerName>_<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
%>

delegateName(d) ::= <<
<if(d.label)><d.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "0".
*/
initValue(typeName) ::= <<
= <cTypeInitMap.(typeName)>
>>

/** Define a rule label */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text>;
#undef RETURN_TYPE_<label.label.text>
#define RETURN_TYPE_<label.label.text> <ruleLabelType(referencedRule=label.referencedRule)><\n>
>>
/**
Rule label default value */
ruleLabelInitVal(label) ::= <<
>>

ASTLabelType() ::=
"<if(recognizer.ASTLabelType)><recognizer.ASTLabelType><else>pANTLR3_BASE_TREE<endif>"

/** Define a return struct for a rule if the code needs to access its
* start/stop tokens, tree stuff, attributes, ... Leave a hole for
* subgroups to stick in members.
*/
returnScope(scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>

```

```

typedef struct <ruleDescriptor.grammar.recognizerName>_<ruleDescriptor:returnStructName()>_struct
{
<if(!TREE_PARSER)>
  /** Generic return elements for ANTLR3 rules that are not in tree parsers or returning trees
  */
  pANTLR3_COMMON_TOKEN  start;
  pANTLR3_COMMON_TOKEN  stop;
<else>
  <recognizer.ASTLabelType>  start;
  <recognizer.ASTLabelType>  stop;
<endif>
  <@ruleReturnMembers()>
  <ruleDescriptor.returnScope.attributes:{it |<it.type> <it.name>;}; separator="\n">
}
  <ruleDescriptor.grammar.recognizerName>_<ruleDescriptor:returnStructName()>;<\n><\n>
<endif>
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{it |<it.decl>;}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name>=<expr>";

/** Note that the scopeAttributeRef does not have access to the
 * grammar name directly
 */
scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
  ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get( ctx->SCOPE_STACK(<scope>), ctx->SCOPE_STACK(<scope>)->size(ctx->SCOPE_STACK(<scope>)) - <negIndex> - 1 ))-><attr.name>
<else>
<if(index)>
  ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get(ctx->SCOPE_STACK(<scope>),
(ANTLR3_UINT32)<index> ) ))-><attr.name>
<else>
  (SCOPE_TOP(<scope>))-><attr.name>
<endif>
<endif>
%>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
<if(negIndex)>
  ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get( ctx->SCOPE_STACK(<scope>),
ctx->SCOPE_STACK(<scope>)->size(ctx->SCOPE_STACK(<scope>)) - <negIndex> - 1 ))-><attr.name> =
<expr>;

```

```

<else>
<if(index)>
((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get(ctx->SCOPE_STACK(<scope>),
(ANTLR3_UINT32)<index> ) )-><attr.name> = <expr>;
<else>
(SCOPE_TOP(<scope>))-><attr.name>=<expr>;
<endif>
<endif>
%>

```

```

/** $x is either global scope or x is rule with dynamic scope; refers
* to stack itself not top of stack. This is useful for predicates
* like {$function.size()>0 && $function::name.equals("foo")}?
*/
isolatedDynamicScopeRef(scope) ::= "ctx->SCOPE_STACK(<scope>)"

```

```

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<scope>.<attr.name>
<else>
<scope>
<endif>
>>

```

```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr)
::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>=<expr>;
<else>
<attr.name>=<expr>;
<endif>
>>

```

```

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

```

```

// not sure the next are the right approach
//
tokenLabelPropertyRef_text(scope,attr) ::= "<scope>->getText(<scope>)"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>->getType(<scope>)"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>->getLine(<scope>)"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>->getCharPositionInLine(<scope>)"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>->getChannel(<scope>)"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>->getTokenIndex(<scope>)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>->tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>->getText(<scope>->toInt32(<scope>->getText(<scope>)))"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr)
 ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>.tree"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(STRSTREAM->toStringSS(STRSTREAM, <scope>.start, <scope>.start))
<else>
(STRSTREAM->toStringTT(STRSTREAM, <scope>.start, <scope>.stop))
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>.st"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "<scope>->getType(<scope>)"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "<scope>->getLine(<scope>)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "<scope>->getCharPositionInLine(<scope>)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "<scope>->getChannel(<scope>)"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "<scope>->getTokenIndex(<scope>)"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "<scope>->getText(<scope>)"

// Somebody may ref $template
// or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.start"
rulePropertyRef_stop(scope,attr) ::= "retval.stop"
rulePropertyRef_tree(scope,attr) ::= "retval.tree"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
INPUT->toStringSS(INPUT, ADAPTOR->getTokenStartIndex(ADAPTOR, retval.start), ADAPTOR-
>getTokenStopIndex(ADAPTOR, retval.start))
<else>
STRSTREAM->toStringTT(STRSTREAM, retval.start, LT(-1))
<endif>

```

```

>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "LEXER->getText(LEXER)"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "LEXSTATE->tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "LEXSTATE->tokenStartCharPositionInLine"
lexerRulePropertyRef_channel(scope,attr) ::= "LEXSTATE->channel"
lexerRulePropertyRef_start(scope,attr) ::= "LEXSTATE->tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(LEXER->getCharIndex(LEXER)-1)"
lexerRulePropertyRef_index(scope,attr)
::= "-1" // undefined token index in lexer
lexerRulePropertyRef_int(scope,attr) ::= "LEXER->getText(LEXER)->toInt32(LEXER->getText(LEXER))"

// setting $st and $tree is allowed in local rule. everything else is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree=<expr>";
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st=<expr>";

/** How to deal with an @after for C targets. Because we cannot rely on
 * any garbage collection, after code is executed even in backtracking
 * mode. Must be documented clearly.
 */
execAfter(action) ::= <<
{
  <action>
}
>>

/** How to execute an action (when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if ( <actions.(actionScope).synpredgate> )
{
  <action>
}
<else>
if ( BACKTRACKING == 0 )
{
  <action>
}
<endif>
<else>
{
  <action>
}
}

```



```

<endif>
>>

// M I S C (properties, etc...)

bitsetDeclare(name, words64) ::= <<

/** Bitset defining follow
    set for error recovery in rule state: <name> */
static ANTLR3_BITWORD <name>_bits[] = { <words64:{it |ANTLR3_UINT64_LIT(<it>)}; separator=", "> };
static ANTLR3_BITSET_LIST <name> = { <name>_bits, <length(words64)> };
>>

bitset(name, words64) ::= <<
antlr3BitsetSetAPI(&<name>);<\n>
>>

codeFileExtension() ::= ".c"

true_value() ::= "ANTLR3_TRUE"
false_value() ::= "ANTLR3_FALSE"

```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/C/C.stg

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```

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*/

```
dfa(decisionRanks,states,edges,rankdir,startState,useBox) ::= <<
```

```
digraph NFA {  
<if(rankdir)>rankdir=<rankdir>;<endif>  
<decisionRanks; separator="\n">  
<states; separator="\n">  
<edges; separator="\n">  
}  
>>
```

```
nfa(decisionRanks,states,edges,rankdir,startState) ::= <<
```

```
digraph NFA {  
rankdir=LR;  
<decisionRanks; separator="\n">  
<states;  
separator="\n">  
<edges; separator="\n">  
}  
>>
```

```
decision-rank(states) ::= <<
```

```
{rank=same; rankdir=TB; <states; separator=" "; >}  
>>
```

```
edge(src,target,label,arrowhead) ::= <<
```

```
<src> -> <target> [fontsize=11, fontname="Courier", arrowsize=.7, label = "<label>"<if(arrowhead)>, arrowhead =  
<arrowhead><endif>];  
>>
```

```
action-edge(src,target,label,arrowhead) ::= <<
```

```
<src> -> <target> [fontsize=11, fontname="Courier", arrowsize=.7, label = "<label>"<if(arrowhead)>, arrowhead =  
<arrowhead><endif>];  
>>
```

```
epsilon-edge(src,target,label,arrowhead) ::= <<
```

```
<src> -> <target> [fontname="Times-Italic", label = "e"];  
>>
```

```
state(name,useBox) ::= <<
node [fontsize=11, shape = <if(useBox)>box<else>circle, fixedsize=true, width=.4<endif>]; <name>
>>
```

```
stopstate(name,useBox) ::= <<
node [fontsize=11, shape = <if(useBox)>polygon,sides=4,peripheries=2<else>doublecircle, fixedsize=true,
width=.6<endif>]; <name>
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/tool/templates/dot/dot.stg
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```

```
/*
```

```
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```

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```

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```
*/
```

```
@outputFile.imports() ::= <<
```

```
<@super.imports(>
```

```
<if(!TREE_PARSER)><! tree parser would already have imported !>
```

```
import org.antlr.runtime.tree.*;<\n>
```

```
<endif>
```

```

>>

@genericParser.members() ::= <<
<@super.members()>
<parserMembers()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
protected TreeAdaptor adaptor = new CommonTreeAdaptor();

public void setTreeAdaptor(TreeAdaptor adaptor) {
    this.adaptor = adaptor;
    <grammar.directDelegates: {g|<g:delegateName()>.setTreeAdaptor(this.adaptor);}>
}
public
TreeAdaptor getTreeAdaptor() {
    return adaptor;
}
>>

@returnScope.ruleReturnMembers() ::= <<
<ASTLabelType> tree;
@Override
public <ASTLabelType> getTree() { return tree; }
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> root_0 = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<if(!ruleDescriptor.isSynPred)>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,
    ruleDescriptor.wildcardTreeListLabels]:{it | <ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.tokenListLabels:{it | <ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<if(ruleDescriptor.supportsLabelOptimization)>
<ruleDescriptor.allTokenRefsInRewrites
    :{it | RewriteRule<rewriteElementType>Stream stream_<it>=new
    RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInRewrites
    :{it | RewriteRuleSubtreeStream
    stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>");}; separator="\n">
<else>
<ruleDescriptor.allTokenRefsInAltsWithRewrites

```

```

: {it | RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {it | RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>");};
separator="\n">
<endif>
<endif>
>>

/** When doing auto AST construction, we must define some variables;
 * These should be turned off if doing rewrites. This must be a "mode"
 * as a rule could have both rewrite and AST within the same alternative
 * block.
 */
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode && !ruleDescriptor.isSynPred)>
root_0 = (<ASTLabelType>)adaptor.nil();<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,terminalOptions={})
::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<token>.add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label, ...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<token>.add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */

```

```

tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label, ...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope)
::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<rule.name>.add(<label>.getTree());
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(label, {<label>.getTree()})>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>stream_<rule>.add(<label>.getTree());
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(label, {<label>.getTree()})>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel,
enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">

```

```

// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {
<endif>
<prevRuleRootRef(>.tree = root_0;
<rewriteCodeLabels(>
root_0 = (<ASTLabelType>)adaptor.nil();
<alts:rewriteAlt(> separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>.tree = (<ASTLabelType>)adaptor.rulePostProcessing(root_0);
input.replaceChildren(adaptor.getParent(retval.start),
    adaptor.getChildIndex(retval.start),
    adaptor.getChildIndex(_last),
    retval.tree);
<endif>
<endif>
<!
if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.tree = root_0;
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>.tree = root_0;
<endif>
<endif>
<endif>
<endif>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {it | RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
separator="\n"
>
<referencedTokenListLabels
: {it | RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
separator="\n"
>
<referencedWildcardLabels
: {it | RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};

```

```

separator="\n"
>
<referencedWildcardListLabels
:{it | RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",list_<it>)};
separator="\n"
>
<referencedRuleLabels
:{it | RewriteRuleSubtreeStream
stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>",<it>!=null?<it>.getTree():null)};
separator="\n"
>
<referencedRuleListLabels
:{it | RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"token <it>",list_<it>)};
separator="\n"
>
>>

```

/** Generate code for an optional rewrite block; note it uses the deep ref'd element

* list rather shallow like other blocks.

*/

```

rewriteOptionalBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
if ( <referencedElementsDeep:{el | stream_<el>.hasNext()}; separator="||"> ) {
<alt>
}
<referencedElementsDeep:{el | stream_<el>.reset();<n>}>
>>

```

```

rewriteClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
while ( <referencedElements:{el
| stream_<el>.hasNext()}; separator="||"> ) {
<alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

```

```

rewritePositiveClosureBlock(

```



```

alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
if ( !( <referencedElements:{el | stream_<el>.hasNext()}; separator="||"> ) ) {
  throw new RewriteEarlyExitException();
}
while ( <referencedElements:{el | stream_<el>.hasNext()}; separator="||"> ) {
  <alt>
}
<referencedElements:{el | stream_<el>.reset();<\n>}>
>>

```

```

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>) {
  <a.alt>
}<\n>
<else>
{
  <a.alt>
}<\n>
<endif>
>>

```

```

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

```

```

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
  <ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.nil();
  <root:rewriteElement()>
  <children:rewriteElement()>
  adaptor.addChild(root_<enclosingTreeLevel>,
    root_<treeLevel>);
}<\n>
>>

```

```

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

```

```

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

```

```

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,args,terminalOptions={}) ::= <<
adaptor.addChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args]
...) */
rewriteTokenRefRoot(token,elementIndex,args,terminalOptions={}) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>);
>>

rewriteImaginaryTokenRef(args,token,elementIndex,terminalOptions={}) ::= <<
adaptor.addChild(root_<treeLevel>, <createImaginaryNode(token,args,terminalOptions)>);
>>

rewriteImaginaryTokenRefRoot(args,token,elementIndex,terminalOptions={}) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<createImaginaryNode(token,args,terminalOptions)>,
root_<treeLevel>);
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.

```

```

*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule)
 ::= <<
 adaptor.addChild(root_<treeLevel>, stream_<rule>.nextTree());
 >>

rewriteRuleRefRoot(rule) ::= <<
 root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<rule>.nextNode(), root_<treeLevel>);
 >>

rewriteNodeAction(action) ::= <<
 adaptor.addChild(root_<treeLevel>, <action>);
 >>

rewriteNodeActionRoot(action) ::= <<
 root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<action>, root_<treeLevel>);
 >>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
 adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());
 >>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
 adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());
 >>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
 root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);
 >>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label)
 ::= <<
 root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);
 >>

rewriteWildcardLabelRef(label) ::= <<
 adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());
 >>

createImaginaryNode(tokenType,args,terminalOptions={ }) ::= <%
 <if(terminalOptions.node)>

```

```

<! new MethodNode(IDLabel, args) !>
new <terminalOptions.node>(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
(<ASTLabelType>)adaptor.create(<tokenType>, <args; separator=", "><if(!args)>"<tokenType>"<endif>)
<endif>
%>

```

```

createRewriteNodeFromElement(token,args,terminalOptions={}) ::= <%
<if(terminalOptions.node)>
new <terminalOptions.node>(stream_<token>.nextToken()<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
adaptor.create(<token>, <args; separator=", ">)
<else>
stream_<token>.nextNode()
<endif>
<endif>
%>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Java/AST.stg
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```

```

/*

```

```

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```

```

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*/

/** Template overrides to add debugging to AST stuff. Dynamic inheritance

* hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.

*/

```
parserMembers() ::= <<
protected DebugTreeAdaptor adaptor =
    new DebugTreeAdaptor(null,new CommonTreeAdaptor());
public void setTreeAdaptor(TreeAdaptor adaptor) {
    this.adaptor = new DebugTreeAdaptor(dbg,adaptor);
}
public TreeAdaptor getTreeAdaptor()
{
    return adaptor;
}<\n>
>>
```

```
parserCtorBody() ::= <<
```

```
>>
```

```
createListenerAndHandshake() ::= <<
```

```
<super.createListenerAndHandshake(>
```

```
>>
```

```
ctorForPredefinedListener() ::= <<
```

```
>>
```

```
@rewriteElement.pregen() ::= ""
```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/C/ASTDbg.stg

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*/

group Delphi;

```
csharpTypeInitMap ::= [  
  "int": "0",  
  "uint": "0",  
  "long": "0",  
  "ulong": "0",  
  "float": "0.0",  
  "double": "0.0",  
  "bool": "False",  
  "byte": "0",  
  "sbyte": "0",  
  "short": "0",  
  "ushort": "0",  
  "char": "#0",  
  "string": "",  
  "String": "",  
  default: "nil" // anything other than an atomic type  
]  
  
/** The overall file structure of a recognizer; stores methods  
for rules  
* and cyclic DFAs plus support code.  
* LEXER (Boolean): should we generate lexer code?  
* PARSER (Boolean): should we generate parser code?  
* TREE_PARSER (Boolean): should we generate tree parser code?  
* actionScope (String): 'lexer', 'parser', 'tree_parser' or custom scope  
* actions (HashMap):
```

```

* docComment (String): document comment
* recognizer (Object): recognizer class generator
* name (String): name of grammar
* tokens (HashMap<name: String, type: Integer>):
* tokenNames:
* rules:
* cyclicDFAs:
* bitsets:
* buildTemplate (Boolean): should we generate a string template?
* buildAST (Boolean): should we generate an AST?
* rewriteMode (Boolean): are we rewriteing nodes?
* profile (Boolean):
* backtracking (Boolean): backtracking mode?
* synpreds (): syntactic predicates
* memoize (Boolean): should we memoize?
* numRules (Integer): number of rules
* fileName (String): fully qualified name of original .g file
* ANTLRVersion
(String): ANTLR version in Major.Minor.Build format
* generatedTimestamp (String): date/time when the file is generated
* trace (Boolean): should we trace input/output?
* scopes:
* superClass (String): name of base class, or empty string
* literals:
*/
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
    docComment, recognizer,
    name, tokens, tokenNames, rules, cyclicDFAs,
    bitsets, buildTemplate, buildAST, rewriteMode, profile,
    backtracking, synpreds, memoize, numRules,
    fileName, ANTLRVersion, generatedTimestamp, trace,
    scopes, superClass, literals) ::=
<<
unit <name>;

{$HINTS OFF}

// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<actions.(actionScope).header>

interface

<@imports>
uses<\n>
<@end>
<actions.(actionScope).usesInterface>
<if(TREE_PARSER)>

```

```

Antlr.Runtime.Tree,<\n>
<endif>
Antlr.Runtime,
Antlr.Runtime.Collections,
Antlr.Runtime.Tools;

<docComment>
<recognizer>
>>

/** Generates source code for the
lexer class
* grammar (Grammar object)
*/
lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
    filterMode, superClass="Lexer") ::= <<
type
I<grammar.recognizerName> = interface(I<@superClassName><superClass><@end>)
end;

T<grammar.recognizerName> = class(T<@superClassName><superClass><@end>,
I<grammar.recognizerName>)
strict private
    FCnt: array [0..<grammar.numberOfDecisions>] of Byte;
    FLA: array [0..<grammar.numberOfDecisions>, 0..255] of Integer;
    FException: ERecognitionException;
    procedure InitializeCyclicDFAs;
    <cyclicDFAs:cyclicDFADeclaration()>
public
    const
        <tokens:{<it.name> = <it.type>;} separator="\n">
        <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
strict private
    <actions.(actionScope).memberDeclarations>
public
    // delegates
    <grammar.delegates: {g|<g.delegateName(): I<superClass>; {<g.recognizerName>}}; separator="\n">
public
    // delegators
    <grammar.delegators:
{g|<g.delegateName(): Pointer; {<g.recognizerName>}}; separator="\n">
    <last(grammar.delegators):{g|gParent: Pointer; {<g.recognizerName>}}>
protected
    { IBaseRecognizer }
    function GetGrammarFileName: String; override;
<if(filterMode)>
    function AlreadyParsedRule(const Input: IIntStream;
        const RuleIndex: Integer): Boolean; override;

```



```

    procedure Memoize(const Input: IIntStream; const RuleIndex,
        RuleStartIndex: Integer); override;
protected
    { ILexer }
    function NextToken: IToken; override;<\n>
<endif>
protected
    { ILexer }
    procedure DoTokens; override;
public
    constructor Create; overload;
    constructor Create(const AInput: ICharStream<grammar.delegators:{g|; const A<g:delegateName():
IBaseRecognizer{<g.recognizerName>}}>); overload;
    constructor Create(const AInput: ICharStream; const AState: IRecognizerSharedState<grammar.delegators:{g|;
const A<g:delegateName(): IBaseRecognizer{<g.recognizerName>}}>); overload;

    <rules: {r | <if(!r.ruleDescriptor.isSynPred)><lexerRuleDeclaration(r)><endif>}>
    <synpreds: {p | <lexerSynpredDeclaration(p)>}; separator="\n">
end;

```

implementation

uses

```

<grammar.delegates: {g|<g.recognizerName>,}; separator="\n">
<grammar.delegators: {g|<g.recognizerName>,}; separator="\n">
<actions.(actionScope).usesImplementation>
SysUtils,
StrUtils,
Math;

```

```
{ T<grammar.recognizerName> }
```

```
constructor T<grammar.recognizerName>.Create;
```

```
begin
```

```
    InitializeCyclicDFAs;
```

```
end;
```

```
constructor T<grammar.recognizerName>.Create(const AInput: ICharStream<grammar.delegators:{g|; const
A<g:delegateName(): IBaseRecognizer{<g.recognizerName>}}>);
```

```
begin
```

```
    Create(AInput, nil<grammar.delegators:{g|, A<g:delegateName()>>);
```

```
end;
```

```
constructor T<grammar.recognizerName>.Create(const AInput: ICharStream; const AState:
```

```
IRecognizerSharedState<grammar.delegators:{g|; const A<g:delegateName():
```

```
IBaseRecognizer{<g.recognizerName>}}>);
```

```
begin
```

```
    inherited Create(AInput, AState);
```

```

InitializeCyclicDFAs;
{ TODO: Necessary in Delphi??? Not removed yet. }
<if(memoize)>
<if(grammar.grammarIsRoot)>
State.RuleMemoCount := <numRules>+1;<\n> <! index from 1..n !>
<endif>
<endif>
<grammar.directDelegates:
  {g|<g.delegateName()> := T<g.recognizerName>.Create(AInput, State<trunc(g.delegators):{p|,
<p.delegateName()>>, Self);}; separator="\n">
  <grammar.delegators:
    {g|<g.delegateName()> := Pointer(A<g.delegateName()>);}; separator="\n">
  <last(grammar.delegators):{g|gParent := Pointer(A<g.delegateName()>);}>
  <actions.(actionScope).memberInitializations>
end;
<actions.(actionScope).memberImplementations>
function T<grammar.recognizerName>.GetGrammarFileName: String;
begin
  Result := '<fileName>';
end;

<if(filterMode)>
<filteringNextToken()>
<endif>

<rules; separator="\n\n">
<synpreds:{p | <lexerSynpred(p)>>}>

procedure T<grammar.recognizerName>.InitializeCyclicDFAs;
begin
  <cyclicDFAs:{ dfa | FDFA<dfa.decisionNumber> :=
TDFA<dfa.decisionNumber>.Create(Self<@debugAddition()>);};
  separator="\n">
  <cyclicDFAs:{ dfa | <if(dfa.specialStateSTs)>FDFA<dfa.decisionNumber>.SpecialStateTransitionHandler :=
DFA<dfa.decisionNumber>_SpecialStateTransition;<endif>}; separator="\n">
end;

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
end.>>

lexerRuleDeclaration(rule) ::= <<
procedure m<rule.ruleName>>(<rule.ruleDescriptor.parameterScope:parameterScope(scope=rule)>);<\n>
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 *

```

```

* Make rule memoization happen only at levels above 1 as we start mTokens
* at backtracking==1.
*/
filteringNextToken() ::= <<
function T<grammar.recognizerName>.NextToken: IToken;
var
  M: Integer;
begin
  while (True) do
  begin
    if (Input.LA(1) = Integer(cscEOF)) then
      Exit(TToken.EOF_TOKEN);

    State.Token := nil;
    State.Channel := TToken.DEFAULT_CHANNEL;
    State.TokenStartCharIndex := Input.Index;
    State.TokenStartCharPositionInLine := Input.CharPositionInLine;
    State.TokenStartLine := Input.Line;
    State.Text := "";
    try
      M := Input.Mark();
      State.Backtracking := 1; <! means we won't throw slow exception !>
      State.Failed := False;
      mTokens();
      State.Backtracking := 0;
    <!
      mTokens backtracks with synpred at backtracking==2
      and we set the synpredgate to allow actions at level 1.
    !>
    if (State.Failed) then
    begin
      Input.Rewind(M);
      Input.Consume; <! // advance one char and try again !>
    end
    else
    begin
      Emit;
      Exit(State.Token);
    end;
  except
    on RE: ERecognitionException do
    begin
      // shouldn't happen in backtracking mode, but...
      ReportError(RE);
      Recover(RE);
    end;
  end;
end;

```

```

end;

function T<grammar.recognizerName>.AlreadyParsedRule(const Input: IIntStream;
const
RuleIndex: Integer): Boolean;
begin
if (State.Backtracking > 1) then
Result := inherited AlreadyParsedRule(Input, RuleIndex)
else
Result := False;
end;

procedure T<grammar.recognizerName>.Memoize(const Input: IIntStream; const RuleIndex,
RuleStartIndex: Integer);
begin
if (State.Backtracking > 1) then
inherited Memoize(Input, RuleIndex, RuleStartIndex);
end;

>>

filteringActionGate() ::= "(State.Backtracking = 1)"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
bitsets, inputStreamType, superClass, filterMode,
ASTLabelType="ANTLRInterface", labelType, members, rewriteElementType) ::= <<
type
<rules: {r | <genericParserRuleReturnType(rule=r, ruleDescriptor=r.ruleDescriptor)>>
I<grammar.recognizerName> = interface(I<@superClassName><superClass><@end>)
<rules: {r | <genericParserRuleInterface(rule=r, ruleDescriptor=r.ruleDescriptor)>>
end;

T<grammar.recognizerName>
= class(T<@superClassName><superClass><@end>, I<grammar.recognizerName>)
<if(grammar.grammarIsRoot)>
public
const
TOKEN_NAMES: array [0..<length(tokenNames)>+3] of String = (
'\<invalid>',
'\<EOR>',
'\<DOWN>',
'\<UP>',
<tokenNames; separator=",\n">);<\n>
<endif>
public
const
<tokens: {<it.name> = <it.type>;}; separator="\n">

```

```

public
  // delegates
  <grammar.delegates: {g|<g:delegateName(): I<superClass>; {<g.recognizerName>}}; separator="\n">
public
  // delegators
  <grammar.delegators: {g|<g:delegateName(): Pointer; {<g.recognizerName>}}; separator="\n">
  <last(grammar.delegators):{g|gParent: Pointer; {<g.recognizerName>}}>

  <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeDeclaration(scope=it)><endif>}>
<@members>
  <! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
public
  constructor Create(const AInput: <inputStreamType><grammar.delegators:{g|; const A<g:delegateName():
IBaseRecognizer{<g.recognizerName>}}>); overload;
  constructor Create(const AInput: <inputStreamType>; const AState:
IRecognizerSharedState<grammar.delegators:{g|; const A<g:delegateName():
IBaseRecognizer{<g.recognizerName>}}>); overload;
<@end>
protected
  { IBaseRecognizer }
  function GetTokenNames: TStringArray; override;
  function GetGrammarFileName: String; override;
strict private
  <actions.(actionScope).memberDeclarations>
  <rules: {r | <genericParserRuleDeclaration(rule=r, ruleDescriptor=r.ruleDescriptor)>}>

  <! generate rule/method definitions for imported rules so they
  appear to be defined in this recognizer. !>
  // Delegated rules
  <grammar.delegatedRules:{ruleDescriptor| <delegatedRuleDeclaration(ruleDescriptor)>}>

  <synpreds:{p | <synpredDeclaration(p)>}; separator="\n">
  <cyclicDFAs:cyclicDFADeclaration()>
strict private
  FException: ERecognitionException;
  FLA: array [0..<grammar.numberofDecisions>, 0..255] of Integer;
  FCnt:
array [0..<grammar.numberofDecisions>] of Byte;
  procedure InitializeCyclicDFAs;
  <if(bitsets)>
public
  class var
    <bitsets.bitsetDecl(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>})>
public
  class procedure InitializeBitsets; static;<\n>
  <endif>
end;

```

implementation

uses

```
<grammar.delegates: {g|<g.recognizerName>,}; separator="\n">
```

```
<grammar.delegates: {g|<g.recognizerName>,}; separator="\n">
```

```
<actions.(actionScope).usesImplementation>
```

```
SysUtils,
```

```
StrUtils,
```

```
Math;
```

```
{ T<grammar.recognizerName> }
```

```
constructor T<grammar.recognizerName>.Create(const AInput: <inputStreamType><grammar.delegates:{g|; const  
A<g:delegateName(): IBaseRecognizer {<g.recognizerName> } }>);
```

```
begin
```

```
Create(AInput, TRecognizerSharedState.Create<grammar.delegates: {g|, A<g:delegateName()> }>);
```

```
end;
```

```
constructor T<grammar.recognizerName>.Create(const AInput: <inputStreamType>;
```

```
const AState: IRecognizerSharedState<grammar.delegates: {g|; const A<g:delegateName()>;
```

```
IBaseRecognizer {<g.recognizerName> } }>);
```

```
begin
```

```
inherited Create(AInput, AState);
```

```
<@membersConstructor>
```

```
<@end>
```

```
<parserCtorBody()>
```

```
<grammar.directDelegates: {g|<g:delegateName()> := T<g.recognizerName>.Create(Input,  
State<trunc(g.delegates): {p|, <p:delegateName()> }>, Self); }; separator="\n">
```

```
<grammar.indirectDelegates: {g | <g:delegateName()> := <g.delegate:delegateName()>.<g:delegateName()>; };  
separator="\n">
```

```
<last(grammar.delegates): {g|gParent := Pointer(A<g:delegateName()>); }>
```

```
<rules: {r | <ruleAttributeScopeInit(scope=r.ruleDescriptor.ruleScope)> }>
```

```
<scopes: {<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif> }>
```

```
<actions.(actionScope).memberInitializations>
```

```
end;
```

```
<actions.(actionScope).memberImplementations>
```

```
<grammar.delegatedRules: {ruleDescriptor| <delegatedRuleImplementation(ruleDescriptor)> }; separator="\n">
```

```
procedure T<grammar.recognizerName>.InitializeCyclicDFAs;
```

```
begin
```

```
<cyclicDFAs: {dfa | FDFA<dfa.decisionNumber> := TDFA<dfa.decisionNumber>.Create(Self); }; separator="\n">
```

```
<cyclicDFAs: {dfa | <if(dfa.specialStateSTs)>FDFA<dfa.decisionNumber>.SpecialStateTransitionHandler :=  
DFA<dfa.decisionNumber>_SpecialStateTransition;<endif> }; separator="\n">
```

```
end;
```

```
<if(bitsets)>
```

```
class procedure T<grammar.recognizerName>.InitializeBitsets;
```

```
begin
```

```

<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>
end;
<endif>

<@membersImplementation>
<@end>

function T<grammar.recognizerName>.GetTokenNames: TStringArray;
var
  I: Integer;
begin
  SetLength(Result,Length(T<grammar.composite.rootGrammar.recognizerName>.TOKEN_NAMES));
  for I := 0 to Length(T<grammar.composite.rootGrammar.recognizerName>.TOKEN_NAMES) - 1 do
    Result[I] := T<grammar.composite.rootGrammar.recognizerName>.TOKEN_NAMES[I];
  end;
end;

function T<grammar.recognizerName>.GetGrammarFileName: String;
begin
  Result := '<fileName>';
end;

<rules; separator="\n\n">
<synpreds: {p | <synpred(p)>}>

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
<if(bitsets)>
initialization
  T<grammar.recognizerName>.InitializeBitsets;<\n>
<endif>
end.>>

delegatedRuleDeclaration(ruleDescriptor) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
function <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):
I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<returnType()>;<\n>
<else>
procedure <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>);<\n>
<endif>
<endif>
>>

delegatedRuleImplementation(ruleDescriptor) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
function

```

```

T<grammar.recognizerName>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
): I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function
T<grammar.recognizerName>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
): <returnType()>;<\n>
<else>
procedure
T<grammar.recognizerName>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
);<\n>
<endif>
<endif>
begin
<if(ruleDescriptor.hasReturnValue)>Result :=<endif>
T<ruleDescriptor.grammar.recognizerName>(<ruleDescriptor.grammar:delegateName()>.Implementor).<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes: {a|<a.name>}; separator=", ">);
end;

```

```
>>
```

```

parserCtorBody() ::= <<
InitializeCyclicDFAs;
<if(memoize)>
<if(grammar.grammarIsRoot)>
State.RuleMemoCount := <length(grammar.allImportedRules)>+1;<\n> <! index from 1..n !>
<endif>
<endif>
<grammar.delegators: {g|<g:delegateName()> := Pointer(A<g:delegateName()>); separator="\n">
>>

```

```

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType, superClass="Parser",
labelType="Token", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ITokenStream", rewriteElementType="Token", ...)>
>>

```

```

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */

```

```

treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="object", superClass="TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

```

```

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do

```



```

* any of the normal memoization stuff in here either; it's a waste.
* As predicates cannot be inlined into the invoking rule, they need to
* be in a rule by themselves.
*/
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start "<ruleName>"
procedure
T<grammar.recognizerName>.<ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
;
var
Alt: array [0..<grammar.numberOfDecisions>]
of Integer;
<ruleLabelDefVars()>
begin
<ruleLabelDefs()>
<if(trace)>
TraceIn('<ruleName>_fragment', <ruleDescriptor.index>);
try
<block>
finally
TraceOut('<ruleName>_fragment', <ruleDescriptor.index>);
end;
<else>
<block>
<endif>
end;
// $ANTLR end "<ruleName>"
>>

synpredDecls(name) ::= <<
SynPredPointer <name>;<\n>
>>

synpred(name) ::= <<

function T<grammar.recognizerName>.<name>: Boolean;
var
Start: Integer;
Success: Boolean;
begin
State.Backtracking := State.Backtracking + 1;
<@start()>
Start := Input.Mark;
try
<name>_fragment(); // can never throw exception
except
on RE: ERecognitionException do

```

```

    WriteLn('Impossible: ' + RE.ToString);
end;
Success := not State.Failed;
Input.Rewind(Start);
<@stop()>
State.Backtracking := State.Backtracking - 1;
State.Failed := False;
Result := Success;
end;<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

lexerSynpredDeclaration(name) ::= <<
function
<name>: Boolean;
procedure <name>_fragment;
>>

synpredDeclaration(name) ::= <<
function <name>: Boolean;
procedure <name>_fragment;
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ((State.Backtracking > 0) and AlreadyParsedRule(Input, <ruleDescriptor.index>)) then
Exit(<ruleReturnValue()>);
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)><\n>if (State.Failed) then Exit(<ruleReturnValue()>);<\n><endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (State.Backtracking > 0) then
begin
State.Failed := True;
Exit(<ruleReturnValue()>);
end;<endif>
>>

genericParserRuleDeclaration(rule, ruleDescriptor) ::= <<

```

```

<if(ruleDescriptor.isSynPred)>
<else>
<ruleAttributeScopeDeclaration(scope=ruleDescriptor.ruleScope)>
<returnScopeDeclaration(scope=ruleDescriptor.returnScope)>
public
<if(ruleDescriptor.hasMultipleReturnValues)>
function <rule.ruleName>:
I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function <rule.ruleName>: <returnType()>;<\n>
<else>
procedure <rule.ruleName>;<\n>
<endif>
<endif>
<endif>
>>

genericParserRuleInterface(rule, ruleDescriptor) ::= <<
<if(ruleDescriptor.isSynPred)>
<else>
<if(ruleDescriptor.hasMultipleReturnValues)>
function <rule.ruleName>: I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function <rule.ruleName>: <returnType()>;<\n>
<else>
procedure <rule.ruleName>;<\n>
<endif>
<endif>
<endif>
>>

genericParserRuleReturnType(rule, ruleDescriptor) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(ruleDescriptor.isSynPred)>
<else>
I<returnType()> = interface(I<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope)
end;<\n>
<endif>
<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize)

```

```

 ::= <<
 <ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
 <returnScope(scope=ruleDescriptor.returnScope)>

 // $ANTLR start "<ruleName>"
 (* <fileName>:<description> *)
 <if(ruleDescriptor.hasMultipleReturnValues)>
 function T<grammar.recognizerName>.<ruleName>( <ruleDescriptor.parameterScope:parameterScope(scope=it)>):
 I<returnType()>;
 <else>
 <if(ruleDescriptor.hasSingleReturnValue)>
 function T<grammar.recognizerName>.<ruleName>( <ruleDescriptor.parameterScope:parameterScope(scope=it)>):
 <returnType()>;
 <else>
 procedure
 T<grammar.recognizerName>.<ruleName>( <ruleDescriptor.parameterScope:parameterScope(scope=it)>);
 <endif>
 <endif>

 var
 <ruleDescriptor.actions.vars>
 Locals: TLocalStorage;
 <if(ruleDescriptor.hasMultipleReturnValues)>
 RetVal: I<returnType()>;<\n>
 <else>
 <if(ruleDescriptor.hasSingleReturnValue)>
 RetVal: <returnType()>;<\n>
 <else>
 <endif>
 <endif>
 Alt: array [0..<grammar.numberOfDecisions>] of Integer;
 <ruleDeclarationVars()>
 <ruleLabelDefVars()>
 begin
 Locals.Initialize;
 try
 <if(trace)>TraceIn('<ruleName>', <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleDescriptor.actions.init>
 <@preamble()>
 try
 try
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>

```

```

<if(exceptions)>
  <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n}>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
  <actions.(actionScope).rulecatch>
<else>
  except
  on RE: ERecognitionException do
  begin
    ReportError(RE);
    Recover(Input,RE);
    <@setErrorReturnValue()>
  end;<\n>
<endif>
<endif>
<endif>
  end;
  finally
    <if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
    <memoize()>
    <ruleScopeCleanUp()>
    <finally>
  end;
  <@postamble()>
  finally
    Locals.Finalize;
  end;
  Exit(<ruleReturnValue()>);
end;
//
$ANTLR end "<ruleName>"
>>

catch(decl,action) ::= <<
catch (<e.decl>)
{
  <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal := T<returnType()>.Create;
RetVal.Start := Input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes:{ a |
<a.name> := <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;

```

```

}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_startIndex := Input.Index();
<endif>
>>

ruleDeclarationVars() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.name>: <a.type>;
}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_startIndex: Integer;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: { <it>Stack.Push(T<it>Scope.Create); }; separator="\n">
<ruleDescriptor.ruleScope: { <it.name>Stack.Push(T<it.name>Scope.Create); }; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: { <it>Stack.Pop(); }; separator="\n">
<ruleDescriptor.ruleScope: { <it.name>Stack.Pop(); };
separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]: { <it.label.text> := nil; }; separator="\n">
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]: { list_<it.label.text> := nil; }; separator="\n">
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: { ll|<ll.label.text> := nil; }; separator="\n">
>>

ruleLabelDefVars() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]: { <it.label.text>: I<labelType>; }; separator="\n">
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]: { list_<it.label.text>: IList<IANTLRInterface>; };
separator="\n">
<ruleDescriptor.ruleLabels:ruleLabelDefVar(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: { ll|<ll.label.text>: <ruleLabelType(referencedRule=ll.referencedRule)>; };
separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,

```

```

ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
  :{<it.label.text> := nil;}; separator="\n"
>
<ruleDescriptor.charLabels:{int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
  :{List_<it.label.text> := nil;}; separator="\n"
>
>>

```

```

lexerRuleLabelDefDeclarations() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
  :{<it.label.text>: I<labelType>;}; separator="\n"
>
<ruleDescriptor.charLabels:{int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
  :{List_<it.label.text>: IList;}; separator="\n"
>
>>

```

```

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
RetVal
<endif>
<else>
<! nil !>
<endif>
<endif>
>>

```

```

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
RetVal.Stop
:= Input.LT(-1);
<endif>
<endif>
>>

```

```

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (State.Backtracking > 0) then
  Memoize(Input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex);
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
<ruleDescriptor.parameterScope>
procedure
T<grammar.recognizerName>.m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>);
var
  <ruleDescriptor.actions.vars>
  Locals: TLocalStorage;
  TokenType, Channel: Integer;
  Alt: array [0..<grammar.numberofDecisions>] of Integer;
  <lexerRuleLabelDefDeclarations()>
begin
  Locals.Initialize;
  try
    <ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
    <if(trace)>TraceIn("<ruleName>", <ruleDescriptor.index>);<endif>
    <ruleScopeSetUp()>
    <ruleDeclarations()>
    try
<if(nakedBlock)>

    <ruleMemoization(name=ruleName)>
    <lexerRuleLabelDefs()>
    <ruleDescriptor.actions.init>
    <block><\n>
<else>
    TokenType := <ruleName>;
    Channel := DEFAULT_TOKEN_CHANNEL;
    <ruleMemoization(name=ruleName)>
    <lexerRuleLabelDefs()>
    <ruleDescriptor.actions.init>
    <block>
    <ruleCleanUp()>
    State.TokenType := TokenType;
    State.Channel := Channel;

```



```

    <(ruleDescriptor.actions.after):execAction(>
<endif>
    finally
        <if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
        <ruleScopeCleanUp(>
        <memoize(>
        end;
    finally
        Locals.Finalize;
    end;
end;
// $ANTLR end "<ruleName>"
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
procedure T<grammar.recognizerName>.mTokens;
var
    Alt: array [0..<grammar.numberOfDecisions>] of Integer;
begin
    <block>
end;

procedure T<grammar.recognizerName>.DoTokens;
begin
    mTokens;
end;
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
(* <fileName>:<description> *)
Alt[<decisionNumber>] := <maxAlt>;
<decls>
<@predecision(>
<decision>
<@postdecision(>
<@prebranch(>
case Alt[<decisionNumber>] of
    <alts:altSwitchCase(>
end;
<@postbranch(>
>>

```

```

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
(* <fileName>:<description> *)
Alt[<decisionNumber>] := <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
case Alt[<decisionNumber>] of
  <alts:altSwitchCase()>
end;
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
(* <fileName>:<description> *)
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule
with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
(* <fileName>:<description> *)
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
(* <fileName>:<description> *)
FCnt[<decisionNumber>] := 0;
<decls>
<@preloop()>
while (True) do
begin
  Alt[<decisionNumber>] := <maxAlt>;
  <@predecision()>
  <decision>
  <@postdecision()>
  case Alt[<decisionNumber>] of
    <alts:altSwitchCase()>
  else
    begin

```

```

    if (FCnt[<decisionNumber>] >= 1) then
        Break;
        <ruleBacktrackFailure()>
        raise EEarlyExitException.Create(<decisionNumber>, Input);
        <@earlyExitException()>
    end;
end;
Inc(FCnt[<decisionNumber>]);
end;
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description)
 ::= <<
(* <fileName>:<description> *)
<decls>
<@preloop()>
while (True) do
begin
Alt[<decisionNumber>] := <maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
case Alt[<decisionNumber>] of
<alts:altSwitchCase()>
else
Break;
end;
end;
<@postloop()>
>>

```

closureBlockSingleAlt ::= closureBlock

```

/** Optional blocks (x)? are translated to (x|) by before code generation
* so we can just use the normal block template
*/

```

optionalBlock ::= block

optionalBlockSingleAlt ::= block

```

/** A case in a switch that jumps to an alternative given the alternative
* number. A DFA predicts the alternative and then a simple switch
* does the jump to the code that actually matches that alternative.
*/

```

```

altSwitchCase() ::= <<
<i>:
<@prealt()>
<it><\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew)
::= <<
(* <fileName>:<description> *)
begin
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
end;
>>

/** What to emit when there is no rewrite. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<if(label)><label> := <endif>Match(Input, <token>,
FOLLOW_<token>_in_<ruleName><elementIndex><if(label)> as
I<labelType><endif>;<\n><checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label> = nil) then list_<label> := TList<IANTLRInterface>.Create;
list_<label>.Add(<elem>);<\n>
>>

```

```

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> := Input.LA(1);<\n>
<endif>
Match(<char>);
<checkRuleBacktrackFailure()>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> := Input.LA(1);<\n>
<endif>
MatchRange(<a>, <b>); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label> := Input.LA(1);<\n>
<else>
<label> := Input.LT(1) as I<labelType>;<\n>
<endif>
<endif>
if (<s>) then
begin
Input.Consume;
<postmatchCode>
<if(!LEXER)>
State.ErrorRecovery := False;<endif>
<if(backtracking)>State.Failed := False;<endif>
end
else
begin
<ruleBacktrackFailure()>
FException := EMismatchedSetException.Create(nil, Input);
<@mismatchedSetException()>
<if(LEXER)>
Recover(FException);
raise FException;<\n>
<else>
raise FException;
<! use following code to make it recover inline; remove throw mse;
RecoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);

```

```

!>
<endif>
end;<\n>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label,elementIndex) ::= <<
<if(label)>
Locals.AsInteger['<label>Start'] := CharIndex;
Match(<string>); <checkRuleBacktrackFailure()>
<label> := TCommonToken.Create(Input, TToken.INVALID_TOKEN_TYPE, TToken.DEFAULT_CHANNEL,
Locals.AsInteger['<label>Start'], CharIndex-1);
<else>
Match(<string>); <checkRuleBacktrackFailure()>
<endif>
>>

wildcard(label,elementIndex) ::= <<
<if(label)>
<label> := Input.LT(1) as I<labelType>;<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> := Input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label,
elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>

```

```

>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)>
<label> := <if(scope)><scope.delegateName().<endif><rule.name><args; separator=", "><\n>
<else>
<if(scope)>T<scope.recognizerName>(IANTLRObject(<scope.delegateName()>).Implementor).<endif><rule.name
><args; separator=", "><\n>
<endif>
State.FollowingStackPointer := State.FollowingStackPointer - 1;
<checkRuleBacktrackFailure()>
>>

/** ids+=1 */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was
 the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
Locals.AsInteger['<label>Start<elementIndex>'] := CharIndex;
<if(scope)><scope.delegateName().<endif>m<rule.name><args; separator=", ">;
<checkRuleBacktrackFailure()>
<label> := TCommonToken.Create(Input, TToken.INVALID_TOKEN_TYPE, TToken.DEFAULT_CHANNEL,
Locals.AsInteger['<label>Start<elementIndex>'], CharIndex - 1);
<else>
<if(scope)><scope.delegateName().Implementor as T<scope.recognizerName>.<endif>m<rule.name><args;
separator=", ">; <checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<

```

```

<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
Locals.AsInteger['<label>Start<elementIndex>'] := CharIndex;
Match(EOF);
<checkRuleBacktrackFailure()>
Locals['<label>'] := TCommonToken.Create(Input, EOF, TToken.DEFAULT_CHANNEL,
Locals.AsInteger['<label>Start<elementIndex>'], CharIndex-1);
<else>
Match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (Input.LA(1) = TToken.DOWN) then
begin
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil); <checkRuleBacktrackFailure()>
end;
<else>
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil);<\n><checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if (not (<evalPredicate(...)>))
then
begin
<ruleBacktrackFailure()>
raise EFailedPredicateException.Create(Input, '<ruleName>', '<description>');
end;<\n>
>>

```



```

// Fixed DFA (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(<k>);<\n>
<edges; separator="\nelse ">
else
begin
<if(eotPredictsAlt)>
Alt[<decisionNumber>] := <eotPredictsAlt>;<\n>
<else>
<ruleBacktrackFailure()>
raise ENoViableAltException.Create('<description>', <decisionNumber>, <stateNumber>, Input);<\n>
<endif>
end;
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(<k>);<\n>
<edges;
separator="\nelse ">;
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(<k>);
<edges; separator="\nelse ">;<\n>
<if(eotPredictsAlt)>
<if(!edges)>
Alt[<decisionNumber>] := <eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
begin
Alt[<decisionNumber>] := <eotPredictsAlt>;
end;<\n>
<endif>
<endif>
>>

```

```

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "Alt[<decisionNumber>] := <alt>";

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions,
 * we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr>)<if(predicates)> and (<predicates>)<endif>) then
begin
  <targetState>
end <! no ; here !>
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
case Input.LA(<k>) of
  <edges; separator="\n">
else
  begin
    <if(eotPredictsAlt)>
      Alt[<decisionNumber>] := <eotPredictsAlt>;
    <else>
      <ruleBacktrackFailure()>
      <@noViableAltException()>
      raise ENoViableAltException.Create('<description>', <decisionNumber>, <stateNumber>, Input);<\n>
    <endif>
  end;
end;<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
case Input.LA(<k>) of
  <edges; separator="\n">
end;<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState)
 ::= <<
case Input.LA(<k>) of
  <edges; separator="\n"><\n>
  <if(eotPredictsAlt)>
else

```

```

Alt[<decisionNumber>] := <eotPredictsAlt>;<\n>
<endif>
end;<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{<it>}; separator=",\n">:
begin
  <targetState>
end;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
Alt[<decisionNumber>] := FDFA<decisionNumber>.Predict(Input);
>>

/* Dump DFA tables.
 */
cyclicDFADeclaration(dfa) ::= <<
strict protected
type
  TDFA<dfa.decisionNumber> = class(TDFA)
  protected
    { IDFA }
    function Description: String; override;
  public
    constructor Create(const ARecognizer: IBaseRecognizer);
  end;
var
  FDFA<dfa.decisionNumber>: IDFA;
<if(dfa.specialStateSTs)>
strict
protected
function DFA<dfa.decisionNumber>_SpecialStateTransition(const DFA: IDFA; S: Integer;
  const AInput: IIntStream): Integer;<endif>
>>

cyclicDFA(dfa) ::= <<
{ T<grammar.recognizerName>.TDFA<dfa.decisionNumber> }

constructor T<grammar.recognizerName>.TDFA<dfa.decisionNumber>.Create(const ARecognizer:
IBaseRecognizer);

```

```

const
DFA<dfa.decisionNumber>_EOT = '<dfa.javaCompressedEOT; wrap=""+\n  "'>;
DFA<dfa.decisionNumber>_EOF = '<dfa.javaCompressedEOF; wrap=""+\n  "'>;
DFA<dfa.decisionNumber>_MIN = '<dfa.javaCompressedMin; wrap=""+\n  "'>;
DFA<dfa.decisionNumber>_MAX = '<dfa.javaCompressedMax; wrap=""+\n  "'>;
DFA<dfa.decisionNumber>_ACCEPT = '<dfa.javaCompressedAccept; wrap=""+\n  "'>;
DFA<dfa.decisionNumber>_SPECIAL = '<dfa.javaCompressedSpecial; wrap=""+\n  "'>;
DFA<dfa.decisionNumber>_TRANSITION: array [0..<length(dfa.javaCompressedTransition)>-1] of String = (
  <dfa.javaCompressedTransition:{s|<s; wrap=""+\n"'>}; separator=",\n">);
begin
  inherited Create;
  Recognizer := ARecognizer;
  DecisionNumber := <dfa.decisionNumber>;
  EOT := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_EOT);
  EOF := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_EOF);
  Min := TDFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_MIN);
  Max := TDFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_MAX);
  Accept := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_ACCEPT);
  Special := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_SPECIAL);
  Transition := TDFA.UnpackEncodedStringArray(DFA<dfa.decisionNumber>_TRANSITION);
end;

function T<grammar.recognizerName>.TDFA<dfa.decisionNumber>.Description: String;
begin
  Result := '<dfa.description>';
end;<\n>
<if(dfa.specialStateSTs)>
function T<grammar.recognizerName>.DFA<dfa.decisionNumber>_SpecialStateTransition(const DFA: IDFA; S:
Integer;
const AInput: IIntStream): Integer;
var
  Locals: TLocalStorage;
  <if(LEXER)>
  Input: IIntStream;
  <endif>
  <if(PARSER)>
  Input: ITokenStream;
  <endif>
  <if(TREE_PARSER)>
  Input: ITreeNodeStream;
  <endif>
  _S: Integer;
  NVAE: ENoViableAltException;
begin
  Result := -1;
  Locals.Initialize;
  try
    <if(LEXER)>

```

```

Input := AInput;
<endif>
<if(PARSER)>
Input := AInput as ITokenStream;
<endif>
<if(TREE_PARSER)>
Input := AInput as ITreeNodeStream;
<endif>
_S := S;
case S of
  <dfa.specialStateSTs:{state | <i0>: begin<! compressed special state numbers 0..n-1 !>
  <state> <\n> end;}; separator="\n">
end;
<if(backtracking)>
if (State.Backtracking > 0) then
begin
  State.Failed := True;
  Exit(-1);
end;<\n>
<endif>
NVAE := ENoViableAltException.Create(DFA.Description, <dfa.decisionNumber>, _S, Input);
DFA.Error(NVAE);
raise NVAE;
finally
  Locals.Finalize;
end;
end;<\n>
<endif>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState)
 ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
Locals.AsInteger['index<decisionNumber>_<stateNumber>'] := Input.Index;
Input.Rewind;<\n>
<endif>
S := -1;
<edges; separator="\nelse ">;
<if(semPredState)> <! return input cursor to state before we rewound !>
Input.Seek(Locals.AsInteger['index<decisionNumber>_<stateNumber>']);<\n>
<endif>
if (S >= 0) then
  Exit(S);
>>

```

```

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr><if(predicates)> and (<predicates><endif>) then
  S := <targetStateNumber>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
S := <targetStateNumber>;<\n>
>>

//
D F A E X P R E S S I O N S

andPredicates(left,right) ::= "((<left>) and (<right>))"

orPredicates(operands) ::= "(<operands:{o|<o>}); separator=\" or \">"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "FLA[<decisionNumber>,<stateNumber>] = <atomAsInt>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "Input.LA(<k>) = <atomAsInt>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
((FLA[<decisionNumber>,<stateNumber>] \>= <lowerAsInt>) and (FLA[<decisionNumber>,<stateNumber>] \<=
<upperAsInt>))
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(Input.LA(<k>) \>=
<lowerAsInt>) and (Input.LA(<k>) \<= <upperAsInt>)"

setTest(ranges) ::= "<ranges; separator=\" or \">"

```

```
// A T T R I B U T E S
```

```
globalAttributeScope(scope) ::= <<  
<scope.name>Stack := TStackList<I<scope.name>Scope>.Create;<\n>  
<endif>  
>>
```

```
globalAttributeScopeDeclaration(scope) ::= <<  
<if(scope.attributes)>  
strict protected  
type  
  I<scope.name>Scope = interface(IANTLRObject)  
  end;  
  T<scope.name>Scope = class(TANTLRObject, I<scope.name>Scope)  
  protected  
    <scope.attributes:{<it.name>: <it.type>;}; separator="\n">  
  end;  
strict protected  
<scope.name>Stack: IStackList<I<scope.name>Scope>;  
<endif>  
>>
```

```
ruleAttributeScopeDeclaration(scope) ::= <<  
<if(scope.attributes)>  
strict protected  
type  
  I<scope.name>Scope = interface(IANTLRObject)  
  end;  
  T<scope.name>Scope = class(TANTLRObject, I<scope.name>Scope)  
  protected  
    <scope.attributes:{<it.name>: <it.type>;}; separator="\n">  
  end;  
strict protected  
<scope.name>Stack: IStackList<I<scope.name>Scope>;  
<endif>  
>>
```

```
ruleAttributeScope(scope) ::= <<  
<! protected Stack <scope.name>Stack = new  
  Stack();<\n> !>  
>>
```

```
ruleAttributeScopeInit(scope) ::= <<  
<if(scope)>  
<scope.name>Stack := TStackList<I<scope.name>Scope>.Create;<\n>  
<endif>  
>>
```

```

returnStructName() ::= "<it.name>_return"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor:returnStructName()>
<! I<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope !>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
<! Pointer/void !>
<endif>
<endif>
>>

/** Generate the C# type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
I<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<csharpTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<label.label.text> := <initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

ruleLabelDefVar(label) ::= <<
<label.label.text>: <ruleLabelType(referencedRule=label.referencedRule)>;

```



```
>>
```

```
/** Define a return struct for a rule if the code needs to access its  
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for  
 * subgroups to stick in members.  
 */
```

```
returnScope(scope) ::= <<  
<if(ruleDescriptor.hasMultipleReturnValues)>  
{ T<ruleDescriptor:returnStructName()> }  
  
<scope.attributes:{public <it.decl>;}; separator="\n">  
<@ruleReturnMembers()>  
<endif>  
>>
```

```
returnScopeDeclaration(scope) ::= <<  
<if(ruleDescriptor.hasMultipleReturnValues)>  
public  
type  
  T<ruleDescriptor:returnStructName()> =  
class(T<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope, I<ruleDescriptor:returnStructName()>)  
  <scope.attributes:{public  
<it.decl>;}; separator="\n">  
  <@ruleReturnMembers()>  
  end;  
<endif>  
>>
```

```
parameterScope(scope) ::= <<  
<scope.attributes:{<it.decl>;}; separator=", ">  
>>
```

```
parameterAttributeRef(attr) ::= "<attr.name>"  
parameterSetAttributeRef(attr,expr) ::= "<attr.name> := <expr>";
```

```
scopeAttributeRef(scope,attr,index,negIndex) ::= <<  
<if(negIndex)>  
(<scope>Stack[<scope>Stack.Count-<negIndex>-1] as T<scope>Scope).<attr.name>  
<else>  
<if(index)>  
(<scope>Stack[<index>] as T<scope>Scope).<attr.name>  
((<scope>_scope)<scope>_stack[<index>]).<attr.name>  
<else>  
(<scope>Stack.Peek.Implementor as T<scope>Scope).<attr.name>  
<endif>  
<endif>  
>>
```

```

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
(<scope>Stack[<scope>Stack.Count-<negIndex>-1] as T<scope>Scope).<attr.name> := <expr>;<\n>
<else>
<if(index)>
(<scope>Stack[<index>] as T<scope>Scope).<attr.name> := <expr>;<\n>
<else>
(<scope>Stack.Peek.Implementor as T<scope>Scope).<attr.name> := <expr>;<\n>
<endif>
<endif>
>>

```

```

/** $x is
either global scope or x is rule with dynamic scope; refers
* to stack itself not top of stack. This is useful for predicates
* like {$function.size()>0 && $function::name.equals("foo")}?
*/
isolatedDynamicScopeRef(scope) ::= "<scope>Stack"

```

```

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(IfThen(Assigned(<scope>),Def(<scope>).<attr.name>,<initValue(attr.type)>))
<else>
<scope>
<endif>
>>

```

```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal.<attr.name>
<else>
<attr.name>
<endif>
>>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal.<attr.name> := <expr>;
<else>
<attr.name> := <expr>;
<endif>
>>

```

```

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */

```

```

listLabelRef(label) ::= "list_<label>"

// not sure the next
// are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(Def(<scope>).Text)"
tokenLabelPropertyRef_type(scope,attr) ::= "(Def(<scope>).TokenType)"
tokenLabelPropertyRef_line(scope,attr) ::= "(Def(<scope>).Line)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(Def(<scope>).CharPositionInLine)"
tokenLabelPropertyRef_channel(scope,attr) ::= "(Def(<scope>).Channel)"
tokenLabelPropertyRef_index(scope,attr) ::= "(Def(<scope>).TokenIndex)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(StrToIntDef(Def(<scope>).Text,0))"

ruleLabelPropertyRef_start(scope,attr) ::= "(IfThen(Assigned(<scope>), Def(<scope>).Start, nil) as I<labelType>)"
ruleLabelPropertyRef_stop(scope,attr) ::= "(Def(<scope>).Stop as I<labelType>)"
ruleLabelPropertyRef_tree(scope,attr) ::= "(Def(Def(<scope>).Tree as I<ASTLabelType>))"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
IfThen(Assigned(<scope>), Input.TokenStream.ToString(
  Input.TreeAdaptor.GetTokenStartIndex(Def(<scope>).Start),
  Input.TreeAdaptor.GetTokenStopIndex(Def(<scope>).Start)), ")
<else>
IfThen(Assigned(<scope>), Input.ToString(
  (Def(<scope>).Start) as IToken,(Def(<scope>).Stop) as IToken), ")
<endif>
>>
ruleLabelPropertyRef_st(scope,attr) ::= "((<scope> != null) ? <scope>.ST : null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "(Def(<scope>).TokenType)"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "(Def(<scope>).Line)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "(IfThen(Assigned(<scope>),Def(<scope>).CharPositionInLine,-1))"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "(Def(<scope>).Channel)"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "(Def(<scope>).TokenIndex)"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "(Def(<scope>).Text)"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "(StrToIntDef(Def(<scope>).Text,0))"

// Somebody may ref $template
// or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "(RetVal.Start as I<labelType>)"
rulePropertyRef_stop(scope,attr) ::= "(RetVal.Stop as I<labelType>)"
rulePropertyRef_tree(scope,attr) ::= "(RetVal.Tree as I<ASTLabelType>)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>

```

```

Input.TokenStream.ToString(
  Input.TreeAdaptor.GetTokenStartIndex(RetVal.Start),
  Input.TreeAdaptor.GetTokenStopIndex(RetVal.Start))
<else>
Input.ToString(RetVal.Start as IToken,Input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "RetVal.ST"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "TokenType"
lexerRulePropertyRef_line(scope,attr) ::= "State.TokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "State.TokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "Channel"
lexerRulePropertyRef_start(scope,attr) ::= "State.TokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr)
::= "(CharIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "StrToInt(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "RetVal.Tree := <expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "RetVal.ST := <expr>;"

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if (<actions.(actionScope).synpredgate>) then
begin
  <action>
end;
<else>
if (State.Backtracking = 0) then
begin
  <action>
end;<\n>
<endif>
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

```

```
// M I S C (properties, etc...)
```

```
bitset(name, words64) ::= <<  
<name> := TBitSet.Create([<words64: {<it>} ; separator="," >]); <n>  
>>
```

```
bitsetDecl(name) ::= <<  
<name>: IBitSet; <n>  
>>
```

```
codeFileExtension() ::= ".pas"
```

```
true()  
::= "True"  
false() ::= "False"
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/codegen/templates/Delphi/Delphi.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
[The "BSD license"]
```

```
Copyright (c) 2006, 2007 Kay Roepke 2010 Alan Condit
```

```
All rights reserved.
```

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*/

/*

* Template group file for the Objective C code generator.

* Heavily based on Java.stg

*

* Written by Kay Roepke <kroepke(at)classdump.org>

* Modified by Alan Condit <acondit(at)ipns.com>

*

* This file is part of ANTLR and subject to the same license as ANTLR itself.

*/

objcTypeInitMap ::= [

"int" : "0", // Integers start out being 0

"long" : "0", // Longs start out being 0

"float"

: "0.0", // Floats start out being 0

"double" : "0.0", // Doubles start out being 0

"BOOL" : "NO", // Booleans start out being Antlr ObjC for false

"byte" : "0", // Bytes start out being 0

"short" : "0", // Shorts start out being 0

"char" : "0", // Chars start out being 0

"id" : "nil", // ids start out being nil

default : "nil" // anything other than an atomic type

]

// System.Boolean.ToString() returns "True" and "False", but the proper C# literals are "true" and "false"

// The Java version of Boolean returns "true" and "false", so they map to themselves here.

booleanLiteral ::= [

"True": "true",

"False": "false",

"true": "YES",

"false": "NO",

default: "NO"

]

className() ::= "<name><!<if(LEXER)>Lexer<else><if(TREE_PARSER)>Tree<endif>Parser<endif>!>"

leadIn(type)

::=

<<

/** \file

* This <type> file was generated by \$ANTLR version <ANTLRVersion>

*

* - From the grammar source file : <fileName>

* - On : <generatedTimestamp>

<if(LEXER)>

```

* -          for the lexer : <name>Lexer
<endif>
<if(PARSER)>
* -          for the parser : <name>Parser
<endif>
<if(TREE_PARSER)>
* -          for the tree parser : <name>TreeParser
<endif>
*
* Editing it, at least manually, is not wise.
*
* ObjC language generator and runtime by Alan Condit, acondit|hereisanat|ipns|dotgoeshere|com.
*
*
>>

/** The overall file structure of a recognizer; stores methods for rules
* and cyclic DFAs plus support code.
*/
outputFile( LEXER,
            PARSER,
            TREE_PARSER,
            actionScope,
            actions,
            docComment,
            recognizer,
            name,
            tokens,
            tokenNames,
            rules,
            cyclicDFAs,
            bitsets,
            buildTemplate,
            buildAST,
            rewriteMode,
            profile,
            backtracking,
            synpreds,
            memoize,
            numRules,
            fileName,
            ANTLRVersion,
            generatedTimestamp,
            trace,
            scopes,
            superClass,
            literals
) ::=

```

```

<<
<leadIn("OBJC source")>
*/
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<! <if(actions.(actionScope).header)>
/* =====
* This is what the grammar programmer asked us to put at the top of every file.
*/
<actions.(actionScope).header>
/* End of Header action.
* =====
*/
<endif> !>

/* -----
* Include the ANTLR3 generated header file.
*/
#import "<name><!<if(LEXER)>Lexer<else><if(TREE_PARSER)>Tree<endif>Parser<endif>!>.h"
<actions.(actionScope).postinclude>
/*
----- */

<docComment>

<if(literals)>
/** String literals used by <name> that we must do things like MATCHS() with.
* C will normally just lay down 8 bit characters, and you can use L"xxx" to
* get wchar_t, but wchar_t is 16 bits on Windows, which is not UTF32 and so
* we perform this little trick of defining the literals as arrays of UINT32
* and passing in the address of these.
*/
<literals:{it | static ANTLR3_UCHAR lit_<i>[] = <it>;}; separator="\n">

<endif>

/* ===== */
/* ===== */
* Start of recognizer
*/
<recognizer>
>>
headerFileExtension() ::= ".h"

headerFile( LEXER,
            PARSER,
            TREE_PARSER,
            actionScope,

```



```

    actions,
    docComment,
    recognizer,
    name,
    tokens,

tokenNames,
    rules,
    cyclicDFAs,
    bitsets,
    buildTemplate,
    buildAST,
    rewriteMode,
    profile,
    backtracking,
    synpreds,
    memoize,
    numRules,
    fileName,
    ANTLRVersion,
    generatedTimestamp,
    trace,
    scopes,
    superClass,
    literals
) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<@imports>
<actions.(actionScope).preincludes>
/* =====
* Standard antlr OBJC runtime definitions
*/
#import \<Cocoa/Cocoa.h>
#import \<ANTLR/ANTLR.h>
/* End of standard antlr3 runtime definitions
* =====
*/
<actions.(actionScope).includes>
<@end>

<if(LEXER)>
<lexerHeaderFile(...)>
<endif>
<if(PARSER)>
<parserHeaderFile(...)>
<endif>

```

```
<if(TREE_PARSER)>
<treeParserHeaderFile(...)>
<endif>
<docComment>
>>
```

```
lexerHeaderFile(
LEXER,
    PARSER,
    TREE_PARSER,
    actionScope,
    actions,
    docComment,
    recognizer,
    name,
    tokens,
    tokenNames,
    rules,
    cyclicDFAs,
    bitsets,
    buildTemplate,
    profile,
    backtracking,
    synpreds,
    memoize,
    numRules,
    fileName,
    ANTLRVersion,
    generatedTimestamp,
    trace,
    scopes,
    superClass="Lexer"
) ::=
<<
```

```
<if(actions.(actionScope).header)>
```

```
/* =====
* This is what the grammar programmer asked us to put at the top of every file.
*/
```

```
<actions.(actionScope).header>
```

```
/* End of Header action.
```

```
/* =====
*/
```

```
<endif>
```

```
/* Start cyclicDFAInterface */
```

```
<cyclicDFAs:cyclicDFAInterface()>
```

```

#pragma mark Rule return scopes Interface start
<rules:{rule |
<rule.ruleDescriptor:{ruleDescriptor | <returnScopeInterface(scope=ruleDescriptor.returnScope)>>>>
#pragma mark Rule return scopes Interface end
#pragma mark Tokens
#ifndef TOKENLISTAlreadyDefined
#define TOKENLISTAlreadyDefined 1
#ifdef EOF
#undef EOF
#endif
<tokens:{it | #define <it.name> <it.type>}; separator="\n">
#endif
/* interface lexer class */
@interface <className()> <@superClassName>: <superClass><@end> { // line 283
<cyclicDFAs:{dfa | DFA<dfa.decisionNumber> *dfa<dfa.decisionNumber>;}; separator="\n">
<synpreds:{pred | SEL <pred>Selector;}; separator="\n">
/* ObjC start of actions.lexer.memVars */
<actions.lexer.memVars>
/* ObjC end of actions.lexer.memVars */
}
+ (void) initialize;
+ (<className()> *)new<className()>WithCharStream:(id<CharStream>)anInput;
/* ObjC start actions.lexer.methodsDecl */
<actions.lexer.methodsDecl>
/* ObjC
end actions.lexer.methodsDecl */
<rules:{rule |
- (<rule.ruleDescriptor:{ruleDescriptor|<returnType()>>>)
<if(!rule.ruleDescriptor.isSynPred)>m<rule.ruleName><else><rule.ruleName>_fragment<endif>
<if(rule.ruleDescriptor.parameterScope)><rule.ruleDescriptor.parameterScope:parameterScope()><endif>; };
separator="\n"><\n>
@end /* end of <className()> interface */<\n>
>>

headerReturnScope(ruleDescriptor) ::= "<returnScopeInterface(...)>"
headerReturnType(ruleDescriptor) ::= <<
<if(LEXER)>
<if(!r.ruleDescriptor.isSynPred)>
void
<else>
<ruleDescriptor:returnType()>
<endif>
<else>
<ruleDescriptor:returnType()>
<endif>
>>
// Produce the lexer output
lexer( grammar,

```

```

    name,
    tokens,
    scopes,
    rules,
    numRules,
    filterMode,
    labelType="CommonToken",
    superClass="Lexer"
) ::= <<
<cyclicDFAs:cyclicDFA(>

/** As per Terence: No returns for lexer rules! */
<!
#pragma mark Rule return scopes start
<rules:{rule | <rule.ruleDescriptor:{ruleDescriptor
|
<returnScopeImplementation(scope=ruleDescriptor.returnScope)>>
}>
#pragma mark Rule return scopes end
!>
@implementation <grammar.recognizerName> // line 330

+ (void) initialize
{
    [BaseRecognizer setGrammarFileName:@"<fileName>"];
}

+ (NSString *) tokenNameForType:(NSInteger)aTokenType
{
    return [[self getTokenNames] objectAtIndex:aTokenType];
}

+ (<grammar.recognizerName> *)new<grammar.recognizerName>WithCharStream:(id<CharStream>)anInput
{
    return [[<grammar.recognizerName> alloc] initWithCharStream:anInput];
}

- (id) initWithCharStream:(id<CharStream>)anInput
{
    self = [super initWithCharStream:anInput State:[RecognizerSharedState
newRecognizerSharedStateWithRuleLen:<numRules>+1]];
    if ( self != nil ) {
<if(memoize)>
        if ( state.ruleMemo == nil ) {
            state.ruleMemo = [[RuleStack newRuleStackWithSize:<numRules>+1] retain];
        }
        if ( [state.ruleMemo count] == 0 ) {
            // initialize the memoization cache

```

```

- the indices are 1-based in the runtime code!
    <! [state.ruleMemo addObject:[NSNull null]]; /* dummy entry to ensure 1-basedness. */ !>
    for (NSUInteger i = 0; i \< <numRules>; i++) {
        [state.ruleMemo addObject:[HashRule newHashRuleWithLen:17]];
    }
}
<endif>
    <synpreds:{ pred | <lexerSynpred(name=pred)>};separator="\n">
    <cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = [DFA<dfa.decisionNumber>
newDFA<dfa.decisionNumber>WithRecognizer:self];}; separator="\n">
    <actions.lexer.init>
}
return self;
}

- (void) dealloc
{
    <cyclicDFAs:{ dfa | [dfa<dfa.decisionNumber> release];}; separator="\n">
<actions.lexer.dealloc>
    [super dealloc];
}

/* ObjC Start of actions.lexer.methods */
<actions.lexer.methods>
/* ObjC end of actions.lexer.methods */
/* ObjC start methods() */
<@methods()>
/* ObjC end methods() */

<if(actions.lexer.reset)>
- (void) reset
{
    <actions.lexer.reset>
    [super reset];
}
<endif>

<if(filterMode)>
<filteringNextToken()>
<endif>
/*
Start of Rules */
<rules; separator="\n">

@end /* end of <grammar.recognizerName> implementation line 397 */
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking

```

- * for matches. No error can be generated upon error; just rewind, consume
- * a token and then try again. backtracking needs to be set as well.
- * Make rule memoization happen only at levels above 1 as we start mTokens
- * at backtracking==1.

*/

filteringNextToken() ::= <<

- (id\<Token>) nextToken

{

while (YES) {

if ([input LA:1] == CharStreamEOF) {

return [<labelType> eofToken];

}

state.token = nil;

state.channel = TokenChannelDefault;

state.tokenStartCharIndex = input.index;

state.tokenStartCharPositionInLine = input.charPositionInLine;

state.tokenStartLine = input.line;

state.text = nil;

@try {

NSInteger m = [input mark];

state.backtracking

= 1; /* means we won't throw slow exception */

state.failed = NO;

[self mTokens];

state.backtracking = 0;

/* mTokens backtracks with synpred at backtracking==2

and we set the synpredgate to allow actions at level 1. */

if (state.failed) {

[input rewind:m];

[input consume]; /* advance one char and try again */

} else {

[self emit];

return state.token;

}

}

@catch (RecognitionException *re) {

// shouldn't happen in backtracking mode, but...

[self reportError:re];

[self recover:re];

}

}

}

- (void)memoize:(id\<IntStream\>)anInput

RuleIndex:(NSInteger)ruleIndex

StartIndex:(NSInteger)ruleStartIndex

{

if (state.backtracking > 1) [super memoize:anInput RuleIndex:ruleIndex StartIndex:ruleStartIndex];

```

}

- (BOOL)alreadyParsedRule:(id)<IntStream>anInput
  RuleIndex:(NSInteger)ruleIndex
{
    if ( state.backtracking > 1 ) return [super alreadyParsedRule:anInput RuleIndex:ruleIndex];
    return NO;
}
>>

```

```

actionGate() ::= "state.backtracking == 0"

```

```

filteringActionGate() ::= "state.backtracking == 1"

```

```

parserHeaderFile( LEXER,
    PARSER,
    TREE_PARSER,
    actionScope,
    actions,
    docComment,
    recognizer,
    name,
    tokens,
    tokenNames,
    rules,
    cyclicDFAs,
    bitsets,
    buildTemplate,
    profile,
    backtracking,
    synpreds,
    memoize,
    numRules,
    fileName,
    ANTLRVersion,
    generatedTimestamp,
    trace,
    scopes,
    literals,
    superClass="Parser"
) ::= <<
/* parserHeaderFile */
<genericParserHeaderFile(inputStreamType="id"<TokenStream>"...>
>>

```

```

treeParserHeaderFile(
    LEXER,
    PARSER,

```

```

TREE_PARSER,
actionScope,
actions,
docComment,
recognizer,
name,
tokens,
tokenNames,
rules,
cyclicDFAs,
bitsets,
buildTemplate,
profile,
backtracking,
synpreds,
memoize,
numRules,
fileName,
ANTLRVersion,
generatedTimestamp,
trace,
scopes,
literals,
superClass="TreeParser"
) ::= <<
/* treeParserHeaderFile */
<genericParserHeaderFile(inputStreamType="id\<TreeNodeStream>",...)>
>>

```

```

genericParserHeaderFile( LEXER,
    PARSEr,
    TREE_PARSER,
    actionScope,
    actions,
    docComment,
    recognizer,
    name,
    tokens,
    tokenNames,
    rules,
    cyclicDFAs,
    bitsets,
    buildTemplate,
    profile,
    backtracking,
    synpreds,
    memoize,
    numRules,

```



```

        fileName,
        ANTLRVersion,
        generatedTimestamp,
        trace,
        scopes,
        superClass,
        literals,
        inputStreamType
    ) ::=
<<
<if(actions.(actionScope).header)>
/* =====
* This is what the grammar programmer asked us to put at the top of every file.
*/
<actions.(actionScope).header>
/* End of Header action.
* =====
*/
<endif>

#ifndef ANTLR3TokenTypeAlreadyDefined
#define ANTLR3TokenTypeAlreadyDefined
typedef enum {
    ANTLR_EOF = -1,
    INVALID,
    EOR,
    DOWN,
    UP,
    MIN
} ANTLR3TokenType;
#endif

<cyclicDFAs:cyclicDFAInterface(>
#pragma mark Tokens
#ifndef TOKENLISTAlreadyDefined
#define TOKENLISTAlreadyDefined
    1
#endif
#ifndef EOF
#define EOF
#endif
<tokens:{it | #define <it.name> <it.type>}; separator="\n">
#endif
#pragma mark Dynamic Global Scopes globalAttributeScopeInterface
<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScopeInterface(scope=it)><endif>}>
#pragma mark Dynamic Rule Scopes ruleAttributeScopeInterface
<rules:{rule |
<rule.ruleDescriptor:{ ruleDescriptor | <ruleAttributeScopeInterface(scope=ruleDescriptor.ruleScope)>>>}>
#pragma mark Rule Return Scopes returnScopeInterface

```

```

<rules:{rule |<rule.ruleDescriptor:{ ruleDescriptor |
<returnScopeInterface(scope=ruleDescriptor.returnScope)>>>>

/* Interface grammar class */
@interface <className()> <@superClassName> : <superClass><@end> { /* line 572 */
#pragma mark Dynamic Rule Scopes ruleAttributeScopeDecl
<rules:{rule | <rule.ruleDescriptor.ruleScope:ruleAttributeScopeDecl(scope=rule.ruleDescriptor.ruleScope)>>>
#pragma mark Dynamic Global Rule Scopes globalAttributeScopeMemVar
<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScopeMemVar(scope=it)><endif>><\n>
/*
ObjC start of actions.(actionScope).memVars */
<actions.(actionScope).memVars>
/* ObjC end of actions.(actionScope).memVars */
/* ObjC start of memVars */
<@memVars()>
/* ObjC end of memVars */

<cyclicDFAs:{ dfa | DFA<dfa.decisionNumber> *dfa<dfa.decisionNumber>;}; separator="\n">
<synpreds:{ pred | SEL <pred>Selector;}; separator="\n">
}

/* ObjC start of actions.(actionScope).properties */
<actions.(actionScope).properties>
/* ObjC end of actions.(actionScope).properties */
/* ObjC start of properties */
<@properties()>
/* ObjC end of properties */

+ (void) initialize;
+ (<className()> *) new<className()>:(<inputStreamType>)aStream;
/* ObjC start of actions.(actionScope).methodsDecl */
<actions.(actionScope).methodsDecl>
/* ObjC end of actions.(actionScope).methodsDecl */

/* ObjC start of methodsDecl */
<@methodsDecl()>
/* ObjC end of methodsDecl */

<rules:{rule |
-
(<rule.ruleDescriptor:{ ruleDescriptor|<returnType()>>)<if(!rule.ruleDescriptor.isSynPred)><rule.ruleName><else
><rule.ruleName>_fragment<endif><if(rule.ruleDescriptor.parameterScope)><rule.ruleDescriptor.parameterScope:
parameterScope()><endif>;
}; separator="\n"><\n>

@end /* end of <className()> interface */<\n>
>>

```

```

parser( grammar,
    name,
    scopes,
    tokens,
    tokenNames,
    rules,
    numRules,
    bitsets,
    ASTLabelType="CommonTree",
    superClass="Parser",
    labelType="CommonToken",
    members={<actions.parser.members>}
) ::= <<
<genericParser(inputStreamType="id<TokenStream>", rewriteElementType="Token", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser( grammar,
    name,
    scopes,
    tokens,
    tokenNames,
    globalAction,
    rules,
    numRules,
    bitsets,
    filterMode,
    labelType={<ASTLabelType>},
    ASTLabelType="CommonTree",
    superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif> },
    members={<actions.treeparser.members>}
) ::= <<
<genericParser(inputStreamType="id<TreeNodeStream>", rewriteElementType="Node", ...)>
>>

/** How to generate a parser */
genericParser( grammar,
    name,
    scopes,
    tokens,
    tokenNames,
    rules,
    numRules,
    cyclicDFAs,    // parser init -- initializes the DFAs
    bitsets,
    labelType,

```

```

    ASTLabelType,
    superClass,
    members,
    filterMode,
    rewriteElementType,
    inputStreamType
  ) ::= <<
<cyclicDFAs:cyclicDFA()>

#pragma mark Bitsets
<bitsets:{it | <bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>>>>

#pragma mark Dynamic Global globalAttributeScopeImplementation
<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScopeImplementation(scope=it)><endif>>>>

#pragma mark Dynamic
Rule Scopes ruleAttributeScopeImplementation
<rules:{rule |
<rule.ruleDescriptor:{ ruleDescriptor | <ruleAttributeScopeImplementation(scope=ruleDescriptor.ruleScope)>>>>>

#pragma mark Rule Return Scopes returnScopeImplementation
<rules:{rule | <rule.ruleDescriptor:{ ruleDescriptor |
<returnScopeImplementation(scope=ruleDescriptor.returnScope)>>>>>

@implementation <grammar.recognizerName> // line 637

/* ObjC start of ruleAttributeScope */
#pragma mark Dynamic Rule Scopes ruleAttributeScope
<rules:{rule | <rule.ruleDescriptor.ruleScope:ruleAttributeScope()>>>
/* ObjC end of ruleAttributeScope */
#pragma mark global Attribute Scopes globalAttributeScope
/* ObjC start globalAttributeScope */
<scopes:{it | <if(it.isDynamicGlobalScope)><globalAttributeScope()><endif>>>
/* ObjC end globalAttributeScope */
/* ObjC start actions.(actionScope).synthesize */
<actions.(actionScope).synthesize>
/* ObjC start synthesize() */
<@synthesize()>

+ (void) initialize
{
  #pragma mark Bitsets

  <bitsets:{it | <bitsetInit(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>>>
  [BaseRecognizer setTokenNames:[NSMutableArray arrayWithObjects:@"\<invalid>", @"\<EOR>",
@"\<DOWN>", @"\<UP>", <tokenNames:{it | @<it>}; separator=", ", wrap="\n", nil] retain]];
  [BaseRecognizer setGrammarFileName:@<fileName>];
  <synpreds:{pred | <synpred(pred)>>>

```

```

}

+ (<grammar.recognizerName> *)new<grammar.recognizerName>:(<inputStreamType>)aStream
{
<if(PARSER)>
    return [[<grammar.recognizerName> alloc] initWithTokenStream:aStream];
<else><! TREE_PARSER !>
    return [[<grammar.recognizerName> alloc] initWithStream:aStream];
<endif>
}

<if(PARSER)>
- (id) initWithTokenStream:(<inputStreamType>)aStream
{
    self = [super initWithTokenStream:aStream State:[[RecognizerSharedState
newRecognizerSharedStateWithRuleLen:<numRules>+1] retain]];
    if ( self != nil ) {
<else><! TREE_PARSER !>
- (id) initWithStream:(<inputStreamType>)aStream
{
    self = [super initWithStream:aStream
State:[[RecognizerSharedState newRecognizerSharedStateWithRuleLen:<numRules>+1] retain]];
    if ( self != nil ) {
<endif>
        <! <parserCtorBody()> !>
        <cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = [DFA<dfa.decisionNumber>
newDFA<dfa.decisionNumber>WithRecognizer:self];}; separator="\n">
        <scopes:{ it | <if(it.isDynamicGlobalScope)><globalAttributeScopeInit(scope=it)><endif> }>
        <rules:{ rule | <rule.ruleDescriptor.ruleScope:ruleAttributeScopeInit()> }>
        /* start of actions-actionScope-init */
        <actions.(actionScope).init>
        /* start of init */
        <@init()>
    }
    return self;
}

- (void) dealloc
{
    <cyclicDFAs:{ dfa | [dfa<dfa.decisionNumber> release];}; separator="\n">
    <scopes:{ it | <if(it.isDynamicGlobalScope)><globalAttributeScopeDealloc(scope=it)><endif> }>
    <actions.(actionScope).dealloc>
    <@dealloc()>
    [super dealloc];
}

/* ObjC start actions.(actionScope).methods */
<actions.(actionScope).methods>

```

```

/* ObjC
end actions.(actionScope).methods */
/* ObjC start methods() */
<@methods()>
/* ObjC end methods() */
/* ObjC start rules */
<rules; separator="\n">
/* ObjC end rules */

@end /* end of <grammar.recognizerName> implementation line 692 */<\n>
>>

parserCtorBody() ::= <<
<if(memoize)> /* parserCtorBody */
<if(grammar.grammarIsRoot)>
state.ruleMemo = [[RuleStack newRuleStack:<numRules>+1] retain];<\n> <! index from 1..n !>
<endif>
<endif>
<grammar.delegators:
{g|this.<g:delegateName()> = <g:delegateName()>;}; separator="\n">
>>

/** A simpler version of a rule template that is specific to the imaginary
* rules created for syntactic predicates. As they never have return values
* nor parameters etc..., just give simplest possible method. Don't do
* any of the normal memoization stuff in here either; it's a waste.
* As predicates cannot be inlined into the invoking rule, they need to
* be in a rule by themselves.
*/
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock)
::=
<<
// $ANTLR start <ruleName>_fragment
- (void) <ruleName>_fragment
{
  <ruleLabelDefs()>
  <if(trace)>
    [self traceIn:@"<ruleName>_fragment" Index:<ruleDescriptor.index>];
    @try {
      <block>
    }
    @finally {
      [self traceOut:@"<ruleName>_fragment" Index:<ruleDescriptor.index>];
    }
  <else>
    <block>
  <endif>
} // $ANTLR end <ruleName>_fragment

```

>>

```
synpred(name) ::= <<
SEL <name>Selector = @selector(<name>_fragment);
<! // $ANTLR start <name>
- (BOOL) <name>
{
    state.backtracking++;
    <@start(>
    NSInteger start = [input mark];
    @try {
        [self <name>_fragment]; // can never throw exception
    }
    @catch (RecognitionException *re) {
        NSLog(@"impossible: %@\n", re.name);
    }
    BOOL success = (state.failed == NO);
    [input rewind:start];
    <@stop(>
    state.backtracking--;
    state.failed=NO;
    return success;
} // $ANTLR end <name> <\n> !>
>>
```

```
lexerSynpred(name) ::= <<
<synpred(name)>
>>
```

```
ruleMemoization(name)
::= <<
<if(memoize)>
if ( state.backtracking > 0 && [self alreadyParsedRule:input RuleIndex:<ruleDescriptor.index>] ) { return
<ruleReturnValue(>; }
<endif>
>>
```

```
/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if (backtracking)>if ( state.failed ) return <ruleReturnValue(>;<endif>
>>
```

```
/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if ( state.backtracking > 0 ) { state.failed = YES; return <ruleReturnValue(>; }<\n><endif>
>>
```

```
/** How to generate code for a rule.
```

```

* The return type aggregates are declared in the header file (headerFile template)
*/
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<

/*
* $ANTLR start <ruleName>
* <fileName>:<description>
*/
- (<returnType(>) <ruleName><ruleDescriptor.parameterScope:parameterScope(>)
{
  <if(trace)>[self traceIn:\@"<ruleName>" Index:<ruleDescriptor.index>];<endif>
  <if(trace)>NSLog(@"enter
<ruleName> %@ failed=%@ backtracking=%d", [input LT:1], (state.failed==YES)?@"YES":@"NO",
state.backtracking);<endif>
  <ruleScopeSetUp(>
  <ruleDeclarations(>
  <ruleDescriptor.actions.init>
  <@preamble(>
  @try {
    <ruleMemoization(name=ruleName)>
    <ruleLabelDefs(>
    <block>
    <ruleCleanUp(>
    <(ruleDescriptor.actions.after):execAction(>
  }
  <if(exceptions)>
    <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n}>
  <else><if(!emptyRule)><if(actions.(actionScope).rulecatch)>
    <actions.(actionScope).rulecatch>
  <else>
    @catch (RecognitionException *re) {
      [self reportError:re];
      [self recover:input Exception:re];
      <@setErrorReturnValue(>
    }<\n>
  <endif><endif><endif>
  @finally {
    <if(trace)>[self traceOut:@@"<ruleName>" Index:<ruleDescriptor.index>];<endif>
    <memoize(>
    <ruleScopeCleanUp(>
    <finally>
  }
  <@postamble(>
  return <ruleReturnValue(>;
}
/*
$ANTLR end <ruleName> */
>>

```



```

finalCode(finalBlock) ::= <<
{
  <finalBlock>
}
>>

catch(decl,action) ::= <<
@catch (<e.decl>) {
  <e.action>
}
>>

ruleDeclarations() ::= <<
/* ruleDeclarations */
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType> retval = [<ruleDescriptor:returnStructName()> new<ruleDescriptor:returnStructName()>];
[retval setStart:[input LT:1]];<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
NSInteger <ruleDescriptor.name>_startIndex = input.index;
<endif>
>>

ruleScopeSetUp() ::= <<
/* ruleScopeSetUp */
<ruleDescriptor.useScopes: { it | [<it>_stack push:[<it>_Scope new<it>_Scope]];}>
<ruleDescriptor.ruleScope: { it | [<it.name>_stack push:[<it.name>_Scope new<it.name>_Scope]];}>
>>

ruleScopeCleanUp() ::= <<
/* ruleScopeCleanUp */
<ruleDescriptor.useScopes: { it | [<it>_stack pop];}; separator="\n">
<ruleDescriptor.ruleScope: { it | [<it.name>_stack
pop];}; separator="\n">
>>

ruleLabelDefs() ::= <%
/* ruleLabelDefs entry */<\n">
<[ruleDescriptor.tokenLabels, ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: { it | <labelType> *<it.label.text> = nil;}; separator="\n"><\n">
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: { it | AMutableArray *list_<it.label.text> = nil;}; separator="\n"><\n">

```

```

<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n"><"\n">
<ruleDescriptor.ruleListLabels:{|l|ParserRuleReturnScope *<l.label.text> = nil;}; separator="\n"><"\n">
%>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it |<labelType> *<it.label.text>=nil;}; separator="\n"
>
<ruleDescriptor.charLabels:{|NSInteger <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]:{it |AMutableArray
*list_<it.label.text>=nil; }; separator="\n">
>>

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
%>

ruleCleanUp() ::= <<
/* token+rule list labels */
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]:{it |[list_<it.label.text> release];}; separator="\n">
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
[retval setStop:[input LT:-1]];<\n>
<endif><endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking > 0) [self memoize:input RuleIndex:<ruleDescriptor.index>
StartIndex:<ruleDescriptor.name>_StartIndex];
<endif><endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
* fragment rules.
*/

```

```

lexerRule(ruleName, nakedBlock, ruleDescriptor, block, memoize) ::= <<
// $ANTLR start "<ruleName>"
- (void)
m<ruleName><if(ruleDescriptor.parameterScope)><ruleDescriptor.parameterScope:parameterScope(scope=it)><en
dif>
{
  //<if(trace)>[self traceIn:\@"<ruleName>" Index:<ruleDescriptor.index>];<endif>
  <if(trace)>NSLog(@"enter <ruleName> %C line=%d:%d failed=%@ backtracking=%d",
    [input LA:1],
    self.line,
    self.charPositionInLine,
    (state.failed==YES) ? @"YES" : @"NO",
    state.backtracking);
  <endif>
  <ruleScopeSetUp()>
  <ruleDeclarations()>
  @try {
<if(nakedBlock)>
  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  <block><\n>
<else>
  NSInteger _type = <ruleName>;
  NSInteger _channel = TokenChannelDefault;
  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  <block>
  <ruleCleanUp()>
  state.type = _type;
  state.channel = _channel;
  <(ruleDescriptor.actions.after):execAction()>
<endif>
  }
  @finally {

  //<if(trace)>[self traceOut:[NSString stringWithFormat:@"<ruleName> %d\n", <ruleDescriptor.index>]];<endif>
  <if(trace)>NSLog(@"exit <ruleName> %C line=%d:%d failed=%@ backtracking=%d",
    [input LA:1], self.line, self.charPositionInLine,
    (state.failed==YES) ? @"YES" : @"NO", state.backtracking);<endif>
  <ruleScopeCleanUp()>
  <memoize()>
  }
  return;
}
/* $ANTLR end "<ruleName>" */
>>

```

```

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
- (void) mTokens
{
  <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description> // block
NSInteger alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>)
{
  <alts:{ a | <altSwitchCase(i, a)>}>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description> // ruleblock
NSInteger alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
  <alts:{ a | <altSwitchCase(i, a)>}>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description> // ruleBlockSingleAlt
<decls>
<@prealt()>
<alts>
<@postalt()>

```

>>

*/** A special case of a (...) subrule with a single alternative */*

blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<

// <fileName>:<description> // blockSingleAlt

<decls>

<@prealt()>

<alts>

<@postalt()>

>>

*/** A (..)+ block with 1 or more alternatives */*

positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description)

n)

::= <<

// <fileName>:<description> // positiveClosureBlock

NSInteger cnt<decisionNumber> = 0;

<decls>

<@preloop()>

do {

 NSInteger alt<decisionNumber> = <maxAlt>;

 <@predecision()>

 <decision>

 <@postdecision()>

 switch (alt<decisionNumber>) {

 <alts:{a | <altSwitchCase(i, a)>}>

 default :

 if (cnt<decisionNumber> >= 1)

 goto loop<decisionNumber>;

 <ruleBacktrackFailure()>

 EarlyExitException *eee =

 [EarlyExitException newException:input decisionNumber:<decisionNumber>];

 <@earlyExitException()>

 @throw eee;

 }

 cnt<decisionNumber>++;

 } while (YES);

loop<decisionNumber>: ;

<@postloop()>

>>

positiveClosureBlockSingleAlt ::= positiveClosureBlock

*/** A (..)* block with 0 or more alternatives */*

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=

<<

<decls>

<@preloop()>

```

do {
    NSInteger alt<decisionNumber>=<maxAlt>;
    <@predecision()>
    <decision>
    <@postdecision()>
    switch (alt<decisionNumber>) {
        <alts:{ a | <altSwitchCase(i, a)>}>
        default :
            goto loop<decisionNumber>;
    }
} while (YES);
loop<decisionNumber>; ;
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum, alt) ::= <<
case <altNum> : ;
    <@prealt()>
    <alt>
    break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew)
::= <<
// <fileName>:<description> // alt
{
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build

```

```

* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(e) ::= << <@prematch(><\n><e.el><\n> >>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions) ::= <<
<if(label)><label>=(<labelType> *)<endif>[self match:input TokenType:<token>
Follow:FOLLOW_<token>_in_<ruleName><elementIndex>]; <checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label> == nil) list_<label> = [[AMutableArray arrayWithCapacity:5] retain];
[list_<label> addObject:<elem>];<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>NSInteger <label> =
[input LA:1];<\n><endif>
[self matchChar:<char>]; <checkRuleBacktrackFailure(><\n>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)><label> = [input LA:1];<\n><endif>
[self matchRangeFromChar:<a> to:<b>]; <checkRuleBacktrackFailure(>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,terminalOptions,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label> = [input LA:1];<\n>
<else>
<label> = (<labelType> *)[input LT:1]; /* matchSet */<\n>
<endif><endif>
if (<s>) {

```

```

    [input consume];
    <postmatchCode>
<if(!LEXER)>
    [state setIsErrorRecovery:NO];
<endif>
    <if(backtracking)>state.failed = NO;<\n><endif>
} else {
    <ruleBacktrackFailure()>
    MismatchedSetException *mse = [MismatchedSetException newException:nil stream:input];
    <@mismatchedSetException()>
<if(LEXER)>
<if(label)>
    mse.c = <label>;
<endif>
    [self recover:mse];
    @throw mse;
<else>
    @throw mse;
    <! use following code to
make it recover inline; remove throw mse;
    [self recoverFromMismatchedSet:input exception:mse follow:FOLLOW_set_in_<ruleName><elementIndex>]; !>
<endif>
}<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a string literal */
lexerStringRef(string,label,elementIndex="0") ::= <<
<if(label)>
NSInteger <label>Start = input.index;
[self matchString:<string>]; <checkRuleBacktrackFailure()>
NSInteger StartLine<elementIndex> = self.line;
NSInteger <label>StartCharPos<elementIndex> = self.charPositionInLine;
<label> = [[<labelType> newToken:input Type:TokenTypeInvalid Channel:TokenChannelDefault
Start:<label>Start Stop:input.index] retain];
[self setLine:<label>StartLine<elementIndex>];
[self setCharPositionInLine:<label>StartCharPos<elementIndex>];
<else>
[self matchString:<string>]; <checkRuleBacktrackFailure()><\n>
<endif>
>>

```



```
wildcard(token,label,elementIndex,terminalOptions)
 ::= <<
 <if(label)>
 <label> = (<labelType> *)[input LT:1];<\n>
 <endif>
 [self matchAny:input]; <checkRuleBacktrackFailure()>
 >>
```

```
wildcardAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
 <wildcard(...)>
 <listLabel(elem=label,...)>
 >>
```

```
/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
 <if(label)>
 NSInteger <label> = [input LA:1];<\n>
 <endif>
 [self matchAny]; <checkRuleBacktrackFailure()><\n>
 >>
```

```
wildcardCharListLabel(label, elementIndex) ::= <<
 <wildcardChar(...)>
 <listLabel(elem=label,...)>
 >>
```

```
/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
 /* ruleRef */
 [self pushFollow:FOLLOW_<rule.name>_in_<ruleName><elementIndex>];
 <if(label)><label> = <endif>[self <if(scope)><scope:delegateName()>.<endif><rule.name><if(args)>:<first(args)>
 <rest(args):{ a | arg<i>:<rest(args)>}; separator=" "><endif>];<\n>
 [self popFollow];
 <checkRuleBacktrackFailure()><\n>
 >>
```

```
/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRef(...)>
 <listLabel(elem=label,...)>
 >>
```

```
/** A lexer rule reference.
```

```

*
* The 'rule' argument was the target rule name, but now
* is type Rule, whose toString is same: the rule name.
* Now though you can access full rule descriptor stuff.
*/
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
NSInteger <label>Start<elementIndex> = input.index;
[self m<rule.name><if(args)>:<args; separator=" :"><endif>]; <checkRuleBacktrackFailure()><\n>
<label> = [[<labelType> newToken:input Type:TokenTypeInvalid Channel:TokenChannelDefault
Start:<label>Start<elementIndex> Stop:input.index-1] retain];
<label>.line = self.line;
<else>
[self <if(scope)><scope:delegateName()>.<endif>m<rule.name><if(args)>:<args; separator="
:"><endif>]; <checkRuleBacktrackFailure()><\n>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
NSInteger <label>Start<elementIndex> = input.index;
[self matchChar:CharStreamEOF]; <checkRuleBacktrackFailure()><\n>
<labelType> <label> = [[<labelType> newToken:input Type:TokenTypeEOF Channel:TokenChannelDefault
Start:<label>Start<elementIndex> Stop:input.index-1] retain];
<label>.line = self.line;
<else>
[self matchChar:CharStreamEOF]; <checkRuleBacktrackFailure()><\n>
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction() ::= "root_0=${<ruleName>}_primary.tree;"
recRuleSetReturnAction(src,name) ::=
"${<name>}=${<src>}.<name>;"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList, enclosingTreeLevel, treeLevel) ::= <<
<root:element()>

```

```

<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( [input LA:1] == DOWN ) {
  [self match:input TokenType:DOWN Follow:nil]; <checkRuleBacktrackFailure()>
  <children:element()>
  [self match:input TokenType:UP Follow:nil]; <checkRuleBacktrackFailure()>
}
<else>
  [self match:input TokenType:DOWN Follow:nil]; <checkRuleBacktrackFailure()>
  <children:element()>
  [self match:input TokenType:UP Follow:nil]; <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if ( !( <evalPredicate(...)> ) ) {
  <ruleBacktrackFailure()>
  @throw [FailedPredicateException newException:@ "<ruleName>" predicate:@ "<description>" stream:input];
}
>>

//
F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
NSInteger LA<decisionNumber>_<stateNumber> = [input LA:<k>];<\n>
<edges; separator="\nelse ">
else {
<if(eotPredictsAlt)>
  alt<decisionNumber> = <eotPredictsAlt>;
<else>
  <ruleBacktrackFailure()>
  NoViableAltException *nvae = [NoViableAltException newException:<decisionNumber> state:<stateNumber>
stream:input];
  nvae.c = LA<decisionNumber>_<stateNumber>;
  <@noViableAltException()>
  @throw nvae;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.

```

```

*/
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
NSInteger LA<decisionNumber>_<stateNumber> = [input LA:<k>];<\n>
<edges; separator="\nelse ">
>>

/**
A DFA state that is actually the loopback decision of a closure
* loop. If end-of-token (EOT) predicts any of the targets then it
* should act like a default clause (i.e., no error can be generated).
* This is used only in the lexer so that for ('a')* on the end of a rule
* anything other than 'a' predicts exiting.
*/
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
NSInteger LA<decisionNumber>_<stateNumber> = [input LA:<k>];
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
    alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif><endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>";

/** A simple edge with an expression. If the expression is satisfied,
* enter to the target state. To handle gated productions, we may
* have to evaluate some predicates
for this edge.
*/
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif> ) {
    <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
* decides if this is possible: CodeGenerator.canGenerateSwitch().
*/
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
unichar charLA<decisionNumber> = [input LA:<k>];
switch (charLA<decisionNumber>) {

```

```

    <edges; separator="\n"><\n>
default: ;
<if(eotPredictsAlt)>
    alt<decisionNumber> = <eotPredictsAlt>;
<else>
    <ruleBacktrackFailure()>
    NoViableAltException *nvae = [NoViableAltException newException:<decisionNumber> state:<stateNumber>
stream:input];
    nvae.c = charLA<decisionNumber>;
    <@noViableAltException()>
    @throw nvae;<\n>
<endif>
}<\n>
>>

```

```

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ([input LA:<k>])
{ // dfaOptionalBlockStateSwitch
    <edges; separator="\n"><\n>
}<\n>
>>

```

```

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ([input LA:<k>]) { // dfaLoopbackStateSwitch
    <edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
    alt<decisionNumber> = <eotPredictsAlt>;
    break;<\n>
<endif>
}<\n>
>>

```

```

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{it | case <it>: ;}; separator="\n">
{
    <targetState>
}
break;
>>

```

// C y c l i c D F A

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */

```

```

dfaDecision(decisionNumber,description) ::= <<

```

```

alt<decisionNumber> = [dfa<decisionNumber> predict:input];
>>

/** Used in headerFile */
cyclicDFAInterface(dfa) ::= <<
#pragma mark Cyclic DFA interface start DFA<dfa.decisionNumber>
@interface DFA<dfa.decisionNumber> : DFA {
}
+ (DFA<dfa.decisionNumber>
*) newDFA<dfa.decisionNumber>WithRecognizer:(BaseRecognizer *)theRecognizer;
- initWithRecognizer:(BaseRecognizer *)recognizer;
@end /* end of DFA<dfa.decisionNumber> interface */<\n>
#pragma mark Cyclic DFA interface end DFA<dfa.decisionNumber><\n>
>>

/** Used in lexer/parser implementation files */
/* Dump DFA tables as run-length-encoded Strings of octal values.
* Can't use hex as compiler translates them before compilation.
* These strings are split into multiple, concatenated strings.
* Java puts them back together at compile time thankfully.
* Java cannot handle large static arrays, so we're stuck with this
* encode/decode approach. See analysis and runtime DFA for
* the encoding methods.
*/
cyclicDFA(dfa) ::= <<
#pragma mark Cyclic DFA implementation start DFA<dfa.decisionNumber>

@implementation DFA<dfa.decisionNumber>
const static NSInteger dfa<dfa.decisionNumber>_eot[<dfa.numberofStates>] =
    {<dfa.eot; wrap="\n    ", separator=",", null="-1">};
const
static NSInteger dfa<dfa.decisionNumber>_eof[<dfa.numberofStates>] =
    {<dfa.eof; wrap="\n    ", separator=",", null="-1">};
const static unichar dfa<dfa.decisionNumber>_min[<dfa.numberofStates>] =
    {<dfa.min; wrap="\n    ", separator=",", null="-1">};
const static unichar dfa<dfa.decisionNumber>_max[<dfa.numberofStates>] =
    {<dfa.max; wrap="\n    ", separator=",", null="-1">};
const static NSInteger dfa<dfa.decisionNumber>_accept[<dfa.numberofStates>] =
    {<dfa.accept; wrap="\n    ", separator=",", null="-1">};
const static NSInteger dfa<dfa.decisionNumber>_special[<dfa.numberofStates>] =
    {<dfa.special; wrap="\n    ", separator=",", null="-1">};

/** Used when there is no transition table entry for a particular state */
#define dfa<dfa.decisionNumber>_T_empty    nil

<dfa.edgeTransitionClassMap.keys:{ table |
const static NSInteger dfa<dfa.decisionNumber>_T<i0>[] =
{

```

```

    <table; separator=", ", wrap="\n ", null="-1">
\};
}; null="">

const static NSInteger *dfa<dfa.decisionNumber>_transition[]
=
{
    <dfa.transitionEdgeTables:{ whichTable|dfa<dfa.decisionNumber>_T<whichTable>}; separator=", ", wrap="\n",
    null="nil">
};

+ (DFA<dfa.decisionNumber> *) newDFA<dfa.decisionNumber>WithRecognizer:(BaseRecognizer *)aRecognizer
{
    return [[[DFA<dfa.decisionNumber> alloc] initWithRecognizer:aRecognizer] retain];
}

- (id) initWithRecognizer:(BaseRecognizer *) theRecognizer
{
    self = [super initWithRecognizer:theRecognizer];
    if ( self != nil ) {
        decisionNumber = <dfa.decisionNumber>;
        eot = dfa<dfa.decisionNumber>_eot;
        eof = dfa<dfa.decisionNumber>_eof;
        min = dfa<dfa.decisionNumber>_min;
        max = dfa<dfa.decisionNumber>_max;
        accept = dfa<dfa.decisionNumber>_accept;
        special = dfa<dfa.decisionNumber>_special;
        transition = dfa<dfa.decisionNumber>_transition;
    }
    return self;
}

<if(dfa.specialStateSTs)>
/* start dfa.specialStateSTs */
- (NSInteger) specialStateTransition:(NSInteger)s
Stream:(id<IntStream\>)anInput
{
    <if(LEXER)>
        id<IntStream\> input = anInput;<\n>
    <endif>
    <if(PARSER)>
        id<TokenStream\> input = (id<TokenStream\>)anInput;<\n>
    <endif>
    <if(TREE_PARSER)>
        id<TreeNodeStream\> input = (id<TreeNodeStream\>)anInput;<\n>
    <endif>
    switch (s) {
        <dfa.specialStateSTs:{ state |

```

```

        case <i0> : ;<! compressed special state numbers 0..n-1 !>
            <state>}; separator="\n">
    }
<if(backtracking)>
    if ( [recognizer getBacktrackingLevel] > 0 ) { [recognizer setFailed:YES]; return -1; }<\n>
<endif>
    NoViableAltException *nvae = [NoViableAltException newException:<dfa.decisionNumber> state:s
stream:recognizer.input];
    // nvae.c = s;
    /* [self error:nvae]; */ <! for debugger - do later !>
    @throw nvae;
}<\n>
/* end dfa.specialStateSTs */
<endif>

- (void) dealloc
{
    //free(transition);
    [super dealloc];
}

- (NSString *) description
{
    return @"<dfa.description>";
}

<@errorMethod()>

@end /* end DFA<dfa.decisionNumber>
implementation */<\n>
#pragma mark Cyclic DFA implementation end DFA<dfa.decisionNumber>
<\n>
>>
/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFASState(decisionNumber, stateNumber, edges, needErrorClause, semPredState) ::= <<
/* cyclicDFASState */
NSInteger LA<decisionNumber>_<stateNumber> = [input LA:1];<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
NSInteger index<decisionNumber>_<stateNumber> = input.index;
[input rewind];<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
[input seek:index<decisionNumber>_<stateNumber>];<\n>
<endif>

```



```

if ( s >= 0 )
    return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
/* cyclicDFAEdge */
if (<labelExpr><if(predicates)> && (<predicates>)<endif>)
    { s = <targetStateNumber>; }<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n> /* eotDFAEdge */
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands) ::= "<operands; separator=\\|\\>"

notPredicate(pred) ::= "!(<evalPredicate(pred, {})>)"

evalPredicate(pred,description) ::= "<pred>"

/*
 * evalSynPredicate(pred,description) ::= "<pred>()"
 *
 * synpreds are broken in cyclic DFA special states
 * Damn! For now, work around with using the selectors directly, and by providing a trampoline evalSynPred
method in
 * DFA
 */
/* evalSynPredicate(pred,description) ::= "[self evaluateSyntacticPredicate:<pred>Selector stream:input]" */
evalSynPredicate(pred,description) ::= "[self evaluateSyntacticPredicate:@selector(<pred>_fragment)]"
/* evalSynPredicate(pred,description)
 ::= "[recognizer <pred>]" */

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>==<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.

```

```

*/
isolatedLookaheadTest(atom,k,atomAsInt) ::= "[input LA:<k>] == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
(LA<decisionNumber>_<stateNumber> >= <lower> && LA<decisionNumber>_<stateNumber> \<= <upper>)
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(([input LA:<k>] >=
<lower>) && ([input LA:<k>] \<= <upper>))"

setTest(ranges) ::= <%
<ranges; separator="|">
%>

// A T T R I B U T E S

memVars(scope) ::= <% <scope.attributes:{a|<a.type> <a.name>;<\n>}; separator="\n"> %>

properties(scope) ::= <%
<scope.attributes:{a|@property (assign, getter=get<a.name>, setter=set<a.name>:) <a.type> <a.name>;<\n>};
separator="\n">
%>

methodsDecl(scope) ::= <%
<scope.attributes:{a|
(<a.type>)get<a.name>;<\n>- (void)set<a.name>:(<a.type>)aVal;<\n>}; separator="\n">
%>

synthesize(scope) ::= <% <scope.attributes:{a|@synthesize <a.name>;}; separator="\n"> %>

methods(scope) ::= <%
<scope.attributes:{a|
- (<a.type>)get<a.name> { return( <a.name> ); }\<\n>
- (void)set<a.name>:(<a.type>)aVal { <a.name> = aVal; }\<\n>}; separator="\n">
%>

globalAttributeScopeInterface(scope) ::= <%
/* globalAttributeScopeInterface */<\n>
@interface <scope.name>_Scope : SymbolsScope {<\n>
<if(scope.attributes)>
<memVars(scope)>
<endif>
}<\n>
<if(scope.attributes)>
/* start of globalAttributeScopeInterface properties */<\n>
<properties(scope)>
/* end globalAttributeScopeInterface properties */<\n>
<endif>

```

```

+ (<scope.name>_Scope *)new<scope.name>_Scope;<\n>
- (id) init;<\n>
<if(scope.attributes)>
/* start of globalAttributeScopeInterface methodsDecl */<\n>
<methodsDecl(scope)>
/* End of globalAttributeScopeInterface methodsDecl */<\n>
<endif>
@end /* end of <scope.name>_Scope interface
*/<\n>
%>

globalAttributeScopeMemVar(scope) ::= <%
/* globalAttributeScopeMemVar */<\n>
SymbolStack *<scope.name>_stack;<\n>
<scope.name>_Scope *<scope.name>_scope;<\n>
%>

globalAttributeScopeImplementation(scope) ::= <%
@implementation <scope.name>_Scope /* globalAttributeScopeImplementation */<\n>
<if(scope.attributes)>
/* start of synthesize -- OBJC-Line 1750 */<\n>
<synthesize(scope)><\n>
<endif>
<\n>
+ (<scope.name>_Scope *)new<scope.name>_Scope<\n>
{<\n>
    return [[<scope.name>_Scope alloc] init];<\n>
}<\n>
<\n>
- (id) init<\n>
{<\n>
    self = [super init];<\n>
    return self;<\n>
}<\n>
<\n>
<if(scope.attributes)>
/* start of iterate get and set functions */<\n>
<methods(scope)><\n>
/* End of iterate get and set functions */<\n>
<endif>
@end /* end of <scope.name>_Scope implementation */<\n><\n>
%>

globalAttributeScopeInit(scope) ::= <<
/* globalAttributeScopeInit */<\n>
<scope.name>_scope = [<scope.name>_Scope new<scope.name>_Scope];<\n>
<scope.name>_stack = [SymbolStack

```

```

newSymbolStackWithLen:30];<\n>
>>

globalAttributeScopeDealloc(scope) ::= <% [<scope.name>_stack release];<\n> %>

globalAttributeScope(scope) ::= <%
<if(scope.name)>
static <scope.name>_stack;<\n>
<endif>
%>

ruleAttributeScopeMemVar(scope) ::= <%
/* ObjC ruleAttributeScopeMemVar */<\n>
<if(scope.attributes)>
<scope.name>_Scope *<scope.name>_scope; /* ObjC ruleAttributeScopeMemVar */<\n>
<endif>
%>

ruleAttributeScopeInterface(scope) ::= <%
<if(scope.attributes)>
/* start of ruleAttributeScopeInterface */<\n>
@interface <scope.name>_Scope : SymbolsScope {<\n>
    <memVars(scope)><\n>
}<\n>
<\n>
/* start property declarations */<\n>
<properties(scope)><\n>
/* start method declarations */<\n>
+ (<scope.name>_Scope *)new<scope.name>_Scope;<\n>
- (id) init;<\n>
<methodsDecl(scope)><\n>
@end /* end of ruleAttributeScopeInterface */<\n><\n>
<endif>
%>

ruleAttributeScopeImplementation(scope) ::= <%
<if(scope.attributes)>
@implementation <scope.name>_Scope /* start of ruleAttributeScopeImplementation
*/<\n>
<synthesize(scope)><\n>
<\n>
+ (<scope.name>_Scope *)new<scope.name>_Scope<\n>
{<\n>
    return [[<scope.name>_Scope alloc] init];<\n>
}<\n>
<\n>
- (id) init<\n>
{<\n>

```

```

    self = [super init];<\n>
    return self;<\n>
}<\n>
<\n>
/* start of <scope.name>_Scope get and set functions */<\n>
<methods(scope)><\n>
/* End of <scope.name>_Scope get and set functions */<\n>
@end /* end of ruleAttributeScopeImplementation */<\n><\n>
<endif>
%>

ruleAttributeScopeInit(scope) ::= <%
/* ruleAttributeScopeInit */<\n>
<scope.name>_scope = [<scope.name>_Scope new<scope.name>_Scope];<\n>
<scope.name>_stack = [SymbolStack newSymbolStackWithLen:30];<\n>
%>

ruleAttributeScopeDealloc(scope) ::= <% [<scope.name>_Scope release];<\n> %>

ruleAttributeScope(scope) ::= <%
<if(scope.attributes)>
/* ruleAttributeScope */<\n>
static SymbolStack *<scope.name>_stack;<\n>
static <scope.name>_Scope *<scope.name>_scope;
<endif>
%>

ruleAttributeScopeDecl(scope) ::= <%
/* ruleAttributeScopeDecl
*/<\n>
<if(scope.attributes)>
<scope.name>_Scope *<scope.name>_scope;<\n>
<endif>
%>

returnStructName(r) ::= "<className()>_<r.name>_return"

returnType() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor:returnStructName()> *
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
%>

```

```

<else>
void
<endif>
%>

/** Generate the Objective-C type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
<className()>_<referencedRule.name>_return *<else>
<if(referencedRule.hasSingleReturnValue)><referencedRule.singleValueType><else>
void<endif>
<endif>
%>

delegateName(d) ::= <% <if(d.label)><d.label><else>g<d.name><endif> %>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <% <objTypeInitMap.(typeName)>
%>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <%
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
%>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScopeInterface(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
/* returnScopeInterface <ruleDescriptor:returnStructName()> */
@interface <ruleDescriptor:returnStructName()> :
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope { /* returnScopeInterface line 1838 */
<@memVars()> /* ObjC start of memVars() */<\n>
<if(scope.attributes)>
<memVars(scope)><\n>
<endif>
}
/* start property declarations */
<@properties()><\n>
<if(scope.attributes)>
<properties(scope)><\n>

```

```

<endif>
/* start of method declarations */<\n>
+ (<ruleDescriptor:returnStructName()> *)new<ruleDescriptor:returnStructName()>;
/*
  this is start of set and get methods */
<@methodsDecl()> /* methodsDecl */<\n>
<if(scope.attributes)>
/* start of iterated get and set functions */<\n>
<methodsDecl(scope)><\n>
<endif>
@end /* end of returnScopeInterface interface */<\n>
<endif>
>>

returnScopeImplementation(scope) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
@implementation <ruleDescriptor:returnStructName()> /* returnScopeImplementation */<\n>
<@synthesize()> /* start of synthesize -- OBJC-Line 1837 */<\n>
<if(scope.attributes)>
  <synthesize(scope)><\n>
<endif>
+ (<ruleDescriptor:returnStructName()> *)new<ruleDescriptor:returnStructName()><\n>
{<\n>
  return [[[<ruleDescriptor:returnStructName()> alloc] init] retain];<\n>
}<\n>
<\n>
- (id) init<\n>
{<\n>
  self = [super init];<\n>
  return self;<\n>
}<\n>
<\n>
<@methods()><\n>
<if(scope.attributes)>
/* start of iterate get and set functions */<\n>
<methods(scope)><\n>
/* End of iterate get and set functions
 */<\n>
<endif>
<actions.(actionScope).ruleReturnMethods>
<@ruleReturnMembers()><\n>
@end /* end of returnScope implementation */<\n><\n>
<endif>
%>

parameterScope(scope) ::= <<
<! <scope.attributes:{ it | :(<it.type>)<it.name> }; separator=" "> !>
<first(scope.attributes):{ a | :(<a.type>)<a.name> }> <rest(scope.attributes):{ a | arg<i>:(<a.type>)<a.name> };

```

```

separator=" ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>";

/** Note that the scopeAttributeRef does not have access to the
 * grammar name directly
 */
scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
(((<scope>_Scope *)[<scope>_stack objectAtIndex:<scope>_stack size]-<negIndex>-1])).<attr.name>
<else>
<if(index)>
((<scope>_Scope *)[<scope>_stack objectAtIndex:<index>]).<attr.name>
<else>
((<scope>_Scope *)[<scope>_stack peek]).<attr.name>
<endif>
<endif>
%>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
/* scopeSetAttributeRef */
<if(negIndex)>
((<scope>_Scope
*)[<scope>_stack objectAtIndex:([<scope>_stack size]-<negIndex>-1])).<attr.name> = <expr>;
<else>
<if(index)>
((<scope>_Scope *)[<scope>_stack objectAtIndex:<index>]).<attr.name> = <expr>;
<else>
((<scope>_Scope *)[<scope>_stack peek]).<attr.name> = <expr>;
<endif>
<endif>
%>

scopeAttributeRefStack() ::= <<
/* scopeAttributeRefStack */
<if(negIndex)>
((<scope>_Scope *)[<scope>_stack objectAtIndex:[<scope>_stack count]-<negIndex>-1]).<attr.name> = <expr>;
<else>
<if(index)>
((<scope>_Scope *)[<scope>_stack objectAtIndex:<index>]).<attr.name> = <expr>;
<else>
((<scope>_Scope *)[<scope>_stack peek]).<attr.name> = <expr>;
<endif>
<endif>
>>

```



```

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return
 value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=nil?<scope>.<attr.name>:<initValue(attr.type)>)
<else>
<scope>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> /* added to returnAttributeRef */<\n>
<else>
<attr.name><\n>
<endif>
%>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>; /* added to returnSetAttributeRef */<\n>
<else>
<attr.name> = <expr>;<\n>
<endif>
%>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

/* not sure the next are the right approach; and they are evaluated early; */
/* they cannot see TREE_PARSER or PARSER attributes for example. :( */

tokenLabelPropertyRef_text(scope,attr) ::= "(<scope>!=nil?<scope>.text:nil)"
tokenLabelPropertyRef_type(scope,attr)
::= "(<scope>!=nil?<scope>.type:0)"
tokenLabelPropertyRef_line(scope,attr) ::= "(<scope>!=nil?<scope>.line:0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(<scope>!=nil?<scope>.charPositionInLine:0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "(<scope>!=nil?<scope>.channel:0)"

```

```

tokenLabelPropertyRef_index(scope,attr) ::= "<scope>!=nil?[<scope> getTokenIndex]:0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>!=nil?[<scope>.text integerValue]:0)"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>!=nil?((<labelType> *)<scope>.start):nil)"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>!=nil?((<labelType> *)<scope>.stopToken):nil)"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>!=nil?((<ASTLabelType> *)<scope>.tree):nil)"
ruleLabelPropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
<scope>!=nil?[[input getTokenStream] toStringFromStart:[[input getTreeAdaptor] getTokenStartIndex:[<scope>
getStart]]
    ToEnd:[[input getTreeAdaptor] getTokenStopIndex:[<scope> getStart]]]:0)
<else>
<scope>!=nil?[[input toStringFromToken:[<scope> getStart] ToToken:[<scope> getStop]]]:0)
<endif>
%>
ruleLabelPropertyRef_st(scope,attr) ::= "<scope>!=nil?[<scope> st]:nil)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "<scope>!=nil?<scope>.type:0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "<scope>!=nil?<scope>.line:0)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "<scope>!=nil?<scope>.charPositionInLine:-1)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "<scope>!=nil?<scope>.channel:0)"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "<scope>!=nil?[<scope> getTokenIndex]:0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "<scope>!=nil?<scope>.text:nil)"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "<scope>!=nil?[<scope>.text integerValue]:0)"

// Somebody may ref $template or $tree or $stop within
a rule:
rulePropertyRef_start(scope,attr) ::= "((<labelType> *)retval.start)"
rulePropertyRef_stop(scope,attr) ::= "((<labelType> *)retval.stopToken)"
rulePropertyRef_tree(scope,attr) ::= "((<ASTLabelType> *)retval.tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
[[input getTokenStream] toStringFromStart:[[input getTreeAdaptor]
getTokenStartIndex:retval.start.token.startIndex]
    ToEnd:[[input getTreeAdaptor] getTokenStopIndex:retval.start.token.stopIndex]]
<else>
[[input toStringFromToken:retval.start ToToken:[input LT:-1]]
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

/* hideous: find a way to cut down on the number of templates to support read/write access */
/* TODO: also, which ones are valid to write to? ask Ter */

```

```

lexerRuleSetPropertyRef_text(scope,attr,expr) ::= "state.text = <expr>";
lexerRuleSetPropertyRef_type(scope,attr,expr) ::= "_type"
lexerRuleSetPropertyRef_line(scope,attr,expr) ::= "state.tokenStartLine"
lexerRuleSetPropertyRef_pos(scope,attr,expr)
 ::= "state.tokenStartCharPositionInLine"
lexerRuleSetPropertyRef_index(scope,attr,expr) ::= "-1" /* undefined token index in lexer */
lexerRuleSetPropertyRef_channel(scope,attr,expr) ::= "state.channel=<expr>";
lexerRuleSetPropertyRef_start(scope,attr,expr) ::= "state.tokenStartCharIndex"
lexerRuleSetPropertyRef_stop(scope,attr,expr) ::= "(input.index-1)"

lexerRulePropertyRef_text(scope,attr) ::= "self.text"
lexerRulePropertyRef_type(scope,attr) ::= "state.type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(input.index-1)"
lexerRulePropertyRef_int(scope,attr) ::= "[<scope>.text integerValue]"

//
setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.start =<expr>";
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>"; /* "<\n>#error StringTemplates are
unsupported<\n>" */

/** How to execute an action */
execAction(action) ::= <<
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {
    <action>
}
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
static ANTLRBitSet *<name>;
static const unsigned long long <name>_data[] = { <words64:{it | <it>LL};separator=", ">>};<\n>

```

>>

```
bitsetInit(name, words64) ::= <<  
<name> = [[ANTLRBitSet newBitSetWithBits:(const unsigned long long *)<name>_data  
Count:(NSUInteger)<length(words64)>] retain];<n>  
>>
```

```
codeFileExtension() ::= ".m"
```

```
true_value() ::= "YES"
```

```
false_value() ::= "NO"
```

Found in path(s):

*

```
/opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/ObjC/ObjC.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

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```

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```

```
*/
```

```

csharpVisibilityMap ::= [
  "private":"private",
  "protected":"protected",
  "public":"public",
  "fragment":"private",
  default:"private"
]

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile( LEXER,PARSER,TREE_PARSER, actionScope, actions,
  docComment,
  recognizer,
  name, tokens, tokenNames, rules, cyclicDFAs,
  bitsets, buildTemplate, buildAST, rewriteMode, profile,
  backtracking, synpreds, memoize, numRules,
  fileName, ANTLRVersion, generatedTimestamp, trace,
  scopes, superClass, literals) ::=

<<
//-----
//\<auto-generated>
// This code was generated by a tool.
// ANTLR Version: <ANTLRVersion>
//
// Changes to this file may cause incorrect behavior and will be lost if
// the code is regenerated.
//\</auto-generated>
//-----

// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<if(trace)>
#define ANTLR_TRACE
<endif>
<@debugPreprocessor()>
// The variable 'variable' is assigned but its value is never used.
#pragma warning disable 168, 219
// Unreachable code detected.
#pragma warning disable 162
// Missing XML comment for publicly visible type or member
'Type_or_Member'
#pragma warning disable 1591

<actions.(actionScope).header>

<@imports>

```

```

using System.Collections.Generic;
using Antlr.Runtime;
using Antlr.Runtime.Misc;
<if(TREE_PARSER)>
using Antlr.Runtime.Tree;
using RewriteRuleITokenStream = Antlr.Runtime.Tree.RewriteRuleTokenStream;
<endif>
using ConditionalAttribute = System.Diagnostics.ConditionalAttribute;
<@end>
<if(actions.(actionScope).namespace)>
namespace <actions.(actionScope).namespace>
{
<endif>
<docComment>
<recognizer>
<if(actions.(actionScope).namespace)>

} // namespace <actions.(actionScope).namespace>
<endif>
>>

lexerInputStreamType() ::= <<
<actions.(actionScope).inputStreamType; null="ICharStream">
>>

lexer(grammar, name, tokens, scopes, rules, numRules, filterMode, labelType="CommonToken",
superClass={ <if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else>Antlr.Runtime.Lexer
<endif>} ) ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<ANTLRVersion>")]
[System.CLSCompliant(false)]
<parserModifier(grammar=grammar,
actions=actions)> partial class <grammar.recognizerName> : <@superClassName><superClass><@end>
{
<tokens:{ it|public const int <it.name; format="id">=<it.type>; }; separator="\n">
<scopes:{ it|<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<actions.lexer.members>

// delegates
<grammar.delegates:
    { g|private <g.recognizerName> <g.delegateName()>; }; separator="\n">
// delegators
<grammar.delegators:
    { g|private <g.recognizerName> <g.delegateName()>; }; separator="\n">
<last(grammar.delegators):{ g|private <g.recognizerName> gParent; }>

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>()<! needed by subclasses !>
{
    OnCreated();

```

```

}

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<lexerInputStreamType>
input<grammar.delegators:{ g|, <g.recognizerName> <g.delegateName()>}> )
: this(input, new RecognizerSharedState()<grammar.delegators:{ g|,
<g.delegateName()>}>)
{
}

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<lexerInputStreamType> input,
RecognizerSharedState state<grammar.delegators:{ g|, <g.recognizerName> <g.delegateName()>}>)
: base(input, state)
{
<if(memoize)>
<if(grammar.grammarIsRoot)>
state.ruleMemo = new System.Collections.Generic.Dictionary<int, int>[<numRules>+1];<\n><! index from 1..n !>
<endif>
<endif>
<grammar.directDelegates:
{ g|<g.delegateName()> = new <g.recognizerName>(input, this.state<trunc(g.delegators):{ p|,
<p.delegateName()>}>, this);}; separator="\n">
<grammar.delegators:
{ g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
<last(grammar.delegators):{ g|gParent = <g.delegateName()>;}>

OnCreated();
}
public override string GrammarFileName { get { return "<fileName>"; } }

private static readonly bool[] decisionCanBacktrack = new bool[0];

<if(grammar.hasDelegates)>
public override <lexerInputStreamType> CharStream
{
get
{
return
base.CharStream;
}
set
{
base.CharStream = value;
<grammar.directDelegates:
{ g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{ p|, <p.delegateName()>}>,
this);}; separator="\n">
<grammar.delegators:
{ g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
<last(grammar.delegators):{ g|gParent = <g.delegateName()>;}>

```

```

    }
}

<if(grammar.delegates)>
public override void SetState(RecognizerSharedState state)
{
    base.SetState(state);
    <grammar.delegates: {g|<g:delegateName(>}.SetState(state);}; separator="\n">
}
<endif>

<endif>
<if(filterMode)>
<filteringNextToken(>
<endif>

[Conditional("ANTLR_TRACE")]
protected virtual void OnCreated() {}
[Conditional("ANTLR_TRACE")]
protected virtual void EnterRule(string ruleName, int ruleIndex) {}
[Conditional("ANTLR_TRACE")]
protected virtual void LeaveRule(string ruleName, int ruleIndex) {}

    <rules; separator="\n">

<insertLexerSynpreds(synpreds)>

#region
DFA
<cyclicDFAs: {dfa | DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">

protected override void InitDFAs()
{
    base.InitDFAs();
    <cyclicDFAs: {dfa | dfa<dfa.decisionNumber> = new DFA<dfa.decisionNumber>(this<if(dfa.specialStateSTs)>,
SpecialStateTransition<dfa.decisionNumber><endif>;);}; separator="\n">
}

<cyclicDFAs:cyclicDFA(> <! dump tables for all DFA !>
#endregion

}
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens

```



```

* at backtracking==1.
*/
filteringNextToken() ::= <<
public override IToken NextToken()
{
while (true)
{
if (input.LA(1) == CharStreamConstants.EndOfFile)
{
IToken eof = new CommonToken((ICharStream)input, CharStreamConstants.EndOfFile, TokenChannels.Default,
input.Index,
input.Index);
eof.Line = Line;
eof.CharPositionInLine = CharPositionInLine;
return eof;
}
state.token = null;
state.channel = TokenChannels.Default;
state.tokenStartCharIndex = input.Index;
state.tokenStartCharPositionInLine = input.CharPositionInLine;
state.tokenStartLine = input.Line;
state.text = null;
try
{
int m = input.Mark();
state.backtracking=1;<! means we won't throw slow exception !>
state.failed=false;
mTokens();
state.backtracking=0;
<! mTokens backtracks with synpred at backtracking==2
and we set the synpredgate to allow actions at level 1. !>
if (state.failed)
{
input.Rewind(m);
input.Consume();<! advance one char and try again !>
}
else
{
Emit();
return state.token;
}
}
catch (RecognitionException re)
{
// shouldn't happen in backtracking mode, but...
ReportError(re);
Recover(re);
}
}
}

```

```

}
}

public override void Memoize(IIntStream input, int ruleIndex, int ruleStartIndex)
{
    if
    (state.backtracking > 1)
        base.Memoize(input, ruleIndex, ruleStartIndex);
}

public override bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
    if (state.backtracking > 1)
        return base.AlreadyParsedRule(input, ruleIndex);

    return false;
}
>>

actionGate() ::= "state.backtracking == 0"

filteringActionGate() ::= "state.backtracking == 1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
    bitsets, inputStreamType, superClass,
    labelType, members, rewriteElementType,
    filterMode, ASTLabelType="object") ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<ANTLRVersion>")]
[System.CLSCompliant(false)]
<parserModifier(grammar=grammar, actions=actions)> partial class <grammar.recognizerName> :
<@superClassName><superClass><@end>
{
<if(grammar.grammarIsRoot)>
    internal static readonly string[] tokenNames = new string[] {
        "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames>
        separator=", ">
    };
<endif>
    <tokens:{it|public const int <it.name>; format="id">=<it.type>;}; separator="\n">

<if(grammar.delegates)>
    // delegates
    <grammar.delegates:
        {g|private <g.recognizerName> <g.delegateName()>;}; separator="\n">
    <endif>
<if(grammar.delegators)>
    // delegators

```

```

<grammar.delegators:
  {g|private <g.recognizerName> <g.delegateName(>);}; separator="\n">
<last(grammar.delegators):{g|private <g.recognizerName> gParent;}>
<endif>

<if(grammar.delegates)>
public override void SetState(RecognizerSharedState state)
{
  base.SetState(state);
  <grammar.delegates:{g|<g.delegateName(>.SetState(state);}; separator="\n">
}

<if(TREE_PARSER)>
public override void SetTreeNodeStream(ITreeNodeStream input)
{
  base.SetTreeNodeStream(input);
  <grammar.delegates:{g|<g.delegateName(>.SetTreeNodeStream(input);}; separator="\n">
}
<endif>
<endif>

<scopes:{it|<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<@members(>

public override
string[] TokenNames { get { return <grammar.composite.rootGrammar.recognizerName>.tokenNames; } }
public override string GrammarFileName { get { return "<fileName>"; } }

<members>

[Conditional("ANTLR_TRACE")]
protected virtual void OnCreated() {}
[Conditional("ANTLR_TRACE")]
protected virtual void EnterRule(string ruleName, int ruleIndex) {}
[Conditional("ANTLR_TRACE")]
protected virtual void LeaveRule(string ruleName, int ruleIndex) {}

#region Rules
<rules; separator="\n">
#endregion Rules

<if(grammar.delegatedRules)>
<! generate rule/method definitions for imported rules so they
  appear to be defined in this recognizer. !>
#region Delegated rules
<grammar.delegatedRules:{ruleDescriptor|
  <ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> <return Type(ruleDescriptor)>
  <ruleDescriptor.name; format="id"><(ruleDescriptor.parameterScope:parameterScope(>>) <!throws

```

```

RecognitionException !>{ <if(ruleDescriptor.hasReturnValue)>return
<endif><ruleDescriptor.grammar.delegateName()>.<ruleDescriptor.name;
format="id"><if(ruleDescriptor.parameterScope)><ruleDescriptor.parameterScope.attributes:{a|<a.name;
format="id">}; separator=", "><endif>); \}}; separator="\n">
#endregion Delegated rules
<endif>

<insertSynpreds(synpreds)>

<if(cyclicDFAs)>
#region DFA
<cyclicDFAs:{ dfa | private DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">

protected override void InitDFAs()
{
base.InitDFAs();
<cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = new DFA<dfa.decisionNumber>( this<if(dfa.specialStateSTs)>,
SpecialStateTransition<dfa.decisionNumber><endif> );}; separator="\n">
}

<cyclicDFAs:cyclicDFA()><! dump tables for all DFA !>
#endregion DFA
<endif>

<if(bitsets)>
#region Follow sets
private static class Follow
{
<bitsets:{ it|<bitset(name={ _<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>; separator="\n">
}
#endregion Follow sets
<endif>
}
>>

@genericParser.members() ::= <<
#if ANTLR_DEBUG
private static readonly
bool[] decisionCanBacktrack =
new bool[]
{
false, // invalid decision
<grammar.decisions:{ d | <d.dfa.hasSynPred>}; wrap="\n", separator=", ">
};
#else
private static readonly bool[] decisionCanBacktrack = new bool[0];
#endif
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>

```

```

<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<inputStreamType>
input<grammar.delegates:{ g|, <g.recognizerName> <g.delegateName()>}>)
: this(input, new RecognizerSharedState()<grammar.delegates:{ g|, <g.delegateName()>}>)
{
}
<actions.(actionScope).ctorModifier; null="public"> <grammar.recognizerName>(<inputStreamType> input,
RecognizerSharedState state<grammar.delegates:{ g|, <g.recognizerName> <g.delegateName()>}>)
: base(input, state)
{
<if(grammar.directDelegates)>
<grammar.directDelegates:
{ g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegates):{p|, <p.delegateName()>}>,
this);}; separator="\n">
<endif>
<if(grammar.indirectDelegates)>
<grammar.indirectDelegates:{ g
| <g.delegateName()> = <g.delegate:delegateName()>.<g.delegateName()>;}; separator="\n">
<endif>
<if(grammar.delegates)>
<last(grammar.delegates):{ g|gParent = <g.delegateName()>;}>
<endif>
<parserCtorBody()>
OnCreated();
}
>>

// imported grammars are 'public' (can't be internal because their return scope classes must be accessible)
parserModifier(grammar, actions) ::= <<
<if(grammar.grammarIsRoot)><actions.(actionScope).modifier; null="public"><else>public<endif>
>>

parserCtorBody() ::= <<
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo = new System.Collections.Generic.Dictionary<int,
int>[<length(grammar.allImportedRules)>+1];<\n><! index from 1..n !>
<endif>
<endif>
<grammar.delegates:
{ g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
ASTLabelType="object",
superClass={ <if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else>Antlr.Runtime.Parser
<endif>},
labelType="IToken",
members={ <actions.parser.members>}) ::= <<

```

```

<genericParser(inputStreamType="ITokenStream", rewriteElementType="IToken", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
    numRules, bitsets, filterMode, labelType={ <ASTLabelType> }, ASTLabelType="object",
    superClass={ <if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else>Antlr.Runtime.Tree.<
if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif><endif>},
    members={ <actions.treeparser.members> }) ::= <<
<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 *
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
[Conditional("ANTLR_TRACE")]
protected virtual void EnterRule_<ruleName>_fragment() {}
[Conditional("ANTLR_TRACE")]
protected virtual void LeaveRule_<ruleName>_fragment() {}

// $ANTLR start <ruleName>
<ruleModifier(grammar,ruleDescriptor)> void
<ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope()>)
{
    <ruleLabelDefs()>
    EnterRule_<ruleName>_fragment();
    EnterRule("<ruleName>_fragment", <ruleDescriptor.index>);
    TraceIn("<ruleName>_fragment", <ruleDescriptor.index>);
    try
    {
        <block>
    }
    finally
    {
        TraceOut("<ruleName>_fragment", <ruleDescriptor.index>);
        LeaveRule("<ruleName>_fragment", <ruleDescriptor.index>);
        LeaveRule_<ruleName>_fragment();
    }
}

```

```

//
$ANTLR end <ruleName>
>>

insertLexerSynpreds(synpreds) ::= <<
<insertSynpreds(synpreds)>
>>

insertSynpreds(synpreds) ::= <<
<if(synpreds)>
#region Synpreds
private bool EvaluatePredicate(System.Action fragment)
{
    bool success = false;
    state.backtracking++;
    <@start(>
    try { DebugBeginBacktrack(state.backtracking);
    int start = input.Mark();
    try
    {
        fragment();
    }
    catch ( RecognitionException re )
    {
        System.Console.Error.WriteLine("impossible: "+re);
    }
    success = !state.failed;
    input.Rewind(start);
    } finally { DebugEndBacktrack(state.backtracking, success); }
    <@stop(>
    state.backtracking--;
    state.failed=false;
    return success;
}
#endregion Synpreds
<endif>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if (state.backtracking > 0 && AlreadyParsedRule(input, <ruleDescriptor.index>)) { <returnFromRule(> }
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (state.failed) <returnFromRule(><endif>
>>

```

```

/**
 This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking>0) { state.failed=true; <returnFromRule(>><endif>
>>

ruleWrapperMap ::= [
"bottomup":{<ruleWrapperBottomup(>>},
"topdown":{<ruleWrapperTopdown(>>},
default:""
]

ruleWrapperBottomup() ::= <<
<if(TREE_PARSER && filterMode)>
protected override <if(buildAST)>IAstRuleReturnScope<else>void<endif> Bottomup() { return bottomup(); }
<endif>
>>

ruleWrapperTopdown() ::= <<
<if(TREE_PARSER && filterMode)>
protected override <if(buildAST)>IAstRuleReturnScope<else>void<endif> Topdown() { return topdown(); }
<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(ruleDescriptor.returnScope)>

[Conditional("ANTLR_TRACE")]
protected
virtual void EnterRule_<ruleName>() {}
[Conditional("ANTLR_TRACE")]
protected virtual void LeaveRule_<ruleName>() {}
<ruleWrapperMap.(ruleName)>
// $ANTLR start "<ruleName>"
// <fileName>:<description>
[GrammarRule("<ruleName>")]
<ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> <returnType(ruleDescriptor)> <ruleName;
format="id">(<ruleDescriptor.parameterScope:parameterScope(>>)
{
EnterRule_<ruleName>();
EnterRule("<ruleName>", <ruleDescriptor.index>);
TraceIn("<ruleName>", <ruleDescriptor.index>);
<ruleScopeSetUp(>>

```



```

<ruleDeclarations()>
<ruleLabelDefs()>
<ruleDescriptor.actions.init>
try { DebugEnterRule(GrammarFileName, "<ruleName>");
DebugLocation(<ruleDescriptor.tree.line>, <ruleDescriptor.EORNode.charPositionInLine>);
<@preamble()>
try
{
<ruleMemoization(name=ruleName)>
<block>
<ruleCleanUp()>
<(ruleDescriptor.actions.after):execAction()>
}
<if(exceptions)>
<exceptions: {e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
<actions.(actionScope).rulecatch>
<else>
catch
(RecognitionException re)
{
ReportError(re);
Recover(input,re);
<@setErrorReturnValue()>
}
<endif>
<endif>
<endif>
finally
{
TraceOut("<ruleName>", <ruleDescriptor.index>);
LeaveRule("<ruleName>", <ruleDescriptor.index>);
LeaveRule_<ruleName>();
<memoize()>
<ruleScopeCleanUp()>
<finally>
}
DebugLocation(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.charPositionInLine>);
} finally { DebugExitRule(GrammarFileName, "<ruleName>"); }
<@postamble()>
<returnFromRule()><\n>
}
// $ANTLR end "<ruleName>"
>>

```

```

// imported grammars need to have internal rules

```

```

ruleModifier(grammar,ruleDescriptor) ::= <<
<if(grammar.grammarIsRoot)><csharpVisibilityMap.(ruleDescriptor.modifier);
null="private"><else>internal<endif>
>>

// imported grammars need to have public return scopes
returnScopeModifier(grammar,ruleDescriptor) ::= <<
<if(grammar.grammarIsRoot)><csharpVisibilityMap.(ruleDescriptor.modifier);
null="private"><else>public<endif>
>>

catch(decl,action) ::= <<
catch (<e.decl>)
{
<e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType(ruleDescriptor)> retval = new <returnType(ruleDescriptor)>();
retval.Start = (<labelType>)input.LT(1);
<elseif(ruleDescriptor.returnScope)>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name; format="id"> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.Index;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: { it|<it>_stack.Push(new <it>_scope());<it>_scopeInit(<it>_stack.Peek());};
separator="\n">
<ruleDescriptor.ruleScope: { it|<it.name>_stack.Push(new
<it.name>_scope());<it.name>_scopeInit(<it.name>_stack.Peek());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: { it|<it>_scopeAfter(<it>_stack.Peek());<it>_stack.Pop();};
separator="\n">
<ruleDescriptor.ruleScope: { it|<it.name>_scopeAfter(<it.name>_stack.Peek());<it.name>_stack.Pop();};
separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wil

```

```

dcardTreeListLabels]
  :{it|<labelType> <it.label.text> = default(<labelType>);}; separator="\n"
>
<ruleDescriptor.tokenListLabels
  :{it|List\<<labelType>> list_<it.label.text> = null;}; separator="\n"
>
<[ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
  :{it|List\<<ASTLabelType>> list_<it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
<ruleDescriptor.ruleListLabels:ruleLabelDef(); separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
  ruleDescriptor.tokenListLabels,
  ruleDescriptor.ruleLabels]
  :{it|<labelType> <it.label.text> = default(<labelType>);}; separator="\n"
>
<[ruleDescriptor.charListLabels,
  ruleDescriptor.charLabels]
  :{it|int <it.label.text> = 0;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
  ruleDescriptor.ruleListLabels]
  :{it|List\<<labelType>> list_<it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.charListLabels:{it|List<int> list_<it.label.text> = null;}; separator="\n"
>
>>

returnFromRule() ::= <%
return
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<! This comment is a hack to make sure the following
  single space appears in the output. !> <ruleDescriptor.singleValueReturnName>
<else>
<!!> retval
<endif>
<endif>
<endif>
;
%>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>

```

```

<if(!TREE_PARSER)>
retval.Stop = (<labelType>)input.LT(-1);
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking > 0) { Memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the
lexer; naked blocks are used for
* fragment rules.
*/
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<

[Conditional("ANTLR_TRACE")]
protected virtual void EnterRule_<ruleName>() {}
[Conditional("ANTLR_TRACE")]
protected virtual void LeaveRule_<ruleName>() {}

// $ANTLR start "<ruleName>"
[GrammarRule("<ruleName>")]
<ruleModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)> void
m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(>))
{
EnterRule_<ruleName>();
EnterRule("<ruleName>", <ruleDescriptor.index>);
TraceIn("<ruleName>", <ruleDescriptor.index>);
<ruleScopeSetUp(>
<ruleDeclarations(>
try
{
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs(>
<ruleDescriptor.actions.init>
<block>
<else>
int _type = <ruleName>;
int _channel = DefaultTokenChannel;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs(>
<ruleDescriptor.actions.init>

```

```

<block>
<ruleCleanUp()>
state.type = _type;
state.channel =
_channel;
<(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally
{
TraceOut("<ruleName>", <ruleDescriptor.index>);
LeaveRule("<ruleName>", <ruleDescriptor.index>);
LeaveRule_<ruleName>();
<ruleScopeCleanUp()>
<memoize()>
}
}
// $ANTLR end "<ruleName>"
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<

public override void mTokens()
{
<block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
try { DebugEnterSubRule(<decisionNumber>);
try { DebugEnterDecision(<decisionNumber>, decisionCanBacktrack[<decisionNumber>]);
<decision>
} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision()>
<@prebranch()>
switch
(alt<decisionNumber>)
{

```

```

<alts:{a|<altSwitchCase(i,a)>}>
}
} finally { DebugExitSubRule(<decisionNumber>); }
<@postbranch(>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision(>
try { DebugEnterDecision(<decisionNumber>, decisionCanBacktrack[<decisionNumber>]);
<decision>
} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision(>
switch (alt<decisionNumber>)
{
<alts:{a|<altSwitchCase(i,a)>}>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt(>
DebugEnterAlt(1);
<alts>
<@postalt(>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt(>
DebugEnterAlt(1);
<alts>
<@postalt(>
>>

/**
A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,descriptio
n) ::= <<
// <fileName>:<description>
int cnt<decisionNumber>=0;
<decls>

```

```

<@preloop()>
try { DebugEnterSubRule(<decisionNumber>);
while (true)
{
int alt<decisionNumber>=<maxAlt>;
<@predecision()>
try { DebugEnterDecision(<decisionNumber>, decisionCanBacktrack[<decisionNumber>]);
<decision>
} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:{a|<altSwitchCase(i,a)>}>
default:
if (cnt<decisionNumber> >= 1)
goto loop<decisionNumber>;

<ruleBacktrackFailure()>
EarlyExitException eee<decisionNumber> = new EarlyExitException( <decisionNumber>, input );
DebugRecognitionException(eee<decisionNumber>);
<@earlyExitException()>
throw eee<decisionNumber>;
}
cnt<decisionNumber>++;
}
loop<decisionNumber>:
;

}
finally { DebugExitSubRule(<decisionNumber>); }
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

*/** A (..)* block with 1 or more alternatives */*

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=

<<

// <fileName>:<description>

<decls>

<@preloop()>

try { DebugEnterSubRule(<decisionNumber>);

while (true)

{

int alt<decisionNumber>=<maxAlt>;

<@predecision()>

try { DebugEnterDecision(<decisionNumber>, decisionCanBacktrack[<decisionNumber>]);

<decision>

```

} finally { DebugExitDecision(<decisionNumber>); }
<@postdecision()>
switch ( alt<decisionNumber> )
{
<alts:{a|altSwitchCase(i,a)}>
default:
goto loop<decisionNumber>;
}
}

loop<decisionNumber>:
;

} finally { DebugExitSubRule(<decisionNumber>); }
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum,alt) ::= <<
case <altNum>:
<@prealt()>
DebugEnterAlt(<altNum>);
<alt>
break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
}
>>

```



```

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(it) ::= <%
<@prematch(>
DebugLocation(<it.line>, <it.pos>);<\n>
<it.el><\n>
%>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions={ })
::= <<
<if(label)><label>=<labelType><endif>Match(input,<token>,Follow._<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<tokenRef(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

listLabelElem(label,elem,elemType) ::= <<
if (list_<label>==null) list_<label>=new List<<elemType; null={ <labelType> }>>();
list_<label>.Add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
Match(<char>); <checkRuleBacktrackFailure(>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchRange(<a>,<b>); <checkRuleBacktrackFailure(>
>>

```

```

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="",terminalOptions={}) ::= <<
<if(label)>
<matchSetLabel()>
<endif>
if (<s>)
{
input.Consume();
<postmatchCode>
<if(!LEXER)>state.errorRecovery=false;<endif><if(backtracking)>state.failed=false;<endif>
}
else
{
<ruleBacktrackFailure()>
MismatchedSetException
mse = new MismatchedSetException(null,input);
DebugRecognitionException(mse);
<@mismatchedSetException()>
<if(LEXER)>
Recover(mse);
throw mse;
<else>
throw mse;
<! use following code to make it recover inline; remove throw mse;
recoverFromMismatchedSet(input,mse,Follow._set_in_<ruleName><elementIndex>);
!>
<endif>
}<\n>
>>

```

```

matchSetUnchecked(s,label,elementIndex,postmatchCode=false) ::= <%
<if(label)>
<matchSetLabel()><\n>
<endif>
input.Consume();<\n>
<if(postmatchCode)>
<postmatchCode><\n>
<endif>
<if(!LEXER)>state.errorRecovery=false;<endif><if(backtracking)>state.failed=false;<endif>
%>

```

```

matchSetLabel() ::= <%
<if(LEXER)>
<label>= input.LA(1);
<else>
<label>=(<labelType>)input.LT(1);
<endif>

```

```

%>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/**
  Match a string literal */
lexerStringRef(string,label,elementIndex) ::= <%
<if(label)>
int <label>Start = CharIndex;<\n>
Match(<string>); <checkRuleBacktrackFailure()><\n>
int <label>StartLine<elementIndex> = Line;<\n>
int <label>StartCharPos<elementIndex> = CharPositionInLine;<\n>
<label> = new <labelType>(input, TokenTypes.Invalid, TokenChannels.Default, <label>Start, CharIndex-1);<\n>
<label>.Line = <label>StartLine<elementIndex>;<\n>
<label>.CharPositionInLine = <label>StartCharPos<elementIndex>;
<else>
Match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
%>

wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<wildcard(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex)
::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>

```

```

<listLabelElem(elem=label,elemType=labelType,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(Follow._<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope.delegateName()>.<endif><rule.name; format="id"><args;
separator="," ">);
PopFollow();
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelElem(elem=label,elemType={<ASTLabelType>},...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was
 the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <%
<if(label)>
int <label>Start<elementIndex> = CharIndex;<\n>
int <label>StartLine<elementIndex> = Line;<\n>
int <label>StartCharPos<elementIndex> = CharPositionInLine;<\n>
<if(scope)><scope.delegateName()>.<endif>m<rule.name><args; separator="," ">);
<checkRuleBacktrackFailure()><\n>
<label> = new <labelType>(input, TokenType.Invalid, TokenChannels.Default, <label>Start<elementIndex>,
CharIndex-1);<\n>
<label>.Line = <label>StartLine<elementIndex>;<\n>
<label>.CharPositionInLine = <label>StartCharPos<elementIndex>;
<else>
<if(scope)><scope.delegateName()>.<endif>m<rule.name><args; separator="," ">);
<checkRuleBacktrackFailure()>
<endif>
%>

/** i+=INT in lexer */

```

```

lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabelElem(elem=label,elemType=labelType,...)>
>>

/**
EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <%
<if(label)>
int <label>Start<elementIndex> = CharIndex;<\n>
int <label>StartLine<elementIndex> = Line;<\n>
int <label>StartCharPos<elementIndex> = CharPositionInLine;<\n>
Match(EOF); <checkRuleBacktrackFailure()><\n>
<labelType> <label> = new <labelType>(input, EOF, TokenChannels.Default, <label>Start<elementIndex>,
CharIndex-1);<\n>
<label>.Line = <label>StartLine<elementIndex>;<\n>
<label>.CharPositionInLine = <label>StartCharPos<elementIndex>;
<else>
Match(EOF); <checkRuleBacktrackFailure()>
<endif>
%>

// used for left-recursive rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction() ::= "root_0=$<ruleName>_primary.tree;"
recRuleSetReturnAction(src,name)  ::= "$<name>=$<src>.<name>;"

/** match ^(root children) in tree parser */
tree(root,
actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1) == TokenType.Down)
{
Match(input, TokenType.Down, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenType.Up, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, TokenType.Down, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenType.Up, null); <checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...>))
{
<ruleBacktrackFailure()>
throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<k> = input.LA(<k>);<\n>
<edges;
separator="\nelse ">
<if(!(!isTrue.(last(edges).labelExpr)) && (!last(edges).predicates))>
else
{
<if(eotPredictsAlt)>
alt<decisionNumber> = <eotPredictsAlt>;
<else>
<ruleBacktrackFailure()>
NoViableAltException nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>,
input, <k>);
DebugRecognitionException(nvae);
<@noViableAltException()>
throw nvae;
<endif>
}
<endif>
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<k> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it

```

```

* should act like a default clause (i.e., no error can be generated).
* This is used only in the lexer so that for ('a')* on the end of a rule
* anything other than 'a' predicts exiting.
*/
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<k> = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber> = <eotPredictsAlt>;<! if no edges, don't gen ELSE !>
<else>
else
{
alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>";

/** A simple edge with an expression. If the expression is satisfied,
* enter to the target state. To handle gated productions, we may
* have to evaluate some predicates for this edge.
*/
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr>)<if(predicates)> && (<predicates>)<endif>)
{
<targetState>
}
>>

//
F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
* decides if this is possible: CodeGenerator.canGenerateSwitch().
*/
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
alt<decisionNumber>=<eotPredictsAlt>;
break;<\n>
<else>

```

```

{
  <ruleBacktrackFailure()>
  NoViableAltException nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>,
input, <k>);
  DebugRecognitionException(nvae);
  <@noViableAltException()>
  throw nvae;
}
<endif>
}<\n>
>>

```

```

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
}<\n>
>>

```

```

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
<if(eotPredictsAlt)>
default:
alt<decisionNumber>=<eotPredictsAlt>;
break;<\n>
<endif>
}<\n>
>>

```

```

dfaEdgeSwitch(labels,
targetState) ::= <<
<labels: {it|case <it>:}; separator="\n">
{
<targetState>
}
break;
>>

```

// C y c l i c D F A

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */

```

```

dfaDecision(decisionNumber,description) ::= <<
try

```



```

{
    alt<decisionNumber> = dfa<decisionNumber>.Predict(input);
}
catch (NoViableAltException nvae)
{
    DebugRecognitionException(nvae);
    throw;
}
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
* Can't use hex as compiler translates them before compilation.
* These strings are split into multiple, concatenated strings.
* Java puts them back together at compile time thankfully.
* Java cannot handle large static arrays, so we're stuck with this
* encode/decode approach. See analysis and runtime DFA for
* the encoding methods.
*/
cyclicDFA(dfa)
::= <<
private class DFA<dfa.decisionNumber> : DFA
{
    private const string DFA<dfa.decisionNumber>_eotS =
        "<dfa.javaCompressedEOT; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_eofS =
        "<dfa.javaCompressedEOF; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_minS =
        "<dfa.javaCompressedMin; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_maxS =
        "<dfa.javaCompressedMax; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_acceptS =
        "<dfa.javaCompressedAccept; wrap=\""+\n\t\t\">";
    private const string DFA<dfa.decisionNumber>_specialS =
        "<dfa.javaCompressedSpecial; wrap=\""+\n\t\t\">}>";
    private static readonly string[] DFA<dfa.decisionNumber>_transitionS =
    {
        <dfa.javaCompressedTransition:{s|"<s; wrap=\""+\n\t\t\">"}; separator=",\n">
    };

    private static readonly short[] DFA<dfa.decisionNumber>_eot =
    DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eotS);
    private static readonly short[]
    DFA<dfa.decisionNumber>_eof = DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eofS);
    private static readonly char[] DFA<dfa.decisionNumber>_min =
    DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
    private static readonly char[] DFA<dfa.decisionNumber>_max =
    DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
    private static readonly short[] DFA<dfa.decisionNumber>_accept =

```

```

DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
private static readonly short[] DFA<dfa.decisionNumber>_special =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_specialS);
private static readonly short[][] DFA<dfa.decisionNumber>_transition;

static DFA<dfa.decisionNumber>()
{
    int numStates = DFA<dfa.decisionNumber>_transitionS.Length;
    DFA<dfa.decisionNumber>_transition = new short[numStates][];
    for ( int i=0; i < numStates; i++ )
    {
        DFA<dfa.decisionNumber>_transition[i] =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_transitionS[i]);
    }
}

public
DFA<dfa.decisionNumber>( BaseRecognizer recognizer<if(dfa.specialStateSTs)>, SpecialStateTransitionHandler
specialStateTransition<endif> )
<if(dfa.specialStateSTs)>
    : base(specialStateTransition)
<endif>
{
    this.recognizer = recognizer;
    this.decisionNumber = <dfa.decisionNumber>;
    this.eot = DFA<dfa.decisionNumber>_eot;
    this.eof = DFA<dfa.decisionNumber>_eof;
    this.min = DFA<dfa.decisionNumber>_min;
    this.max = DFA<dfa.decisionNumber>_max;
    this.accept = DFA<dfa.decisionNumber>_accept;
    this.special = DFA<dfa.decisionNumber>_special;
    this.transition = DFA<dfa.decisionNumber>_transition;
}

public override string Description { get { return "<dfa.description>"; } }

public override void Error(NoViableAltException nvae)
{
    DebugRecognitionException(nvae);
}
}<\n>
<if(dfa.specialStateSTs)>
private int SpecialStateTransition<dfa.decisionNumber>(DFA dfa, int s, IIntStream _input)<! throws
NoViableAltException!>
{
    <if(LEXER)>
    IIntStream input = _input;
    <endif>

```

```

<if(PARSER)>
ITokenStream
input = (ITokenStream)_input;
<endif>
<if(TREE_PARSER)>
ITreeNodeStream input = (ITreeNodeStream)_input;
<endif>
int _s = s;
s = -1;
<! pull these outside the switch cases to save space on locals !>
int LA<dfa.decisionNumber>_1 = input.LA(1);
int index<dfa.decisionNumber>_1 = input.Index;
switch (_s)
{
<dfa.specialStateSTs:{state |case <i0>:<! compressed special state numbers 0..n-1 !>
<state> }; separator="\n">

default:
break;
}

if (s >= 0)
return s;

<if(backtracking)>
if (state.backtracking > 0) { state.failed=true; return -1;}
<endif>
NoViableAltException nvae = new NoViableAltException(dfa.Description, <dfa.decisionNumber>, _s, input);
dfa.Error(nvae);
throw nvae;
}
<endif>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFASState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
{
<if(semPredState)>
<! get next lookahead symbol to test edges, then rewind !>
input.Rewind();
<endif>
<edges;
separator="\nelse ">
<if(semPredState)>
<! return input cursor to state before we rewound !>
input.Seek(index<decisionNumber>_1);

```

```

<endif>
break;
}
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr><if(predicates)> && (<predicates><endif>) {s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "(<left>&&<right>)"

orPredicates(operands) ::= "(<operands; separator=\\|\\>)"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "(<pred>)"

evalSynPredicate(pred,description) ::= "EvaluatePredicate(<pred>_fragment)"

lookaheadTest(atom,k,atomAsInt)
::= "LA<decisionNumber>_<k>==<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
(LA<decisionNumber>_<k><ge()><lower> && LA<decisionNumber>_<k><le()><upper>)
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::=
"(input.LA(<k><ge()><lower> && input.LA(<k><le()><upper>)"

le() ::= "\<="

```

```

ge() ::= ">="

setTest(ranges) ::= <<
<ranges; separator="|">
>>

// A T T R I B U T E S

attributeScope(scope) ::= <<
<if(scope)>
<if(scope.attributes)>
protected sealed partial class <scope.name>_scope
{
<scope.attributes: { it|public <it.decl>; }; separator="\n">
}
<if(scope.actions.scopeinit)>
protected void <scope.name>_scopeInit( <scope.name>_scope scope )
{
<scope.actions.scopeinit>
}
<else>
protected virtual void <scope.name>_scopeInit(
<scope.name>_scope scope ) { }
<endif>
<if(scope.actions.scopeafter)>
protected void <scope.name>_scopeAfter( <scope.name>_scope scope )
{
<scope.actions.scopeafter>
}
<else>
protected virtual void <scope.name>_scopeAfter( <scope.name>_scope scope ) { }
<endif>
protected readonly ListStack<<scope.name>_scope> <scope.name>_stack = new
ListStack<<scope.name>_scope>();
<endif>
<endif>
>>

globalAttributeScope(scope) ::= <<
<attributeScope(...)>
>>

ruleAttributeScope(scope) ::= <<
<attributeScope(...)>
>>

returnStructName(it) ::= "<it.name>_return"

```

```

returnType(ruleDescriptor) ::= <%
<if(ruleDescriptor.returnScope.attributes && ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<elseif(ruleDescriptor.hasMultipleReturnValues)>
<ruleReturnBaseType()>
<elseif(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
%>

```

```

/** Generate the C# type associated with
a single or multiple return
* values.
*/

```

```

ruleLabelType(referencedRule) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
<ruleReturnBaseType()>
<elseif(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
%>

```

```

delegateName(it) ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

```

```

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/

```

```

initValue(typeName) ::= <<
default(<typeName>)
>>

```

```

/** Define a rule label including default value */

```

```

ruleLabelDef(label) ::= <%
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;
%>

```

```

/** Define a return struct for a rule if the code needs to access its

```

```

* start/stop tokens, tree stuff, attributes, ... Leave a hole for
* subgroups to stick in members.

```

```

*/

```

```

returnScope(scope) ::= <<

```

```

<if(scope.attributes && ruleDescriptor.hasMultipleReturnValues)>
<returnScopeModifier(grammar=grammar,ruleDescriptor=ruleDescriptor)>
sealed partial class <ruleDescriptor:returnStructName()> : <ruleReturnBaseType()><@ruleReturnInterfaces()>
{
<scope.attributes:{it|public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>
}
<endif>
>>

```

```

ruleReturnBaseType() ::= <%
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope\<<labelType>>
%>

```

```

@returnScope.ruleReturnMembers() ::= <<
>>

```

```

parameterScope(scope) ::= <<
<scope.attributes:{it|<it.decl>}; separator=" ">
>>

```

```

parameterAttributeRef(attr) ::= <<
<attr.name; format="id">
>>

```

```

parameterSetAttributeRef(attr,expr) ::= <<
<attr.name; format="id"> =<expr>;
>>

```

```

scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack[<scope>_stack.Count - <negIndex> - 1].<attr.name; format="id">
<else>
<if(index)>
<scope>_stack[<index>].<attr.name; format="id">
<else>
<scope>_stack.Peek().<attr.name; format="id">
<endif>
<endif>
%>

```

```

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::=
<%
<if(negIndex)>
<scope>_stack[<scope>_stack.Count - <negIndex> - 1].<attr.name; format="id"> = <expr>;
<else>
<if(index)>
<scope>_stack[<index>].<attr.name; format="id"> = <expr>;

```

```

<else>
<scope>_stack.Peek().<attr.name; format="id"> = <expr>;
<endif>
<endif>
%>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.Count>0 && $function::name.Equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?(<<return Type(referencedRule)>><scope>).<attr.name; format="id">:<init Value(attr.type)>)
<else>
<scope>
<endif>
%>

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name; format="id">
<else>
<attr.name; format="id">
<endif>
%>

returnSetAttributeRef(ruleDescriptor,attr,expr)
::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name; format="id"> =<expr>;
<else>
<attr.name; format="id"> =<expr>;
<endif>
%>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(<scope>!=null?<scope>.Text.default(string))"

```



```

tokenLabelPropertyRef_type(scope,attr) ::= "<scope>!=null?<scope>.Type:0)"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>!=null?<scope>.Line:0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>!=null?<scope>.CharPositionInLine:0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>!=null?<scope>.Channel:0)"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>!=null?<scope>.TokenIndex:0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>!=null?int.Parse(<scope>.Text):0)"

ruleLabelPropertyRef_start(scope,attr)
::= "<scope>!=null?((<labelType><scope>.Start):default(<labelType>))"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>!=null?((<labelType><scope>.Stop):default(<labelType>))"
ruleLabelPropertyRef_tree(scope,attr) ::=
"<scope>!=null?((<ASTLabelType><scope>.Tree):default(<ASTLabelType>))"
ruleLabelPropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
(<scope>!=null?(input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(<scope>.Start),
input.TreeAdaptor.GetTokenStopIndex(<scope>.Start))):default(string))
<else>
(<scope>!=null?input.ToString(<scope>.Start,<scope>.Stop):default(string))
<endif>
%>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>!=null?<scope>.Template:null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
"<scope>!=null?<scope>.Type:0)"

lexerRuleLabelPropertyRef_line(scope,attr) ::=
"<scope>!=null?<scope>.Line:0)"

lexerRuleLabelPropertyRef_pos(scope,attr)
::=
"<scope>!=null?<scope>.CharPositionInLine:-1)"

lexerRuleLabelPropertyRef_channel(scope,attr) ::=
"<scope>!=null?<scope>.Channel:0)"

lexerRuleLabelPropertyRef_index(scope,attr) ::=
"<scope>!=null?<scope>.TokenIndex:0)"

lexerRuleLabelPropertyRef_text(scope,attr) ::=
"<scope>!=null?<scope>.Text:default(string)"

lexerRuleLabelPropertyRef_int(scope,attr) ::=

```

```

"(<scope>!=null?int.Parse(<scope>.Text):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.Start"
rulePropertyRef_stop(scope,attr) ::= "retval.Stop"
rulePropertyRef_tree(scope,attr) ::= "retval.Tree"
rulePropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(retval.Start),
input.TreeAdaptor.GetTokenStopIndex(retval.Start))
<else>
input.ToString(retval.Start,input.LT(-1))
<endif>
%>
rulePropertyRef_st(scope,attr)
::= "retval.Template"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(CharIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int.Parse(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.Tree = <expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.Template =<expr>;"

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <%
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)<\n>
{<\n>
<@indentedAction()><\n>
}
<else>
<action>
<endif>
%>

@execAction.indentedAction()
::= <<
<action>

```

>>

```
/** How to always execute an action even when backtracking */  
execForcedAction(action) ::= "<action>"
```

```
// M I S C (properties, etc...)
```

```
bitset(name, words64) ::= <<  
public static readonly BitSet <name> = new BitSet(new ulong[] { <words64: {it|<it>UL}; separator=", "> });  
>>
```

```
codeFileExtension() ::= ".cs"
```

```
true_value() ::= "true"  
false_value() ::= "false"
```

```
isTrue ::= [  
  "true" : true,  
  default : false  
]
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/codegen/templates/CSharp2/CSharp2.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
[The "BSD license"]
```

```
Copyright (c) 2005-2006 Terence Parr
```

```
All rights reserved.
```

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*/

/** The API version of the runtime that recognizers generated by this runtime

* need.

*/

apiVersion() ::= "1"

// System.Boolean.ToString() returns "True" and "False", but the proper C# literals are "true" and "false"

// The Java version of Boolean returns "true" and "false", so they map to themselves here.

booleanLiteral ::= [

 "True": "true",

 "False": "false",

 "true": "true",

 "false": "false",

 default: "false"

]

/** The overall file structure

of a recognizer; stores methods for rules

* and cyclic DFAs plus support code.

*/

outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,

 docComment, recognizer,

 name, tokens, tokenNames, rules, cyclicDFAs,

 bitsets, buildTemplate, buildAST, rewriteMode, profile,

 backtracking, synpreds, memoize, numRules,

 fileName, ANTLRVersion, generatedTimestamp, trace,

 scopes, superClass, literals) ::=

<<

\$ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<@imports>

import sys

from antlr3 import *

<if(TREE_PARSER)>

from antlr3.tree import *<\n>

<endif>

from antlr3.compat import set, frozenset

<@end>

<actions.(actionScope).header>

<! <docComment> !>

```

# for convenience in actions
HIDDEN = BaseRecognizer.HIDDEN

# token types
<tokens:{it | <it.name>=<it.type>}; separator="\n">

<recognizer>

<if(actions.(actionScope).main)>
<actions.(actionScope).main>
<else>
def main(argv, stdin=sys.stdin, stdout=sys.stdout, stderr=sys.stderr):
<if(LEXER)>
    from antlr3.main import LexerMain
    main = LexerMain(<recognizer.name>)<\n>
<endif>
<if(PARSER)>
    from antlr3.main import ParserMain
    main = ParserMain("<recognizer.grammar.name>Lexer", <recognizer.name>)<\n>
<endif>
<if(TREE_PARSER)>
    from antlr3.main import WalkerMain
    main = WalkerMain(<recognizer.name>)<\n>
<endif>
    main.stdin = stdin
    main.stdout = stdout
    main.stderr = stderr
    main.execute(argv)<\n>
<endif>

<actions.(actionScope).footer>

if __name__ == '__main__':
    main(sys.argv)

>>

lexer(grammar, name, tokens, scopes, rules, numRules, filterMode,
    labelType="CommonToken", superClass="Lexer") ::= <<
<grammar.directDelegates:
{g|from <g.recognizerName> import <g.recognizerName>}; separator="\n">

class <grammar.recognizerName>(<@superClassName><superClass><@end>):
    <scopes:{it|<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>>

    grammarFileName = "<fileName>"
    api_version = <apiVersion()>

```

```

def __init__(self<grammar.delegators:{g| <g:delegateName()>>}, input=None, state=None):
    if state is None:
        state = RecognizerSharedState()
        super(<grammar.recognizerName>, self).__init__(input, state)

<if(memoize)>
<if(grammar.grammarIsRoot)>
    self._state.ruleMemo = {}
<endif>
<endif>

    <grammar.directDelegates:
        {g|self.<g:delegateName()> = <g.recognizerName><(trunc(g.delegators):{p|<p:delegateName()>, }>self, input,
state)}; separator="\n">
    <grammar.directDelegates:
        {g|<g.delegates:{h|self.<h:delegateName()> = self.<g:delegateName()>.<h:delegateName()>};
separator="\n">}; separator="\n">
    <grammar.delegators:
        {g|self.<g:delegateName()> = <g:delegateName()>}; separator="\n">
    <last(grammar.delegators):
        {g|self.gParent = <g:delegateName()>}; separator="\n">
        self.delegates = [<grammar.delegates: {g|self.<g:delegateName()>}; separator = ", ">]

    <cyclicDFAs:{dfa | <cyclicDFAInit(dfa)>};
separator="\n">

    <actions.lexer.init>

    <actions.lexer.members>

<if(filterMode)>
    <filteringNextToken()>
<endif>
    <rules; separator="\n\n">

    <synpreds:{p | <lexerSynpred(p)>}>

    <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.

```

```

* Make rule memoization happen only at levels above 1 as we start mTokens
* at backtracking==1.
*/
filteringNextToken() ::= <<
def nextToken(self):
    while True:
        if self.input.LA(1) == EOF:
            return self.makeEOFToken()

        self._state.token = None
        self._state.channel = DEFAULT_CHANNEL
        self._state.tokenStartCharIndex = self.input.index()
        self._state.tokenStartCharPositionInLine = self.input.charPositionInLine
        self._state.tokenStartLine
= self.input.line
        self._state._text = None
        try:
            m = self.input.mark()
            try:
                # means we won't throw slow exception
                self._state.backtracking = 1
                try:
                    self.mTokens()
                finally:
                    self._state.backtracking = 0

            except BacktrackingFailed:
                # mTokens backtracks with synpred at backtracking==2
                # and we set the synpredgate to allow actions at level 1.
                self.input.rewind(m)
                self.input.consume() # advance one char and try again

        else:
            self.emit()
            return self._state.token

    except RecognitionException, re:
        # shouldn't happen in backtracking mode, but...
        self.reportError(re)
        self.recover(re)

def memoize(self, input, ruleIndex, ruleStartIndex, success):
    if self._state.backtracking > 1:
        #
is Lexer always superclass?
        super(<grammar.recognizerName>, self).memoize(input, ruleIndex, ruleStartIndex, success)

```

```

def alreadyParsedRule(self, input, ruleIndex):
    if self._state.backtracking > 1:
        return super(<grammar.recognizerName>, self).alreadyParsedRule(input, ruleIndex)
    return False

>>

actionGate() ::= "self._state.backtracking == 0"

filteringActionGate() ::= "self._state.backtracking == 1"

/** How to generate a parser */

genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
              bitsets, inputStreamType, superClass, labelType, members,
              rewriteElementType, filterMode, init, ASTLabelType="Object") ::= <<
<if(grammar.grammarIsRoot)>
# token names
tokenNames = [
    "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>",
    <tokenNames; wrap, separator=",">
]<\n>
<else>
from <grammar.composite.rootGrammar.recognizerName> import tokenNames<\n>
<endif>
<scopes:{it|<if(it.isDynamicGlobalScope)><globalAttributeScopeClass(scope=it)><endif>}>

<grammar.directDelegates:
{g|from <g.recognizerName> import <g.recognizerName>}; separator="\n">

<rules:{it|<ruleAttributeScopeClass(scope=it.ruleDescriptor.ruleScope)>}>

class <grammar.recognizerName>(<@superClassName><superClass><@end>):
    grammarFileName = "<fileName>"
    api_version = <apiVersion()>
    tokenNames = tokenNames

    def __init__(self<grammar.delegators:{g|,<g.delegateName()>}>, input, state=None, *args, **kwargs):
        if state is None:
            state = RecognizerSharedState()

        <@args()>
        super(<grammar.recognizerName>, self).__init__(input, state, *args, **kwargs)

<if(memoize)>
<if(grammar.grammarIsRoot)>

```



```

    self._state.ruleMemo = {}
<endif>
<endif>

    <cyclicDFAs:{ dfa | <cyclicDFAInit(dfa)>}; separator="\n">

    <scopes:{ it | <if(it.isDynamicGlobalScope)><globalAttributeScopeStack(scope=it)><endif>}>
    <rules:{ it | <ruleAttributeScopeStack(scope=it.ruleDescriptor.ruleScope)>}>

    <init>

    <grammar.delegators:
    { g|self.<g:delegateName()> = <g:delegateName()>}; separator="\n">
    <grammar.directDelegates:
    { g|self.<g:delegateName()> = <g.recognizerName>(<trunc(g.delegators):{ p|<p:delegateName()>, }>self, input,
state)); separator="\n">
    <grammar.directDelegates:
    { g|<g.delegates:{ h|self.<h:delegateName()> = self.<g:delegateName()>.<h:delegateName()>};
separator="\n">}; separator="\n">
    <last(grammar.delegators):
    { g|self.gParent = self.<g:delegateName()>}; separator="\n">
    self.delegates = [<grammar.delegates: { g|self.<g:delegateName()>}; separator = ", ">]

<@init><@end>

<@members><@end>

<members>

<rules; separator="\n\n">

<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
<grammar.delegatedRules:{ ruleDescriptor| <delegateRule(ruleDescriptor)> }; separator="\n">

<synpreds:{ p | <synpred(p)>}>

<cyclicDFAs:cyclicDFA()> <! dump
tables for all DFA !>

    <bitsets:{ it | FOLLOW_<it.name>_in_<it.inName><it.tokenIndex> = frozenset([<it.tokenTypes:{ it |
<it>};separator=", ">])<n>}>

>>

delegateRule(ruleDescriptor) ::= <<
def <ruleDescriptor.name>(self, <ruleDescriptor.parameterScope:parameterScope()>):

```

```

<\> <if(ruleDescriptor.hasReturnValue)>return
<endif>self.<ruleDescriptor.grammar:delegateName().<ruleDescriptor.name><if(ruleDescriptor.parameterScope)
><ruleDescriptor.parameterScope.attributes:{a|<a.name>}; separator=", "><endif>

>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
  ASTLabelType="Object", superClass="Parser", labelType="Token",
  members={<actions.parser.members>},
  init={<actions.parser.init>}
) ::= <<
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
  bitsets, "TokenStream", superClass,
  labelType, members, "Token",
  false, init, ASTLabelType)>
>>

/** How to generate a tree
  parser; same as parser except the input
  * stream is a different type.
  */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
  numRules, bitsets, filterMode, labelType={<ASTLabelType>}, ASTLabelType="Object",
  superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif>},
  members={<actions.treeparser.members>},
  init={<actions.treeparser.init>}
) ::= <<
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
  bitsets, "TreeNodeStream", superClass,
  labelType, members, "Node",
  filterMode, init, ASTLabelType)>
>>

/** A simpler version of a rule template that is specific to the imaginary
  * rules created for syntactic predicates. As they never have return values
  * nor parameters etc..., just give simplest possible method. Don't do
  * any of the normal memoization stuff in here either; it's a waste.
  * As predicates
  cannot be inlined into the invoking rule, they need to
  * be in a rule by themselves.
  */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
# $ANTLR start "<ruleName>"
def <ruleName>_fragment(self, <ruleDescriptor.parameterScope:parameterScope()):
  <ruleLabelDefs(>
<if(trace)>

```

```

self.traceIn("<ruleName>_fragment", <ruleDescriptor.index>)
try:
    <block>

finally:
    self.traceOut("<ruleName>_fragment", <ruleDescriptor.index>)

<else>
    <block>
<endif>
# $ANTLR end "<ruleName>"

```

```
>>
```

```

synpred(name) ::= <<
def <name>(self):
    self._state.backtracking += 1
    <@start()>
    start = self.input.mark()
    try:
        self.<name>_fragment()
    except BacktrackingFailed:
        success = False
    else:
        success = True
    self.input.rewind(start)
    <@stop()>
    self._state.backtracking -= 1
    return success

```

```
>>
```

```

lexerSynpred(name) ::= <<
<synpred(name)>
>>

```

```

ruleMemoization(name) ::= <<
<if(memoize)>
if self._state.backtracking
> 0 and self.alreadyParsedRule(self.input, <ruleDescriptor.index>):
    # for cached failed rules, alreadyParsedRule will raise an exception
    success = True
    return <ruleReturnValue()>

```

```
<endif>
```

```
>>
```

```

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>
if self._state.backtracking > 0:
    raise BacktrackingFailed

<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<returnScope(scope=ruleDescriptor.returnScope)>

# $ANTLR start "<ruleName>"
# <fileName>:<description>
<ruleDescriptor.actions.decorate>
def <ruleName>(self, <ruleDescriptor.parameterScope:parameterScope()):
<if(trace)>
    self.traceIn("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
    <ruleScopeSetUp()>
    <ruleDeclarations()>
    <ruleLabelDefs()>
    <ruleDescriptor.actions.init>
    <@preamble()>
    <@body><ruleBody()><@end>
    <@postamble()>
    return <ruleReturnValue()>

# $ANTLR end "<ruleName>"
>>

ruleBody() ::= <<
<if(memoize)>
<if(backtracking)>
success = False<\n>
<endif>
<endif>
try:
    try:
        <ruleMemoization(name=ruleName)>
        <block>
        <ruleCleanUp()>
        <(ruleDescriptor.actions.after):execAction()>

```

```

<if(memoize)>
<if(backtracking)>
    success = True<\n>
<endif>
<endif>
<if(exceptions)>
    <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
    <actions.(actionScope).rulecatch>
<else>
    except RecognitionException, re:
        self.reportError(re)
        self.recover(self.input, re)
        <@setErrorReturnValue()>

<endif>
<else>
    finally:
        pass

<endif>
<endif>
finally:
<if(trace)>
    self.traceOut("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
    <memoize()>
    <ruleScopeCleanUp()>
    <finally>
    pass
>>

catch(decl,action)
::= <<
except <e.decl>:
    <e.action>

>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval = self.<ruleDescriptor.name>_return()
retval.start = self.input.LT(1)<\n>
<elseif(ruleDescriptor.returnScope)>
<ruleDescriptor.returnScope.attributes:{ a |
<a.name> = <if(a.initValue)><a.initValue><else>None<endif>

```

```

}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_startIndex = self.input.index()
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{it | self.<it>_stack.append(<it>_scope()); separator="\n">
<ruleDescriptor.ruleScope:{it | self.<it.name>_stack.append(<it.name>_scope()); separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{it | self.<it>_stack.pop(); separator="\n">
<ruleDescriptor.ruleScope:{it | self.<it.name>_stack.pop(); separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {it | <it.label.text> = None }; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,
ruleDescriptor.wildcardTreeListLabels]
: {it | list_<it.label.text> = None }; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
<ruleDescriptor.ruleListLabels:{it | <it.label.text> = None }; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {it | <it.label.text> = None }; separator="\n"
>
<ruleDescriptor.charLabels:{it | <it.label.text> = None }; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {it | list_<it.label.text> = None }; separator="\n"
>
>>

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>

```

```

<else>
retval
<endif>
<endif>
<endif>
%>

ruleCleanUp() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop
= self.input.LT(-1)<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if self._state.backtracking > 0:
    self.memoize(self.input, <ruleDescriptor.index>, <ruleDescriptor.name>_startIndex, success)

<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
# $ANTLR start "<ruleName>"
def m<ruleName>(self, <ruleDescriptor.parameterScope:parameterScope()>):
<if(trace)>
    self.traceIn("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
    <ruleScopeSetUp()>
    <ruleDeclarations()>
<if(memoize)>
<if(backtracking)>
    success = False<\n>
<endif>
<endif>
    try:
<if(nakedBlock)>
        <ruleMemoization(name=ruleName)>
        <lexerRuleLabelDefs()>
        <ruleDescriptor.actions.init>
        <block><\n>

```

```

<else>
  _type = <ruleName>
  _channel = DEFAULT_CHANNEL

  <ruleMemoization(name=ruleName)>
  <lexerRuleLabelDefs()>
  <ruleDescriptor.actions.init>
  <block>
  <ruleCleanUp()>
  self._state.type = _type
  self._state.channel = _channel
  <(ruleDescriptor.actions.after):execAction()>
<endif>
<if(memoize)>
<if(backtracking)>
  success = True<\n>
<endif>
<endif>

  finally:
<if(trace)>
  self.traceOut("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
  <ruleScopeCleanUp()>
  <memoize()>
  pass

# $ANTLR end "<ruleName>"

>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
def mTokens(self):
  <block><\n>

>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>
alt<decisionNumber> = <maxAlt>

```



```
<decls>
<@body><blockBody()><@end>
>>
```

```
blockBody()
 ::= <<
<@predecision()>
<@decision><decision><@end>
<@postdecision()>
<@prebranch()>
<alts:{ a | <altSwitchCase(i, a)> }; separator="\nel">
<@postbranch()>
>>
```

```
/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>
alt<decisionNumber> = <maxAlt>
<decls>
<@predecision()>
<@decision><decision><@end>
<@postdecision()>
<alts:{ a | <altSwitchCase(i, a)> }; separator="\nel">
>>
```

```
ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
# <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>
```

```
/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
# <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>
```

```
/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
# <fileName>:<description>
cnt<decisionNumber> = 0
```

```

<decls>
<@preloop()>
<@loopBody>
<positiveClosureBlockLoop()>
<@end>
<@postloop()>
>>

positiveClosureBlockLoop() ::= <<
while True: #loop<decisionNumber>
  alt<decisionNumber> = <maxAlt>
  <@predecision()>
  <@decisionBody><decision><@end>
  <@postdecision()>
  <alts:{a | <altSwitchCase(i, a)>} ; separator="\nel">
  else:
    if cnt<decisionNumber> >= 1:
      break #loop<decisionNumber>

  <ruleBacktrackFailure()>
  eee = EarlyExitException(<decisionNumber>, self.input)
  <@earlyExitException()>
  raise eee

  cnt<decisionNumber> += 1
>>

```

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
# <fileName>:<description>
<decls>
<@preloop()>
<@loopBody>
<closureBlockLoop()>
<@end>
<@postloop()>
>>

```

```

closureBlockLoop()
::= <<
while True: #loop<decisionNumber>
  alt<decisionNumber> = <maxAlt>
  <@predecision()>
  <@decisionBody><decision><@end>
  <@postdecision()>

```

```

    <alts:{a | <altSwitchCase(i, a)>} ; separator="\nel">
    else:
        break #loop<decisionNumber>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase(altNum,alt) ::= <<
if alt<decisionNumber> == <altNum>:
    <@prealt()>
    <alt>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,
treeLevel,rew) ::= <<
# <fileName>:<description>
pass <! so empty alternatives are a valid block !>
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(e) ::= <<
<@prematch()>
<e.el><\n>
>>

```

```

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
<if(label)><label> = <endif>self.match(self.input, <token>,
self.FOLLOW_<token>_in_<ruleName><elementIndex>)
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(token,label,elementIndex,terminalOptions)>
<listLabel(label, label)>
>>

listLabel(label, elem) ::= <<
if list_<label> is None:
    list_<label> = []
list_<label>.append(<elem>)<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label>
= self.input.LA(1)<\n>
<endif>
self.match(<char>)
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.matchRange(<a>, <b>)
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="",terminalOptions={}) ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
if <s>:
    self.input.consume()
    <postmatchCode>
<if(!LEXER)>
    self._state.errorRecovery = False<\n>
<endif>

else:

```

```

<ruleBacktrackFailure()>
mse = MismatchedSetException(None, self.input)
<@mismatchedSetException()>
<if(LEXER)>
self.recover(mse)
raise mse
<else>
raise mse
<! use following code to make it recover inline; remove throw mse;
self.recoverFromMismatchedSet(
self.input, mse, self.FOLLOW_set_in_<ruleName><elementIndex>
)
!>
<endif>
<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(label,
label)>
>>

```

```

/** Match a string literal */

```

```

lexerStringRef(string,label,elementIndex="0") ::= <<
<if(label)>
<label>Start = self.getCharIndex()
self.match(<string>)
<label>StartLine<elementIndex> = self.getLine()
<label>StartCharPos<elementIndex> = self.getCharPositionInLine()
<label> = <labelType>(input=self.input, type=INVALID_TOKEN_TYPE, channel=DEFAULT_CHANNEL,
start=<label>Start, stop=self.getCharIndex()-1)
<label>.setLine(<label>StartLine<elementIndex>)
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>)
<else>
self.match(<string>)
<endif>
>>

```

```

wildcard(token,label,elementIndex,terminalOptions={}) ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
self.matchAny(self.input)
>>

```

```

wildcardAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<wildcard(...)>
<listLabel(label,label)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.matchAny()
>>

wildcardCharListLabel(label,
elementIndex) ::= <<
<wildcardChar(label, elementIndex)>
<listLabel(label, label)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
self._state.following.append(self.FOLLOW_<rule.name>_in_<ruleName><elementIndex>)
<if(label)><label> = <endif>self.<if(scope)><scope:delegateName()>.<endif><rule.name><(args; separator=",
">><\n>
self._state.following.pop()
>>

/** ids+=rule */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(rule,label,elementIndex,args,scope)>
<listLabel(label, label)>
>>

/** A lexer rule reference
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access
 * full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
<label>Start<elementIndex> = self.getCharIndex()
self.<if(scope)><scope:delegateName()>.<endif>m<rule.name><(args; separator=", ">

```

```

<label>StartLine<elementIndex> = self.getLine()
<label>StartCharPos<elementIndex> = self.getCharPositionInLine()
<label> = <labelType>(
  input=self.input,
  type=INVALID_TOKEN_TYPE,
  channel=DEFAULT_CHANNEL,
  start=<label>Start<elementIndex>,
  stop=self.getCharIndex()-1)
<label>.setLine(<label>StartLine<elementIndex>)
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>)
<else>
self.<if(scope)><scope.delegateName()>.<endif>m<rule.name>(<args; separator=", ">)
<endif>
>>

```

```

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(rule,label,args,elementIndex,scope)>
<listLabel(label, label)>
>>

```

```

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
<label>Start<elementIndex>
= self.getCharIndex()
<label>StartLine<elementIndex> = self.getLine()
<label>StartCharPos<elementIndex> = self.getCharPositionInLine()
self.match(EOF)
<label> = <labelType>(input=self.input, type=EOF, channel=DEFAULT_CHANNEL,
start=<label>Start<elementIndex>, stop=self.getCharIndex()-1)
<label>.setLine(<label>StartLine<elementIndex>)
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>)
<else>
self.match(EOF)
<endif>
>>

```

```

// used for left-recursive rules
recRuleDefArg()          ::= "<recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName, opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction() ::= "root_0 = $<ruleName>_primary.tree"
recRuleSetReturnAction(src, name) ::= "$<name> = $<src>.<name>"

```

```

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
  enclosingTreeLevel, treeLevel) ::= <<

```

```

<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if
self.input.LA(1) == DOWN:
    self.match(self.input, DOWN, None)
    <children:element()>
    self.match(self.input, UP, None)

<else>
self.match(self.input, DOWN, None)
<children:element()>
self.match(self.input, UP, None)
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if not (<evalPredicate(pred, description)>):
    <ruleBacktrackFailure()>
    raise FailedPredicateException(self.input, "<ruleName>", "<description>")

>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\n" >
else:
<if(eotPredictsAlt)>
    alt<decisionNumber> = <eotPredictsAlt>
<else>
    <ruleBacktrackFailure()>
    nvae = NoViableAltException("<description>", <decisionNumber>, <stateNumber>, self.input)<\n>

<@noViableAltException()>
    raise nvae<\n>
<endif>
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */

```



```

dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\nel">
>>

```

```

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */

```

```

dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\nel"><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>
= <eotPredictsAlt> <! if no edges, don't gen ELSE !>
<else>
else:
  alt<decisionNumber> = <eotPredictsAlt>
<\n>
<endif>
<endif>
>>

```

```

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>"

```

```

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */

```

```

dfaEdge(labelExpr, targetState, predicates) ::= <<
if (<labelExpr>) <if(predicates)>and (<predicates>)<endif>:
  <targetState>
>>

```

```

// F i x e d D F A (switch case)

```

```

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */

```

```

dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
<!
  FIXME: this is one of the few occasion, where I miss a switch statement
  in Python.

```

ATM this is implemented as a list of if .. elif ..

This may be replaced by faster a dictionary lookup, when I find a solution for the cases when an edge is not a plain dfaAcceptState.

```
!>
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\nел">
else:
<if(eotPredictsAlt)>
    alt<decisionNumber> = <eotPredictsAlt>
<else>
    <ruleBacktrackFailure()>
    nvae = NoViableAltException("<description>", <decisionNumber>, <stateNumber>, self.input)<\n>
    <@noViableAltException()>
    raise nvae<\n>
<endif>

>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\nел">
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\nел">
<if(eotPredictsAlt)>
else:
    alt<decisionNumber> = <eotPredictsAlt>
<endif>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
if <labels:{it | LA<decisionNumber>
== <it>}>; separator=" or ">:
    <targetState>
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = self.dfa<decisionNumber>.predict(self.input)
>>
```

```

/* Dump DFA tables as run-length-encoded Strings of octal values.
* Can't use hex as compiler translates them before compilation.
* These strings are split into multiple, concatenated strings.
* Java puts them back together at compile time thankfully.
* Java cannot handle large static arrays, so we're stuck with this
* encode/decode approach. See analysis and runtime DFA for
* the encoding methods.
*/
cyclicDFA(dfa) ::= <<
# lookup tables for DFA #<dfa.decisionNumber>

DFA<dfa.decisionNumber>_eot = DFA.unpack(
  u"<dfa.javaCompressedEOT; wrap="\n  u\>"
  )

DFA<dfa.decisionNumber>_eof
= DFA.unpack(
  u"<dfa.javaCompressedEOF; wrap="\n  u\>"
  )

DFA<dfa.decisionNumber>_min = DFA.unpack(
  u"<dfa.javaCompressedMin; wrap="\n  u\>"
  )

DFA<dfa.decisionNumber>_max = DFA.unpack(
  u"<dfa.javaCompressedMax; wrap="\n  u\>"
  )

DFA<dfa.decisionNumber>_accept = DFA.unpack(
  u"<dfa.javaCompressedAccept; wrap="\n  u\>"
  )

DFA<dfa.decisionNumber>_special = DFA.unpack(
  u"<dfa.javaCompressedSpecial; wrap="\n  u\>"
  )

DFA<dfa.decisionNumber>_transition = [
  <dfa.javaCompressedTransition:{s|DFA.unpack(u"<s; wrap="\nu\>"}); separator=",\n">
]

# class definition for DFA #<dfa.decisionNumber>

class DFA<dfa.decisionNumber>(DFA):
  pass

  <@errorMethod()>

```

```

<if(dfa.specialStateSTs)>
  def specialStateTransition(self_, s, input):
    # convince pylint that my self_ magic is ok ;
    # pylint: disable-msg=E0213

    # pretend we are a member of the recognizer
    # thus semantic predicates
    can be evaluated
    self = self_.recognizer

    _s = s

    <dfa.specialStateSTs:{state | if s == <i0>: <! compressed special state numbers 0..n-1 !>
<state>} ; separator="\nel">

<if(backtracking)>
  if self._state.backtracking > 0:
    raise BacktrackingFailed

<endif>
  nvae = NoViableAltException(self_.getDescription(), <dfa.decisionNumber>, _s, input)
  self_.error(nvae)
  raise nvae<\n>
<endif>

>>

cyclicDFAInit(dfa) ::= <<
self.dfa<dfa.decisionNumber> = self.DFA<dfa.decisionNumber>(
  self, <dfa.decisionNumber>,
  eot = self.DFA<dfa.decisionNumber>_eot,
  eof = self.DFA<dfa.decisionNumber>_eof,
  min = self.DFA<dfa.decisionNumber>_min,
  max = self.DFA<dfa.decisionNumber>_max,
  accept = self.DFA<dfa.decisionNumber>_accept,
  special = self.DFA<dfa.decisionNumber>_special,
  transition = self.DFA<dfa.decisionNumber>_transition
)<\n>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch
  on
  * state.
  */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = input.LA(1)<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
index<decisionNumber>_<stateNumber> = input.index()

```

```

input.rewind()<\n>
<endif>
s = -1
<edges; separator="\n">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>)<\n>
<endif>
if s >= 0:
    return s
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if (<labelExpr>)<if(predicates)> and (<predicates>)<endif>:
    s = <targetStateNumber><\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
se:
    s = <targetStateNumber><\n>
>>

// D
F A E X P R E S S I O N S

andPredicates(left,right) ::= "((<left>) and (<right>))"

orPredicates(operands) ::= "(<operands; separator=\" or \">)"

notPredicate(pred) ::= "not (<evalPredicate(pred, { })>)"

evalPredicate(pred,description) ::= "(<pred>)"

evalSynPredicate(pred,description) ::= "self.<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "self.input.LA(<k>) == <atom>"

```

```
lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
```

```
(<lower> \<= LA<decisionNumber>_<stateNumber> \<= <upper>)
```

```
%>
```

```
isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(<lower> \<= self.input.LA(<k>) \<= <upper>)"
```

```
setTest(ranges) ::= "<ranges; separator=\" or \">"
```

```
// A T T R I B U T E S
```

```
globalAttributeScopeClass(scope) ::= <<
```

```
<if(scope)>
```

```
<if(scope.attributes)>
```

```
class
```

```
<scope.name>_scope(object):
```

```
def __init__(self):
```

```
    <scope.attributes:{it | self.<it.decl> = None}; separator="\n">
```

```
<endif>
```

```
<endif>
```

```
>>
```

```
globalAttributeScopeStack(scope) ::= <<
```

```
<if(scope)>
```

```
<if(scope.attributes)>
```

```
self.<scope.name>_stack = []<\n>
```

```
<endif>
```

```
<endif>
```

```
>>
```

```
ruleAttributeScopeClass(scope) ::= <<
```

```
<if(scope)>
```

```
<if(scope.attributes)>
```

```
class <scope.name>_scope(object):
```

```
def __init__(self):
```

```
    <scope.attributes:{it | self.<it.decl> = None}; separator="\n">
```

```
<endif>
```

```
<endif>
```

```
>>
```

```
ruleAttributeScopeStack(scope) ::= <<
```

```
<if(scope)>
```

```
<if(scope.attributes)>
```

```
self.<scope.name>_stack = []<\n>
```

```
<endif>
```

```
<endif>
```

```

>>

delegateName(d) ::= <<
<if(d.label)><d.label><else>g<d.name><endif>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<label.label.text> = None
>>

returnStructName(r) ::= "<r.name>_return"

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave
 * a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
class <ruleDescriptor:returnStructName()><(if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope):
  def __init__(self):
    super(<grammar.recognizerName>.<ruleDescriptor:returnStructName()>, self).__init__()

    <if(scope)><scope.attributes:{it | self.<it.decl> = None }; separator="\n"><endif>
    <@ruleReturnInit()>

    <@ruleReturnMembers()>

<endif>
>>

parameterScope(scope) ::= <<
<if(scope)><scope.attributes:{it | <it.decl>}; separator=", "><endif>
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>"

scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
self.<scope>_stack[-<negIndex>].<attr.name>
<else>
<if(index)>
self.<scope>_stack[<index>].<attr.name>
<else>
self.<scope>_stack[-1].<attr.name>

```

```

<endif>
<endif>
%>

/* not applying patch because of bug in action parser!

<if(negIndex)>
((len(self.<scope>_stack)
- <negIndex> - 1) >= 0 and [self.<scope>_stack[<-negIndex>].<attr.name>] or [None])[0]
<else>
<if(index)>
((<index> \< len(self.<scope>_stack)) and [self.<scope>_stack[<index>].<attr.name>] or [None])[0]
<else>
((len(self.<scope>_stack) > 0) and [self.<scope>_stack[-1].<attr.name>] or [None])[0]
<endif>
<endif>
<endif>

*/

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
<if(negIndex)>
<!--FIXME: this seems not to be used by ActionTranslator...!>
self.<scope>_stack[<-negIndex>].<attr.name> = <expr>
<else>
<if(index)>
<!--FIXME: this seems not to be used by ActionTranslator...!>
self.<scope>_stack[<index>].<attr.name> = <expr>
<else>
self.<scope>_stack[-1].<attr.name> = <expr>
<endif>
<endif>
<endif>
%>

/** $x is either global scope or x is rule with dynamic scope; refers
* to stack itself not top of stack. This is useful for predicates
* like {$function.size()>0 && $function::name.equals("foo")}?
*/
isolatedDynamicScopeRef(scope) ::= "self.<scope>_stack"

/**
reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
((<scope> is not None) and [<scope>.<attr.name>] or [None])[0]
<else>
<scope>
<endif>
%>

```



```

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
%>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> = <expr>
<else>
<attr.name> = <expr>
<endif>
%>

```

```

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

```

```

// not sure the next are the right approach; and they are evaluated early;
// they cannot see TREE_PARSER or PARSER attributes for example. :(

```

```

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>.text"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>.type"
tokenLabelPropertyRef_line(scope,attr)
::= "<scope>.line"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>.charPositionInLine"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>.channel"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>.index"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"

```

```

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>.tree"
ruleLabelPropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
((<scope> is not None) and [self.input.getTokenStream().toString(
  self.input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
  self.input.getTreeAdaptor().getTokenStopIndex(<scope>.start)
)] or [None])[0]
<else>
((<scope> is not None) and [self.input.toString(<scope>.start,<scope>.stop)] or [None])[0]
<endif>

```

```

%>
ruleLabelPropertyRef_st(scope,attr) ::= "((<scope> is not None) and [<scope>.st] or [None])[0]"

/** Isolated $RULE ref ok in lexer as
it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "((<scope> is not None) and [<scope>.type] or [0])[0]"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "((<scope> is not None) and [<scope>.line] or [0])[0]"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "((<scope> is not None) and [<scope>.charPositionInLine] or [0])[0]"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "((<scope> is not None) and [<scope>.channel] or [0])[0]"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "((<scope> is not None) and [<scope>.index] or [0])[0]"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "((<scope> is not None) and [<scope>.text] or [None])[0]"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "((<scope> is not None) and [int(<scope>.text)] or [0])[0]"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.start"
rulePropertyRef_stop(scope,attr) ::= "retval.stop" //mmm... or input.LT(-1)??
rulePropertyRef_tree(scope,attr)
::= "retval.tree"
rulePropertyRef_text(scope,attr) ::= "self.input.toString(retval.start, self.input.LT(-1))"
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "self.text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "self._state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "self._state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "self._state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(self.getCharIndex()-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int(<scope>.text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>"

/**
How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if <actions.(actionScope).synpredgate>:
    pass
    <action>

```

```

<else>
if <actions.(actionScope).synpredgate>:
    pass
    <action>

<endif>
<else>
#action start
<action>
#action end
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

codeFileExtension() ::= ".py"

true_value() ::= "True"
false_value() ::= "False"

Found in path(s):
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Python/Python.stg
No license file was found, but licenses were detected in source scan.

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```

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*/

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* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Python3/AST.stg

No license file was found, but licenses were detected in source scan.

/*

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*/

/*

New style messages. This file contains the actual layout of the messages emitted by ANTLR.

The text itself is coming out of the languages/*stg files, according to the chosen locale.

This file contains the default format ANTLR uses.

*/

```
group antlr;
```

```
location(file, line, column) ::= "<file>(<line>,<column>)"
```

```
message(id, text) ::= "error <id> : <text>"
```

```
report(location, message, type) ::= "<location> : <type> <message.id> : <message.text>"
```

```
wantsSingleLineMessage() ::= "true"
```

Found

in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/tool/templates/messages/formats/vs2005.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
[The "BSD license"]
```

```
Copyright (c) 2010 Terence Parr
```

```
All rights reserved.
```

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```
*/
```

```
javaTypeInitMap ::= [
```

```
"int": "0",
```

```
"long": "0",
```

```

"float": "0.0f",
"double": "0.0",
"boolean": "false",
"byte": "0",
"short": "0",
"char": "0",
default: "null" // anything other than an atomic type
]

// System.Boolean.ToString() returns "True" and "False", but the proper C# literals are "true" and "false"
// The Java version of Boolean returns "true" and "false", so they map to themselves here.
booleanLiteral ::= [
  "True": "true",
  "False": "false",
  "true": "true",
  "false": "false",
  default: "false"
]

/**
The overall file structure of a recognizer; stores methods for rules
* and cyclic DFAs plus support code.
*/
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
  docComment, recognizer,
  name, tokens, tokenNames, rules, cyclicDFAs,
  bitsets, buildTemplate, buildAST, rewriteMode, profile,
  backtracking, synpreds, memoize, numRules,
  fileName, ANTLRVersion, generatedTimestamp, trace,
  scopes, superClass, literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
<actions.(actionScope).header>

<@imports>
import org antlr.runtime.*;
<if(TREE_PARSER)>
import org antlr.runtime.tree.*;
<endif>
import java.util.Stack;
import java.util.List;
import java.util.ArrayList;
<if(backtracking)>
import java.util.Map;
import java.util.HashMap;
<endif>
<@end>

```

```

<docComment>
@SuppressWarnings("all")
<recognizer>

>>

lexer(grammar, name, tokens, scopes, rules, numRules, filterMode, labelType="CommonToken",
    superClass="Lexer")
::= <<
public class <grammar.recognizerName> extends <@superClassName><superClass><@end> {
<tokens:{it | public static final int <it.name>=<it.type>;}; separator="\n">
<scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScope(it)><endif>}>
<actions.lexer.members>

// delegates
<grammar.delegates:
{g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
// delegators
<grammar.delegators:
{g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
<last(grammar.delegators):{g|public <g.recognizerName> gParent;}>
public <superClass>[] getDelegates() {
return new <superClass>[] {<grammar.delegates: {g|<g.delegateName()>; separator = ", ">;
}

public <grammar.recognizerName>() {} <! needed by subclasses !>
public <grammar.recognizerName>(CharStream input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>>}) {
this(input, new RecognizerSharedState()<grammar.delegators:{g|, <g.delegateName()>>});
}
public <grammar.recognizerName>(CharStream
input, RecognizerSharedState state<grammar.delegators:{g|, <g.recognizerName> <g.delegateName()>>}) {
super(input,state);
<if(memoize)>
<if(grammar.grammarIsRoot)>
state.ruleMemo = new HashMap[<numRules>+1];<\n><! index from 1..n !>
<endif>
<endif>
<grammar.directDelegates:
{g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|, <p.delegateName()>>},
this);}; separator="\n">
<grammar.delegators:
{g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
<last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
}
@Override public String getGrammarFileName() { return "<fileName>"; }

<if(filterMode)>

```

```

<filteringNextToken()>
<endif>
<rules; separator="\n\n">

<synpreds:{p | <lexerSynpred(p)>}>

<cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this);}; separator="\n">
<cyclicDFAs:cyclicDFA(); separator="\n\n"><! dump tables for all DFA !>

}
>>

/** A override of
Lexer.nextToken() that backtracks over mTokens() looking
* for matches. No error can be generated upon error; just rewind, consume
* a token and then try again. backtracking needs to be set as well.
* Make rule memoization happen only at levels above 1 as we start mTokens
* at backtracking==1.
*/
filteringNextToken() ::= <<
@Override
public Token nextToken() {
while (true) {
if ( input.LA(1)==CharStream.EOF ) {
Token eof = new CommonToken(input,Token.EOF,
Token.DEFAULT_CHANNEL,
input.index(),input.index());
eof.setLine(getLine());
eof.setCharPositionInLine(getCharPositionInLine());
return eof;
}
state.token = null;
state.channel = Token.DEFAULT_CHANNEL;
state.tokenStartCharIndex = input.index();
state.tokenStartCharPositionInLine = input.getCharPositionInLine();
state.tokenStartLine = input.getLine();
state.text = null;
try {
int m = input.mark();
state.backtracking=1; <! means we won't throw slow exception !>
state.failed=false;
mTokens();
state.backtracking=0;
<!
mTokens backtracks with synpred at backtracking==2
and we set the synpredgate to allow actions at level 1. !>
if ( state.failed ) {

```



```

    input.rewind(m);
    input.consume(); <! advance one char and try again !>
  }
  else {
    emit();
    return state.token;
  }
}
catch (RecognitionException re) {
  // shouldn't happen in backtracking mode, but...
  reportError(re);
  recover(re);
}
}
}

@Override
public void memoize(IntStream input,
  int ruleIndex,
  int ruleStartIndex)
{
  if ( state.backtracking>1 ) super.memoize(input, ruleIndex, ruleStartIndex);
}

@Override
public boolean alreadyParsedRule(IntStream input, int ruleIndex) {
  if ( state.backtracking>1 ) return super.alreadyParsedRule(input, ruleIndex);
  return false;
}
>>

actionGate() ::= "state.backtracking==0"

filteringActionGate() ::= "state.backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules,
  numRules,
  bitsets, inputStreamType, superClass,
  labelType, members, rewriteElementType,
  filterMode, ASTLabelType="Object") ::= <<
public class <grammar.recognizerName> extends <@superClassName><superClass><@end> {
<if(grammar.grammarIsRoot)>
  public static final String[] tokenNames = new String[] {
    "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ", wrap="\n\t">
  };
<endif>
  <tokens:{it |public static final int <it.name>=<it.type>;}; separator="\n">

```

```

// delegates
<grammar.delegates: {g|public <g.recognizerName> <g.delegateName()>; separator="\n">
public <superClass>[] getDelegates() {
return new <superClass>[] {<grammar.delegates: {g|<g.delegateName()>; separator = ", ">}
}

// delegators
<grammar.delegators:
{g|public <g.recognizerName> <g.delegateName()>; separator="\n">
<last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

<scopes:{it |<if(it.isDynamicGlobalScope)><globalAttributeScope(it)><endif>}>

<@members>
<!
WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
public <grammar.recognizerName><(inputStreamType> input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>}>)> {
this(input, new RecognizerSharedState()<grammar.delegators:{g|, <g.delegateName()>}>);
}
public <grammar.recognizerName><(inputStreamType> input, RecognizerSharedState
state<grammar.delegators:{g|, <g.recognizerName> <g.delegateName()>}>)> {
super(input, state);
<parserCtorBody()>
<grammar.directDelegates:
{g|<g.delegateName()> = new <g.recognizerName><(input, state<trunc(g.delegators):{p|, <p.delegateName()>}>,
this);}; separator="\n">
<grammar.indirectDelegates:{g | <g.delegateName()> = <g.delegator.delegateName()>.<g.delegateName()>;};
separator="\n">
<last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
}
<@end>

@Override public String[] getTokenNames() { return
<grammar.composite.rootGrammar.recognizerName>.tokenNames; }
@Override public String getGrammarFileName()
{ return "<fileName>"; }

<members>

<rules; separator="\n\n">

<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
// Delegated rules
<grammar.delegatedRules:{ruleDescriptor|
public <returnType(ruleDescriptor)> <ruleDescriptor.name><(ruleDescriptor.parameterScope:parameterScope())>

```

```
throws <ruleDescriptor.throwsSpec; separator=", "> { <if(ruleDescriptor.hasReturnValue)>return
<endif><ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name>(<if(ruleDescriptor.parameterScope)><ru
leDescriptor.parameterScope.attributes:{a|<a.name>}; separator=", "><endif>); \}}; separator="\n">
```

```
<synpreds:{p | <synpred(p)>}>
```

```
<cyclicDFAs:{ dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this);}; separator="\n">
```

```
<cyclicDFAs:cyclicDFA(); separator="\n\n"><! dump tables for all DFA !>
```

```
<bitsets:{it | <bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
words64=it.bits)>};
```

```
separator="\n">
```

```
}
```

```
>>
```

```
parserCtorBody() ::= <<
```

```
<if(memoize)>
```

```
<if(grammar.grammarIsRoot)>
```

```
this.state.ruleMemo = new HashMap[<length(grammar.allImportedRules)>+1];<\n<! index from 1..n !>
```

```
<endif>
```

```
<endif>
```

```
<grammar.delegators:
```

```
{g|this.<g:delegateName()> = <g:delegateName()>;}; separator="\n">
```

```
>>
```

```
parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
```

```
ASTLabelType="Object", superClass="Parser", labelType="Token",
```

```
members={<actions.parser.members>}) ::= <<
```

```
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
```

```
bitsets, "TokenStream", superClass,
```

```
labelType, members, "Token",
```

```
false, ASTLabelType)>
```

```
>>
```

```
/** How to generate a tree parser; same as parser except the input
```

```
* stream is a different type.
```

```
*/
```

```
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
```

```
numRules, bitsets, filterMode, labelType={<ASTLabelType>}, ASTLabelType="Object",
```

```
superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif>},
```

```
members={<actions.treeparser.members>}
```

```
) ::= <<
```

```
<genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
```

```
bitsets, "TreeNodeStream", superClass,
```

```
labelType, members, "Node",
```

```
filterMode, ASTLabelType)>
```

```
>>
```

```

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
public final void <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(>) throws
<ruleDescriptor	throwsSpec:{x|<x>});
separator=", "> {
<ruleLabelDefs(>
<if(trace)>
traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
try {
<block>
}
finally {
traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
}
<else>
<block>
<endif>
}
// $ANTLR end <ruleName>
>>

synpred(name) ::= <<
public final boolean <name>() {
state.backtracking++;
<@start(>
int start = input.mark();
try {
<name>_fragment(); // can never throw exception
} catch (RecognitionException re) {
System.err.println("impossible: "+re);
}
boolean success = !state.failed;
input.rewind(start);
<@stop(>
state.backtracking--;
state.failed=false;
return success;
}<\n>
>>

```

```

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ( state.backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index>) ) {
<returnStatement((( <ruleReturn Value()> )))> }
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if
(state.failed) <returnStatement((( <ruleReturn Value()> )))><endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking>0) { state.failed=true;
<returnStatement((( <ruleReturn Value()> )))>}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
// <fileName>:<description>
<if(isPredefinedRewriteRule.(ruleName) && filterMode && buildAST)>
@Override
<endif>
public final <return Type(ruleDescriptor)> <ruleName>(<ruleDescriptor.parameterScope:parameterScope()>) throws
<ruleDescriptor.throwsSpec: {x|<x>}; separator=", "> {
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
<ruleLabelDefs()>
<ruleDescriptor.actions.init>
<@preamble()>
try
{
<ruleMemoization(name=ruleName)>
<block>

```

```

    <ruleCleanup()>
    <(ruleDescriptor.actions.after):execAction()>
  }
<if(exceptions)>
  <exceptions: { e|<catch(decl=e.decl,action=e.action)><\n> }>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
  <actions.(actionScope).rulecatch>
<else>
  catch (RecognitionException re) {
    reportError(re);
    recover(input,re);
    <@setErrorReturnValue()>
  }
<endif>
<endif>
<endif>
  finally {
    // do for sure before leaving
    <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
    <memoize()>
    <ruleScopeCleanup()>
    <finally>
  }
  <@postamble()>
  <returnStatement((({<ruleReturnValue()>}), false)>
}
// $ANTLR end "<ruleName>"
>>

```

```

returnStatement(returnValue, force=true) ::= <%
<if(!isEmptyString.(returnValue))>
  return <returnValue>;
<elseif(force)>
  return;
<endif>
%>

```

```

catch(decl,action) ::= <<
catch (<e.decl>) {
  <e.action>
}
>>

```

```

ruleDeclarations()
::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>

```

```

<returnType(ruleDescriptor)> retval = new <returnType(ruleDescriptor)>();
retval.start = input.LT(1);
<elseif(ruleDescriptor.returnScope)>
<ruleDescriptor.returnScope.attributes:{ a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.index();
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{it |<it>_stack.push(new <it>_scope());}; separator="\n">
<ruleDescriptor.ruleScope:{it |<it.name>_stack.push(new <it.name>_scope());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{it |<it>_stack.pop();}; separator="\n">
<ruleDescriptor.ruleScope:{it |<it.name>_stack.pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
:{it |<labelType> <it.label.text>=null;};
separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
:{it |List<Object> list_<it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(); separator="\n">
<ruleDescriptor.ruleListLabels:{ll|RuleReturnScope <ll.label.text> = null;}; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
:{it |<labelType> <it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.charLabels:{it |int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
:{it |List<Object> list_<it.label.text>=null;}; separator="\n"
>
>>

```

```

ruleReturnValue() ::= <%
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
%>

```

```

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop
= input.LT(-1);
<endif>
<endif>
>>

```

```

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if ( state.backtracking>0 ) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_startIndex); }
<endif>
<endif>
>>

```

```

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */

```

```

lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
public final void m<ruleName>(<ruleDescriptor.parameterScope:parameterScope()) throws RecognitionException
{
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
try {
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<else>
int _type = <ruleName>;

```



```

int _channel = DEFAULT_TOKEN_CHANNEL;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<ruleCleanUp()>
state.type = _type;
state.channel
= _channel;
<(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally {
// do for sure before leaving
<if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeCleanUp()>
<memoize()>
}
}
// $ANTLR end "<ruleName>"
>>

```

```

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
@Override
public void mTokens() throws RecognitionException {
<block>
}
>>

```

// S U B R U L E S

```

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>) {
<alts:{a | <altSwitchCase(i,a)>}>
}
<@postbranch()>
>>

```

```

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description)
 ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
  <alts:{ a | <altSwitchCase(i,a)>}>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int cnt<decisionNumber>=0;
<decls>
<@preloop()>
loop<decisionNumber>:
while (true) {
  int alt<decisionNumber>=<maxAlt>;
  <@predecision()>
  <decision>
  <@postdecision()>
  switch
  (alt<decisionNumber>) {
    <alts:{ a | <altSwitchCase(i,a)>}>

```

```

default :
if ( cnt<decisionNumber> >= 1 ) break loop<decisionNumber>;
<ruleBacktrackFailure()>
EarlyExitException eee = new EarlyExitException(<decisionNumber>, input);
<@earlyExitException()>
throw eee;
}
cnt<decisionNumber>++;
}
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// <fileName>:<description>
<decls>
<@preloop()>
loop<decisionNumber>:
while (true) {
int alt<decisionNumber>=<maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
<alts:{a | <altSwitchCase(i,a)>}>
default :
break loop<decisionNumber>;
}
}
<@postloop()>
>>

```

closureBlockSingleAlt ::= closureBlock

```

/** Optional blocks (x)? are translated to (x|) by before code generation
* so we can just use the normal block template
*/

```

optionalBlock ::= block

optionalBlockSingleAlt ::= block

```

/** A case in a switch that jumps to an alternative given the alternative
* number. A DFA predicts the alternative and then a simple switch
* does the jump to the code that actually matches that alternative.
*/

```

```

altSwitchCase(altNum,alt) ::= <<
case <altNum> :
  <@prealt()>
  <alt>
  break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
  <@declarations()>
  <elements:element()>
  <rew>
  <@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element(e) ::= <<
<@prematch()>
<e.el>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,terminalOptions={}) ::=
<<
<if(label)><label>=<labelType><endif>match(input,<token>,FOLLOW_<token>_in_<ruleName><elementIndex
>); <checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<tokenRef(token,label,elementIndex,terminalOptions)>
<listLabel(label, label)>
>>

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new ArrayList<Object>();
list_<label>.add(<elem>);
>>

```

```

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);
<endif>
match(<char>); <checkRuleBacktrackFailure()>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);
<endif>
matchRange(<a>,<b>); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="",terminalOptions={ }) ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);
<else>
<label>=<castToLabelType("input.LT(1)")>;
<endif>
<endif>
if ( <s>
) {
input.consume();
<postmatchCode>
<if(!LEXER)>
state.errorRecovery=false;
<endif>
<if(backtracking)>state.failed=false;<endif>
}
else {
<ruleBacktrackFailure()>
MismatchedSetException mse = new MismatchedSetException(null,input);
<@mismatchedSetException()>
<if(LEXER)>
recover(mse);
throw mse;
<else>
throw mse;
<! use following code to make it recover inline; remove throw mse;
recoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
!>
<endif>

```

```

}
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(label, label)>
>>

/** Match a string literal */
lexerStringRef(string,label,elementIndex="0") ::= <<
<if(label)>
int <label>Start = getCharIndex();
match(<string>); <checkRuleBacktrackFailure()>
int <label>StartLine<elementIndex> = getLine();
int <label>StartCharPos<elementIndex> = getCharPositionInLine();
<label> = new <labelType>(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start, getCharIndex()-1);
<label>.setLine(<label>StartLine<elementIndex>);
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>);
<else>
match(<string>); <checkRuleBacktrackFailure()>
<endif>
>>

wildcard(token,label,elementIndex,terminalOptions={ }) ::= <<
<if(label)>
<label>=<castToLabelType("input.LT(1)")>;
<endif>
matchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(token,label,elementIndex,terminalOptions={ }) ::= <<
<wildcard(...)>
<listLabel(label, label)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);
<endif>
matchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(label, elementIndex)>

```

```

<listLabel(label, label)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule
 * name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
pushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope:delegateName()>.<endif><rule.name>(<args; separator=", ">);
state._fsp--;
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(rule,label,elementIndex,args,scope)>
<listLabel(label, label)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();
int <label>StartLine<elementIndex> = getLine();
int <label>StartCharPos<elementIndex> = getCharPositionInLine();
<if(scope)><scope:delegateName()>.<endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<label> = new <labelType>(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1);
<label>.setLine(<label>StartLine<elementIndex>);
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>);
<else>
<if(scope)><scope:delegateName()>.<endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<

```

```

<lexerRuleRef(rule,label,args,elementIndex,scope)>
<listLabel(label, label)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();
int <label>StartLine<elementIndex> = getLine();
int <label>StartCharPos<elementIndex> = getCharPositionInLine();
match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new <labelType>(input, EOF, Token.DEFAULT_CHANNEL, <label>Start<elementIndex>,
getCharIndex()-1);
<label>.setLine(<label>StartLine<elementIndex>);
<label>.setCharPositionInLine(<label>StartCharPos<elementIndex>);
<else>
match(EOF);
<checkRuleBacktrackFailure()>
<endif>
>>

// used for left-recursive rules
recRuleDefArg()          ::= "int <recRuleArg()>"
recRuleArg()             ::= "_p"
recRuleAltPredicate(ruleName,opPrec) ::= "<recRuleArg()> \<= <opPrec>"
recRuleSetResultAction() ::= "root_0=${<ruleName>}_primary.tree;"
recRuleSetReturnAction(src,name)    ::= "${<name>}=${<src>}.<name>;"

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( input.LA(1)==Token.DOWN ) {
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input,
Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is

```



```

* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if ( !(<evalPredicate(pred,description)>) ) {
  <ruleBacktrackFailure()>
  throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);
<edges; separator="\nelse ">
<if((!isTrue.(last(edges).labelExpr)) && (!last(edges).predicates))>
else {
<if(eotPredictsAlt)>
alt<decisionNumber>=<eotPredictsAlt>;
<else>
<ruleBacktrackFailure()>
<(nvaExceptionWrapperMap.(k))({NoViableAltException nvae =
new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);
<@noViableAltException()>
throw nvae;})>
<endif>
}
<endif>
>>

nvaExceptionWrapperMap ::= [
"1":"wrapNvaExceptionForK1",
"2":"wrapNvaExceptionForK2",
default:"wrapNvaExceptionForKN"
]

wrapNvaExceptionForK1(exceptionCode)
::= <<
<exceptionCode>
>>

wrapNvaExceptionForK2(exceptionCode) ::= <<
int nvaeMark = input.mark();
try {
input.consume();
<exceptionCode>
} finally {
input.rewind(nvaeMark);
}
}

```

```

>>

wrapNvaExceptionForKN(exceptionCode) ::= <<
int nvaeMark = input.mark();
try {
  for (int nvaeConsume = 0; nvaeConsume \< <k> - 1; nvaeConsume++) {
    input.consume();
  }
  <exceptionCode>
} finally {
  input.rewind(nvaeMark);
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if ( LA(1)==X ) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);
<edges; separator="\nelse ">
>>

/** A DFA
state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);
<edges; separator="\nelse ">
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
  alt<decisionNumber>=<eotPredictsAlt>;
}
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>";

```

```

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr,
targetState, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates><endif>) {
<targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( input.LA(<k>) ) {
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
alt<decisionNumber>=<eotPredictsAlt>;
<else>
<ruleBacktrackFailure()>
<(nvaExceptionWrapperMap.(k))({NoViableAltException nvae =
new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);
<@noViableAltException()>
throw nvae;})>
<endif>
}
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( input.LA(<k>) ) {
<edges; separator="\n">
}
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ( input.LA(<k>)
) {
<edges; separator="\n">
<if(eotPredictsAlt)>
default:
alt<decisionNumber>=<eotPredictsAlt>;
break;
<endif>
}

```

```
>>
```

```
dfaEdgeSwitch(labels, targetState) ::= <<
```

```
<labels:{it |case <it>:}; separator="\n">
```

```
{
```

```
<targetState>
```

```
}
```

```
break;
```

```
>>
```

```
// C y c l i c D F A
```

```
/** The code to initiate execution of a cyclic DFA; this is used
```

```
* in the rule to predict an alt just like the fixed DFA case.
```

```
* The <name> attribute is inherited via the parser, lexer, ...
```

```
*/
```

```
dfaDecision(decisionNumber,description) ::= <<
```

```
alt<decisionNumber> = dfa<decisionNumber>.predict(input);
```

```
>>
```

```
/* Dump DFA tables as run-length-encoded Strings of octal values.
```

```
* Can't use hex as compiler translates them before compilation.
```

```
* These strings are split into multiple, concatenated strings.
```

```
* Java puts them back together at compile time thankfully.
```

```
* Java cannot handle large static arrays, so we're stuck with this
```

```
* encode/decode approach. See analysis and runtime DFA for
```

```
* the encoding methods.
```

```
*/
```

```
cyclicDFA(dfa)
```

```
::= <<
```

```
static final String DFA<dfa.decisionNumber>_eotS =
```

```
"<dfa.javaCompressedEOT; wrap="\n\t">";
```

```
static final String DFA<dfa.decisionNumber>_eofS =
```

```
"<dfa.javaCompressedEOF; wrap="\n\t">";
```

```
static final String DFA<dfa.decisionNumber>_minS =
```

```
"<dfa.javaCompressedMin; wrap="\n\t">";
```

```
static final String DFA<dfa.decisionNumber>_maxS =
```

```
"<dfa.javaCompressedMax; wrap="\n\t">";
```

```
static final String DFA<dfa.decisionNumber>_acceptS =
```

```
"<dfa.javaCompressedAccept; wrap="\n\t">";
```

```
static final String DFA<dfa.decisionNumber>_specialS =
```

```
"<dfa.javaCompressedSpecial; wrap="\n\t">>";
```

```
static final String[] DFA<dfa.decisionNumber>_transitionS = {
```

```
<dfa.javaCompressedTransition:{s|<s; wrap="\n\t">}; separator=",\n">
```

```
};
```

```
static final short[] DFA<dfa.decisionNumber>_eot =
```

```
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_eotS);
```

```

static final short[] DFA<dfa.decisionNumber>_eof =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_eofS);
static final char[] DFA<dfa.decisionNumber>_min
= DFA.unpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
static final char[] DFA<dfa.decisionNumber>_max =
DFA.unpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
static final short[] DFA<dfa.decisionNumber>_accept =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
static final short[] DFA<dfa.decisionNumber>_special =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_specialS);
static final short[][] DFA<dfa.decisionNumber>_transition;

static {
int numStates = DFA<dfa.decisionNumber>_transitionS.length;
DFA<dfa.decisionNumber>_transition = new short[numStates][];
for (int i=0; i<numStates; i++) {
DFA<dfa.decisionNumber>_transition[i] = DFA.unpackEncodedString(DFA<dfa.decisionNumber>_transitionS[i]);
}
}

protected class DFA<dfa.decisionNumber> extends DFA {

public DFA<dfa.decisionNumber>(BaseRecognizer recognizer) {
this.recognizer = recognizer;
this.decisionNumber = <dfa.decisionNumber>;
this.eot = DFA<dfa.decisionNumber>_eot;
this.eof
= DFA<dfa.decisionNumber>_eof;
this.min = DFA<dfa.decisionNumber>_min;
this.max = DFA<dfa.decisionNumber>_max;
this.accept = DFA<dfa.decisionNumber>_accept;
this.special = DFA<dfa.decisionNumber>_special;
this.transition = DFA<dfa.decisionNumber>_transition;
}
@Override
public String getDescription() {
return "<dfa.description>";
}
<@errorMethod()>
<if(dfa.specialStateSTs)>
@Override
public int specialStateTransition(int s, IntStream _input) throws NoViableAltException {
<if(LEXER)>
IntStream input = _input;
<endif>
<if(PARSER)>
TokenStream input = (TokenStream)_input;
<endif>

```

```

<if(TREE_PARSER)>
TreeNodeStream input = (TreeNodeStream)_input;
<endif>
int _s = s;
switch ( s ) {
<dfa.specialStateSTs:{state |
case <i0> : <! compressed special state numbers 0..n-1 !>
<state>}; separator="\n">
}
<if(backtracking)>
if (state.backtracking>0) {state.failed=true; return -1;}
<endif>
NoViableAltException nvae =
new NoViableAltException(getDescription(),
<dfa.decisionNumber>, _s, input);
error(nvae);
throw nvae;
}
<endif>
}
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
* state.
*/
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(1);
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
int index<decisionNumber>_<stateNumber> = input.index();
input.rewind();
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>);
<endif>
if ( s>=0 ) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
* state to jump to next if successful.
*/
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ( (<labelExpr> <if(predicates)>&& (<predicates>)<endif>) { s = <targetStateNumber>;}
>>

/** An edge pointing

```

```

at end-of-token; essentially matches any char;
* always jump to the target.
*/
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands) ::= "<operands; separator=\\|\\>"

notPredicate(pred) ::= "!(<evalPredicate(pred,{})>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>===<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
* somewhere. Must ask for the lookahead directly.
*/
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <%
(LA<decisionNumber>_<stateNumber> >= <lower> && LA<decisionNumber>_<stateNumber> \<= <upper>)
%>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt)
::= "(input.LA(<k>) >= <lower> && input.LA(<k>) \<= <upper>)"

setTest(ranges) ::= <<
<ranges; separator="|">
>>

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
<scope.attributes:{it |<it.decl>;}; separator="\n">
}
protected Stack\<<scope.name>_scope> <scope.name>_stack = new Stack\<<scope.name>_scope>();
<endif>
>>

```

```

ruleAttributeScope(scope) ::= <<
<if(scope)>
<if(scope.attributes)>
protected static class <scope.name>_scope {
  <scope.attributes:{it |<it.decl>;}; separator="\n">
}
protected Stack<<<scope.name>_scope> <scope.name>_stack = new Stack<<<scope.name>_scope>();
<endif>
<endif>
>>

```

```

returnStructName(r) ::= "<r.name>_return"

```

```

returnType(ruleDescriptor) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<elseif(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
%>

```

```

/** Generate
the Java type associated with a single or multiple return
* values.
*/

```

```

ruleLabelType(referencedRule) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
<returnScopeBaseType()>
<elseif(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
%>

```

```

delegateName(d) ::= <<
<if(d.label)><d.label><else>g<d.name><endif>
>>

```

```

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/

```

```

initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

```



```

/** Define a rule label including default value */
ruleLabelDef(label) ::= <%
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;
%>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public
static class <ruleDescriptor.returnStructName()> extends <returnScopeBaseType()> {
<if(scope)><scope.attributes:{it |public <it.decl>;}; separator="\n"><endif>
<@ruleReturnMembers()>
};
<endif>
>>

returnScopeBaseType() ::= <%
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope
%>

parameterScope(scope) ::= <<
<scope.attributes:{it |<it.decl>;}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";

scopeAttributeRef(scope,attr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1).<attr.name>
<else>
<if(index)>
<scope>_stack.elementAt(<index>).<attr.name>
<else>
<scope>_stack.peek().<attr.name>
<endif>
<endif>
%>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <%
<if(negIndex)>
<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1).<attr.name> =<expr>;
<else>

```

```

<if(index)>
<scope>_stack.elementAt(<index>).<attr.name> =<expr>;
<else>
<scope>_stack.peek().<attr.name>
=<expr>;
<endif>
<endif>
%>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <%
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?(<<returnType(referencedRule)>><scope>).<attr.name>:<initValue(attr.type)>)
<else>
<scope>
<endif>
%>

returnAttributeRef(ruleDescriptor,attr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
%>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <%
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>;
<else>
<attr.name> =<expr>;
<endif>
%>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/**
ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

```

```

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>!=null?<scope>.getText():null)"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>!=null?<scope>.getType():0)"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>!=null?<scope>.getLine():0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>!=null?<scope>.getCharPositionInLine():0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>!=null?<scope>.getChannel():0)"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>!=null?<scope>.getTokenIndex():0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>!=null?Integer.valueOf(<scope>.getText():0)"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>!=null?(<castToLabelType({<scope>.start})>):null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>!=null?(<castToLabelType({<scope>.stop})>):null)"
ruleLabelPropertyRef_tree(scope,attr)
::= "<scope>!=null?(<ASTLabelType><scope>.getTree()):null)"
ruleLabelPropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
(<scope>!=null?(input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
input.getTreeAdaptor().getTokenStopIndex(<scope>.start))):null)
<else>
(<scope>!=null?input.toString(<scope>.start,<scope>.stop):null)
<endif>
%>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>!=null?((StringTemplate)<scope>.getTemplate()):null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
"<scope>!=null?<scope>.getType():0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::=
"<scope>!=null?<scope>.getLine():0)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::=
"<scope>!=null?<scope>.getCharPositionInLine():-1)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::=
"<scope>!=null?<scope>.getChannel():0)"
lexerRuleLabelPropertyRef_index(scope,attr)
::=
"<scope>!=null?<scope>.getTokenIndex():0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::=
"<scope>!=null?<scope>.getText():null)"
lexerRuleLabelPropertyRef_int(scope,attr) ::=
"<scope>!=null?Integer.valueOf(<scope>.getText():0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "<castToLabelType(\"retval.start\")>"

```

```

rulePropertyRef_stop(scope,attr) ::= "<castToLabelType(\"retval.stop\")>"
rulePropertyRef_tree(scope,attr) ::= "retval.tree"
rulePropertyRef_text(scope,attr) ::= <%
<if(TREE_PARSER)>
input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(retval.start),
input.getTreeAdaptor().getTokenStopIndex(retval.start))
<else>
input.toString(retval.start,input.LT(-1))
<endif>
%>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "getText()"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr)
::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(getCharIndex()-1)"
lexerRulePropertyRef_int(scope,attr) ::= "Integer.valueOf(<scope>.getText())"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>";
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>";

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <%
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> ) {
<action>
}
<else>
<action>
<endif>
%>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name,
words64) ::= <<
public static final BitSet <name> = new BitSet(new long[] { <words64: { it |<it>L } ; separator="," > });

```

>>

```
codeFileExtension() ::= ".java"
```

```
true_value() ::= "true"
```

```
false_value() ::= "false"
```

```
isEmptyString ::= [
```

```
  "" : true,
```

```
  default : false
```

```
]
```

```
isTrue ::= [
```

```
  "true" : true,
```

```
  default : false
```

```
]
```

```
isDefaultLabelType ::= [
```

```
  "Token" : true,
```

```
  default : false
```

```
]
```

```
isPredefinedRewriteRule ::= [
```

```
  "topdown" : true,
```

```
  "bottomup" : true,
```

```
  default : false
```

```
]
```

```
castToLabelType(value) ::= <%
```

```
<if(!isDefaultLabelType.(labelType))>
```

```
(<labelType>)
```

```
<endif>
```

```
<value>
```

```
%>
```

Found in path(s):

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Java/Java.stg

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/*

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*/

/** Templates for building ASTs during normal parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* The situation is not too bad as rewrite (->) usage makes ^ and !

* invalid. There is no huge explosion of combinations.

*/

@rule.setErrorReturnValue() ::= <<

/* ASTParser rule.setErrorReturnValue */

retval.tree

= (<ASTLabelType> *) [treeAdaptor errorNode:input From:retval.start To:[input LT:-1] Exception:re];

<! System.out.println("<ruleName> returns "+((CommonTree)retval.tree).toStringTree()); !>

>>

// TOKEN AST STUFF

/** ID and output=AST */

tokenRef(token, label, elementIndex, terminalOptions) ::= <<

/* ASTParser tokenRef */

<super.tokenRef(...)>

<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>

<label>_tree = <createNodeFromToken(...)>;

[treeAdaptor addChild:<label>_tree toTree:root_0];

<if(backtracking)>}<endif>

```

>>

/* ID! and output=AST (same as plain tokenRef) */
/* ASTParser tokenRefBang */
tokenRefBang(token,label,elementIndex,terminalOptions) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<label>_tree = <createNodeFromToken(...)>;
root_0 = (<ASTLabelType> *)[treeAdaptor becomeRoot:<label>_tree old:root_0];
<if(backtracking)>}<endif>
>>

/**
ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
/* ASTParser tokenRefBangAndListLabel */
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
/* ASTParser tokenRefAndListLabel */
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,terminalOptions,elementIndex) ::= <<
/* ASTParser tokenRefRuleRootAndListLabel */
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template
name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated

```

```

// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <%
/* ASTParser matchSet */
<super.matchSet(postmatchCode={<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
  [treeAdaptor addChild:<createNodeFromToken(...)> toTree:root_0 ];}, ...)>
%>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
/* ASTParser matchRuleBlockSet */
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,terminalOptions, postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug)
::= <<
/* ASTParser matchSetRuleRoot */
<if(label)>
<label>=(<labelType> *)[input LT:1]; /* matchSetRuleRoot */<\n>
<endif>
<super.matchSet(postmatchCode={<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
root_0 = (<ASTLabelType> *)[treeAdaptor becomeRoot:<createNodeFromToken(...)> old:root_0];}, ...)>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
/* ASTParser ruleRef */
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
[treeAdaptor addChild:[<label> getTree] toTree:root_0];
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
/* ASTParser ruleRefRuleRoot */
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
root_0 = (<ASTLabelType> *)[treeAdaptor becomeRoot:[<label>

```



```

    getTree] old:root_0];
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTParser ruleRefAndListLabel */
<ruleRef(...)>
<listLabel(elem = {[<label> getTree]},...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTParser ruleRefBangAndListLabel */
<ruleRefBang(...)>
<listLabel(elem = {[<label> getTree]},...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
/* ASTParser ruleRefRuleRootAndListLabel */
<ruleRefRuleRoot(...)>
<listLabel(elem = {[<label> getTree]},...)>
>>

// WILDCARD AST

wildcard(token,label,elementIndex,terminalOptions) ::= <<
/* ASTParser wildcard */
<super.wildcard(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
    [treeAdaptor addChild:[treeAdaptor create:<label>] retain] toTree:root_0];
<if(backtracking)>}<endif>
>>

wildcardBang(token,label,elementIndex,terminalOptions)
::= "<super.wildcard(...)>"

wildcardRuleRoot(token,label,elementIndex,terminalOptions) ::= <<
/* ASTParser wildcardRuleRoot */
<super.wildcard(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
    <label>_tree = [[treeAdaptor create:<label>] retain]
    root_0 = (<ASTLabelType> *)[treeAdaptor becomeRoot:<label>_tree old:root_0];
<if(backtracking)>}<endif>
>>

createNodeFromToken(label,terminalOptions) ::= <<
/* ASTParser createNodeFromToken */

```

```
<if(terminalOptions.node)>
[<terminalOptions.node> new<terminalOptions.node>:<label>] <! new MethodNode(IDLabel) !>
<else>
(<ASTLabelType> *)[[treeAdaptor create:<label>] retain]
<endif>
>>
```

```
// straight from java cleanup ///
ruleCleanUp() ::= <<
/* ASTParser ruleCleanUp */
<super.ruleCleanUp()>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<\n><endif>
    retval.tree = (<ASTLabelType> *)[[treeAdaptor rulePostProcessing:root_0];
    [treeAdaptor setTokenBoundaries:retval.tree
    From:retval.start To:retval.stopToken];
<if(backtracking)>}<endif>
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/ObjC/ASTParser.stg
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```

```
/*
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```

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*/

/** Templates for building ASTs during normal parsing.

*

* Deal with many combinations. Dimensions are:

* Auto build or rewrite

* no label, label, list label (label/no-label handled together)

* child, root

* token, set, rule, wildcard

*

* The situation is not too bad as rewrite (->) usage makes ^ and !

* invalid. There is no huge explosion of combinations.

*/

@rule.setErrorReturnValue()

::= <<

retval.tree = (<ASTLabelType>)(ADAPTOR->errorNode(ADAPTOR, INPUT, retval.start, LT(-1), EXCEPTION));

>>

// TOKEN AST STUFF

/** ID and output=AST */

tokenRef(token,label,elementIndex,terminalOptions) ::= <<

<super.tokenRef(...)>

<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>

<label>_tree = (<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>));

ADAPTOR->addChild(ADAPTOR, root_0, <label>_tree);

<if(backtracking)>}<endif>

>>

/** ID! and output=AST (same as plain tokenRef) */

tokenRefBang(token,label,elementIndex,terminalOptions) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */

tokenRefRuleRoot(token,label,elementIndex,terminalOptions) ::= <<

<super.tokenRef(...)>

<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>

<label>_tree = <createNodeFromToken(...)>;

root_0 = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_0));

<if(backtracking)>}<endif>

>>

/** ids+=ID! and output=AST */

```

tokenRefBangAndListLabel(token,label,elementIndex,terminalOptions)
 ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,terminalOptions,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus
... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,terminalOptions,elementIndex,postmatchCode) ::= <<
<super.matchSet(postmatchCode={<if(backtracking)>if ( <actions.(actionScope).synpredgate> )
<endif>ADAPTOR->addChild(ADAPTOR, root_0, <createNodeFromToken(...)>},...)>
>>

matchRuleBlockSet(s,label,terminalOptions,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,terminalOptions,postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

```

```

matchSetRuleRoot(s,label,terminalOptions,elementIndex,debug) ::= <<
<if(label)>
<label>=(<labelType>)LT(1);<\n>
<endif>
<super.matchSet(postmatchCode={<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>root_0 =
(<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <createNodeFromToken(...)>,
root_0));},...)>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>ADAPTOR->addChild(ADAPTOR, root_0,
<label>.tree);
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>root_0 = (<ASTLabelType>)(ADAPTOR-
>becomeRoot(ADAPTOR, <label>.tree, root_0));
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelAST(...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabelAST(...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope)
::= <<
<ruleRefRuleRoot(...)>
<listLabelAST(...)>
>>

// WILDCARD AST

```

```

wildcard(token,label,elementIndex,terminalOptions) ::= <<
<super.wildcard(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<label>_tree = (<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>));
ADAPTOR->addChild(ADAPTOR, root_0, <label>_tree);
<if(backtracking)>}<endif>
>>

wildcardBang(token,label,elementIndex,terminalOptions) ::= "<super.wildcard(...)>"

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<label>_tree = (<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>));
root_0 = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_0));
<if(backtracking)>}<endif>
>>

createNodeFromToken(label,terminalOptions) ::= <<
<if(terminalOptions.node)>
<terminalOptions.node>New(<label>) <! new MethodNode(IDLabel) !>
<else>
(<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>))
<endif>
>>

ruleCleanUp()
::= <<
<super.ruleCleanUp()>
<if(backtracking)>
if ( <actions.(actionScope).synpredgate> )
{<\n>
<endif>
<if(!ruleDescriptor.isSynPred)>
retval.stop = LT(-1);<\n>
<endif>
retval.tree = (<ASTLabelType>)(ADAPTOR->rulePostProcessing(ADAPTOR, root_0));
ADAPTOR->setTokenBoundaries(ADAPTOR, retval.tree, retval.start, retval.stop);
<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {it | if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {it | if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
<if(backtracking)>
}<\n>
<endif>
>>

```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/C/ASTParser.stg
```

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```
group Dbg;
```

```
/*
```

```
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```

```
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```

```
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```

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```
*/
```

```
@parserBody.mixins() ::= <<
```

```
include ANTLR3::<if(profile)>Profile<else>Debug<endif>::ParserEvents
```

```
>>
```

```
@parserBody.additionalMembers() ::= <<
```

```
<if(grammar.grammarIsRoot)>
```

```
RULE_NAMES = [
```

```
:invalid_rule, <grammar.allImportedRules:{rST|:<rST.name>}; wrap="\n ", separator=", ">
```

```
].freeze
```

```
<endif>
```

```
>>
```

```

@rule.body() ::= <<
in_rule(grammar_file_name, "<ruleName>") do
  @debug_listener.location(<ruleDescriptor.tree.line>, <ruleDescriptor.tree.column>)

  <@super.body()>

  @debug_listener.location(<ruleDescriptor.EORNode.line>,
  <ruleDescriptor.EORNode.column>)
end
>>

// Common debug event triggers used by region overrides below
enterSubRule() ::= <<
in_subrule(<decisionNumber>) do<\n>
>>

exitSubRule() ::= <<
end<\n>
>>

enterDecision() ::= <<
in_decision(<decisionNumber>) do<\n>
>>

exitDecision() ::= <<
end<\n>
>>

enterAlt(n) ::= <<
in_alternative(<n>)<\n>
>>

// Region overrides that tell various constructs to add debugging triggers
@block.body() ::= <<
in_subrule(<decisionNumber>) do
  <@super.body()>
end
>>

```



```
// @blockBody.predecision() ::= "<enterSubRule(>"
// @blockBody.postdecision() ::= "<exitDecision(>"
// @blockBody.postbranch() ::= "<exitSubRule(>"
@blockBody.decision() ::= <<
in_decision(<decisionNumber>) do
  <@super.decision(>
end
>>
```

```
@ruleBlock.decision() ::= <<
in_decision(<decisionNumber>) do
  <@super.decision(>
end<\n>
>>
```

```
@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n={1})>"
```

```
@blockSingleAlt.prealt() ::= "<enterAlt(n={1})>"
```

```
@positiveClosureBlock.loopBody()
::= <<
in_subrule(<decisionNumber>) do
  <@super.loopBody(>
end
>>
```

```
@positiveClosureBlockLoop.decisionBody() ::= <<
in_decision(<decisionNumber>) do
  <@super.decisionBody(>
end
>>
```

```
@positiveClosureBlockLoop.earlyExitException() ::= <<
@debug_listener.recognition_exception(eee)
>>
```

```
@closureBlock.loopBody() ::= <<
in_subrule(<decisionNumber>) do
  <@super.loopBody(>
end
>>
```

```
@closureBlockLoop.decisionBody() ::= <<
in_decision(<decisionNumber>) do
  <@super.decisionBody()>
end
>>
```

```
@altSwitchCase.preatl() ::= "<enterAlt(altNum)>" // altNum is arg of altSwitchCase
```

```
element(e) ::= <<
@debug_listener.location(<e.line>, <e.pos>) // e is arg of element
<super.element(e)>
>>
```

```
@matchSet.mismatchedSetException() ::= "@debug_listener.recognition_exception(mse)"
```

```
@dfaState.noViableAltException() ::= <<
nvae = NoViableAlternative( "<description>", <decisionNumber>, <stateNumber> )
@debug_listener.recognition_exception( nvae )
raise( nvae )<\n>
>>
```

```
@dfaStateSwitch.noViableAltException()
::= <<
nvae = NoViableAlternative( "<description>", <decisionNumber>, <stateNumber> )
@debug_listener.recognition_exception( nvae )
raise( nvae )<\n>
>>
```

```
dfaDecision(decisionNumber,description) ::= <<
begin
  @state.cyclic_decision = true
  <super.dfaDecision(...)>
rescue ANTLR3::Error::NoViableAlternative => nvae
  @debug_listener.recognition_exception(nvae)
  raise
end
>>
```

```
@cyclicDFA.errorMethod() ::= <<
def error(nvae)
  @recognizer.debug_listener.recognition_exception(nvae)
```

```
super
end
>>
/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
predicate?("<description>") { <pred> }
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-jar/org/antlr/codegen/templates/Ruby/Dbg.stg
No license file was found, but licenses were detected in source scan.
```

```
/*
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* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*/
/** Template overrides to add debugging to normal Java output;
* If ASTs are built, then you'll also get ASTDbg.stg loaded.
*/

@outputFile.debugPreprocessor() ::= "#define ANTLR_DEBUG"
```

```

@outputFile.imports() ::= <<
<@super.imports(>
using Antlr.Runtime.Debug;
using IOException = System.IO.IOException;
>>

@genericParser.members()
::= <<
<if(grammar.grammarIsRoot)>
public static readonly string[] ruleNames =
new string[]
{
    "invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">
};<\n>
<endif>
<if(grammar.grammarIsRoot)><! grammar imports other grammar(s) !>
int ruleLevel = 0;
public virtual int RuleLevel { get { return ruleLevel; } }
public virtual void IncRuleLevel() { ruleLevel++; }
public virtual void DecRuleLevel() { ruleLevel--; }
<if(profile)>
<ctorForProfilingRootGrammar(>
<else>
<ctorForRootGrammar(>
<endif>
<ctorForPredefinedListener(>
<else><! imported grammar !>
public int RuleLevel { get { return <grammar.delegators:{g| <g.delegateName(>>}.RuleLevel; } }
public void IncRuleLevel() { <grammar.delegators:{g| <g.delegateName(>>}.IncRuleLevel(); }
public void DecRuleLevel() { <grammar.delegators:{g| <g.delegateName(>>}.DecRuleLevel(); }
<ctorForDelegateGrammar(>
<endif>
<if(profile)>
public override bool AlreadyParsedRule( IIntStream input, int
ruleIndex )
{
    int stopIndex = GetRuleMemoization(ruleIndex, input.Index);
    ((Profiler)dbg).ExamineRuleMemoization(input, ruleIndex, stopIndex,
<grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
    return base.AlreadyParsedRule(input, ruleIndex);
}<\n>
public override void Memoize( IIntStream input, int ruleIndex, int ruleStartIndex )
{
    ((Profiler)dbg).Memoize(input, ruleIndex, ruleStartIndex,
<grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
    base.Memoize(input, ruleIndex, ruleStartIndex);
}<\n>

```

```

<endif>
protected virtual bool EvalPredicate( bool result, string predicate )
{
    dbg.SemanticPredicate( result, predicate );
    return result;
}<\n>
>>

ctorForRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<! Same except we add port number and profile stuff if root grammar !>
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input )
: this( input, DebugEventSocketProxy.DefaultDebuggerPort, new
RecognizerSharedState() )
{
}
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, int port,
RecognizerSharedState state )
: base( input, state )
{
    <createListenerAndHandshake()>
    <grammar.directDelegates:{g|<g:delegateName()> = new <g.recognizerName>( input, dbg, this.state,
this<grammar.delegates:{g|, <g:delegateName()>}> );}; separator="\n">
    <parserCtorBody()>
    <@finally()>
}<\n>
>>

ctorForProfilingRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input )
: this( input, new Profiler(null), new RecognizerSharedState() )
{
}
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, IDebugEventListener dbg,
RecognizerSharedState state )
: base( input, dbg, state )
{
    Profiler p = (Profiler)dbg;
    p.setParser(this);
    <grammar.directDelegates:
    {g|<g:delegateName()> = new <g.recognizerName>( input, dbg, this.state,
this<grammar.delegates:{g|, <g:delegateName()>}> );}; separator="\n">
    <parserCtorBody()>
    <@finally()>
}
<\n>
>>

```

```

/** Basically we don't want to set any dbg listeners are root will have it. */
ctorForDelegateGrammar() ::= <<
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, IDebugEventListener dbg,
RecognizerSharedState state<grammar.delegates:{g|, <g.recognizerName> <g.delegateName()>}> )
: base( input, dbg, state )
{
<grammar.directDelegates:
{g|<g.delegateName()> = new <g.recognizerName>( input, this, this.state<grammar.delegates:{g|,
<g.delegateName()>}> );}; separator="\n">
<parserCtorBody()>
}<\n>
>>

ctorForPredefinedListener() ::= <<
<actions.(actionScope).ctorModifier; null="public"> <name>( <inputStreamType> input, IDebugEventListener dbg
)
<@superClassRef>: base( input, dbg, new RecognizerSharedState() )<@end>
{
<if(profile)>
Profiler p = (Profiler)dbg;
p.setParser(this);
<endif>
<grammar.directDelegates:{g|<g.delegateName()>
= new <g.recognizerName>(input, dbg, this.state, this<grammar.delegates:{g|, <g.delegateName()>}>)}>};
separator="\n">
<parserCtorBody()>
<@finally()>
}<\n>
>>

createListenerAndHandshake() ::= <<
<if(TREE_PARSER)>
DebugEventSocketProxy proxy = new DebugEventSocketProxy( this, port, input.TreeAdaptor );<\n>
<else>
DebugEventSocketProxy proxy = new DebugEventSocketProxy( this, port, null );<\n>
<endif>
DebugListener = proxy;
try
{
proxy.Handshake();
}
catch ( IOException ioe )
{
ReportError( ioe );
}
>>

```

```

@genericParser.superClassName() ::= "Debug<@super.superClassName(>)"

/*
* Many of the following rules were merged into CSharp2.stg.
*/

@rule.preamble() ::= <<
if (RuleLevel == 0)
    DebugListener.Commence();
IncRuleLevel();
>>
//@rule.preamble() ::= <<
//try
//{
// dbg.EnterRule( GrammarFileName, "<ruleName>" );
// if ( RuleLevel == 0 )
// {
//   dbg.Commence();
// }
// IncRuleLevel();
// dbg.Location( <ruleDescriptor.tree.line>, <ruleDescriptor.tree.charPositionInLine> );<\n>
//>>

@rule.postamble()
::= <<
DecRuleLevel();
if (RuleLevel == 0)
    DebugListener.Terminate();
>>
//@rule.postamble() ::= <<
//dbg.Location(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.charPositionInLine>);<\n>
//}
//finally
//{
// dbg.ExitRule( GrammarFileName, "<ruleName>" );
// DecRuleLevel();
// if ( RuleLevel == 0 )
// {
//   dbg.Terminate();
// }
//}<\n>
//>>

//@insertSynpreds.start() ::= "dbg.BeginBacktrack( state.backtracking );"
//@insertSynpreds.stop() ::= "dbg.EndBacktrack( state.backtracking, success );"

// Common debug event triggers used by region overrides below

```

```

//enterSubRule() ::= <<
//try
//{{
// dbg.EnterSubRule( <decisionNumber> );<\n>
//>>

//exitSubRule() ::= <<
//}
//finally
//{{
// dbg.ExitSubRule( <decisionNumber> );
//}<\n>
//>>

//enterDecision() ::= <<
//try
//{{
// dbg.EnterDecision( <decisionNumber> );<\n>
//>>

//exitDecision() ::= <<
//}
//finally
//{{
// dbg.ExitDecision( <decisionNumber> );
//}<\n>
//>>

//enterAlt(n) ::= "dbg.EnterAlt( <n> );<\n>"

//
// Region overrides that tell various constructs to add debugging triggers

//@block.predecision() ::= "<enterSubRule()><enterDecision()>"

//@block.postdecision() ::= "<exitDecision()>"

//@block.postbranch() ::= "<exitSubRule()>"

//@ruleBlock.predecision() ::= "<enterDecision()>"

//@ruleBlock.postdecision() ::= "<exitDecision()>"

//@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

//@blockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

//@positiveClosureBlock.preloop() ::= "<enterSubRule()>"

```



```

//@positiveClosureBlock.postloop() ::= "<exitSubRule(>"

//@positiveClosureBlock.predecision() ::= "<enterDecision(>"

//@positiveClosureBlock.postdecision() ::= "<exitDecision(>"

//@positiveClosureBlock.earlyExitException() ::=
// "dbg.RecognitionException( eee<decisionNumber> );<n>"

//@closureBlock.preloop() ::= "<enterSubRule(>"

//@closureBlock.postloop() ::= "<exitSubRule(>"

//@closureBlock.predecision() ::= "<enterDecision(>"

//@closureBlock.postdecision() ::= "<exitDecision(>"

//@altSwitchCase.preal()
::= "<enterAlt(n=i)>"

//@element.prematch() ::=
// "dbg.Location( <it.line>, <it.pos> );"

//@matchSet.mismatchedSetException() ::=
// "dbg.RecognitionException( mse );"

//@dfaState.noViableAltException() ::= "dbg.RecognitionException( nvae );"

//@dfaStateSwitch.noViableAltException() ::= "dbg.RecognitionException( nvae );"

dfaDecision(decisionNumber,description) ::= <<
//try
//{
// isCyclicDecision = true;
// <super.dfaDecision(...)>
//}
//catch ( NoViableAltException nvae )
//{
// dbg.RecognitionException( nvae );
// throw nvae;
//}
//>>

//@cyclicDFA.errorMethod() ::= <<
//public override void Error( NoViableAltException nvae )
//{
// ((DebugParser)recognizer).dbg.RecognitionException( nvae );

```

```
//}  
//>>
```

```
/** Force predicate validation to trigger an event */  
evalPredicate(pred,description) ::= <<  
EvalPredicate(<pred>, "<description>")  
>>
```

Found in path(s):

```
* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-  
jar/org/antlr/codegen/templates/CSharp2/Dbg.stg
```

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```
/*
```

```
[The "BSD license"]
```

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```

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```
*/
```

```
/** Templates for building ASTs during tree parsing.
```

```
*
```

- * Deal with many combinations. Dimensions are:
- * Auto build or rewrite
- * no label, label, list label (label/no-label handled together)
- * child, root

```

* token, set, rule, wildcard
*
* Each combination has its own template except that label/no label
* is combined into tokenRef, ruleRef, ...
*/

/** Add a variable to track last element matched */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<if(!ruleDescriptor.isSynPred)>
<ASTLabelType>
  _first_0 = null;
<ASTLabelType> _last = null;<\n>
<endif>
>>

/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel=false, treeLevel=false) ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(rewriteMode)>
retval.tree = _first_0;
if ( adaptor.getParent(retval.tree)!=null && adaptor.isNil( adaptor.getParent(retval.tree) ) )
  retval.tree = (<ASTLabelType>)adaptor.getParent(retval.tree);
<endif>
<if(backtracking)>}<endif>
<endif>
>>

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
  enclosingTreeLevel, treeLevel) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = null;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel>
= (<ASTLabelType>)adaptor.nil();
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>

```

```

<if(root.el.rule)>
if ( _first_<enclosingTreeLevel>==null ) _first_<enclosingTreeLevel> =
(<ASTLabelType><root.el.label>.getTree());
<elseif(root.el.label)>
if ( _first_<enclosingTreeLevel>==null ) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ( input.LA(1)==Token.DOWN ) {
  match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
  <children:element()>
  match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
<else>
<super.tree(...)>
<endif>
>>

// TOKEN AST STUFF

/** ID!
and output=AST (same as plain tokenRef) 'cept add
* setting of _last
*/
tokenRefBang(token,label,elementIndex,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<else>
<super.tokenRefBang(...)>
<endif>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);

```

```

<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = new <terminalOptions.node>( <label> );
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else><! rewrite mode !>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>;
<endif>
<else>
<super.tokenRef(...)>
<endif>
>>

/** label+=TOKEN auto
construct */
tokenRefAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
<tokenRef(...)>
<listLabel(elem=label,...)>
<else>
<super.tokenRefAndListLabel(...)>
<endif>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree = new <terminalOptions.node>( <label> );
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
<endif>
<else>
<super.tokenRefRuleRoot(...)>
<endif>

```

```

>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
<else>
<super.tokenRefRuleRootAndListLabel(...)>
<endif>
>>

/**
Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.dupTree(<label>);
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> )<endif>
if ( _first_<treeLevel>==null ) _first_<treeLevel> = <label>;
<endif>
<else>
<super.wildcard(...)>
<endif>
>>

// SET AST

matchSet(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree
= new <terminalOptions.node>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>

```

```

<endif>
}, ...
)>
<else>
<super.matchSet(...)>
<endif>
>>

matchRuleBlockSet(s,label,elementIndex,postmatchCode,treeLevel="0",terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
<matchSet(...)>
<noRewrite(...)> <! set return tree !>
<else>
<super.matchRuleBlockSet(...)>
<endif>
>>

matchSetBang(s,label,elementIndex,postmatchCode,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(...)>
<else>
<super.matchSetBang(...)>
<endif>
>>

matchSetRuleRoot(s,label,elementIndex,debug,terminalOptions={}) ::= <<
<if(!ruleDescriptor.isSynPred)>
<super.matchSet(postmatchCode={
<if(!rewriteMode)>
<if(backtracking)> if ( <actions.(actionScope).synpredgate> ) {<endif>
<if(terminalOptions.node)>
<label>_tree
= new <terminalOptions.node>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)> \}<endif>
<endif>
}, ...
)>
<else>
<super.matchSetRuleRoot(...)>
<endif>
>>

// RULE REF AST

```

```

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>
<if(!rewriteMode)>
adaptor.addChild(root_<treeLevel>, <label>.getTree());
<else> <! rewrite mode !>
if ( _first_<treeLevel>==null ) _first_<treeLevel> = (<ASTLabelType>)<label>.getTree();
<endif>
<else>
<super.ruleRef(...)>
<endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<ruleRef(...)>
<listLabel(label, {<label>.getTree()})>
<else>
<super.ruleRefAndListLabel(...)>
<endif>
>>

/**
^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) <endif>root_<treeLevel> =
(<ASTLabelType>)adaptor.becomeRoot(<label>.getTree(), root_<treeLevel>);
<endif>
<else>
<super.ruleRefRuleRoot(...)>
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<ruleRefRuleRoot(...)>
<listLabel(label, {<label>.getTree()})>
<else>

```



```

<super.ruleRefRuleRootAndListLabel(...)>
<endif>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
  _last = (<ASTLabelType>)input.LT(1);
  <super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::=
  <<
  <if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
  <super.ruleRefTrackAndListLabel(...)>
  <else>
  <super.ruleRefTrackAndListLabel(...)>
  <endif>
  >>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
  <if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
  <super.ruleRefRuleRootTrack(...)>
  <else>
  <super.ruleRefRuleRootTrack(...)>
  <endif>
  >>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
  <if(!ruleDescriptor.isSynPred)>
  _last = (<ASTLabelType>)input.LT(1);
  <super.ruleRefRuleRootTrackAndListLabel(...)>
  <else>
  <super.ruleRefRuleRootTrackAndListLabel(...)>
  <endif>
  >>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,args,terminalOptions={ }) ::= <<
  <if(terminalOptions.node)>
  new <terminalOptions.node>(stream_<token>.nextNode())
  <else>

```

```

stream_<token>.nextNode()
<endif>
>>

ruleCleanup() ::=
<<
<super.ruleCleanup()>
<if(!ruleDescriptor.isSynPred)>
<if(!rewriteMode)>
<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<\n><endif>
retval.tree = (<ASTLabelType>)adaptor.rulePostProcessing(root_0);
<if(backtracking)>}<endif>
<endif>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1347859860_1655734093.589936/0/antlr-3-5-3-
jar/org/antlr/codegen/templates/Java/ASTTreeParser.stg

```

1.253 activation-api 1.2.2

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1.260 mongodb-driver-core 4.6.1

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```
*/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/assertions/Assertions.java
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*/
```

```
/**
 * Returns an array containing all of the elements in this deque, in
 * proper sequence (from first to last element).
 *
 * <p>The returned array will be "safe" in that no references to it are
 * maintained by this deque. (In other words, this method must allocate
 * a new array). The caller is thus free to modify the returned array.
 *
 * <p>This method acts as bridge between array-based and collection-based
 * APIs.
 *
 * @return an array containing all of the elements in this deque
 */
```

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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/ConcurrentLinkedDeque.java

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Found in path(s):

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/ServerApi.java

```
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/TransactionOptions.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/operation/WriteConcernHelper.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/ServerApiVersion.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/lang/NonNull.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/lang/Nullable.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ReadConcernAwareNoOpSessionContext.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/operation/ServerVersionHelper.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/ReadPreferenceHedgeOptions.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ReadConcernHelper.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/async/client/AsyncClientSession.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/lang/package-info.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/lang/NonNullApi.java
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* https://github.com/marianobarrios/tls-channel
*/
```

Found in path(s):

```

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/WouldBlockException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/impl/TlsChannelImpl.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/async/ExtendedAsynchronousByteChannel.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/async/package-info.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/TrackingAllocator.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/NeedsReadException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/TlsChannelFlowControlException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/BufferAllocator.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/DirectBufferAllocator.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/spi/dns/package-info.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/ServerTlsChannel.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/HeapBufferAllocator.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/TlsChannelBuilder.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/TlsChannelCallbackException.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/util/Util.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/async/AsynchronousTlsChannelGroup.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/async/AsynchronousTlsChannel.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/TlsChannel.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/impl/ByteBufferUtil.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/SniSslContextFactory.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/NeedsTaskException.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/ClientTlsChannel.java

```

```
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/package-info.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/impl/TlsExplorer.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/impl/BufferHolder.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/NeedsWriteException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/util/DirectBufferDeallocator.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/tlschannel/impl/ByteBufferSet.java
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*/
```

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```
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ExtendedAsynchronousByteChannel.java
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- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/annotations/Immutable.java
- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/annotations/NotThreadSafe.java
- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/annotations/ThreadSafe.java

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- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/DefaultClusterFactory.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/model/CollationStrength.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/AbortTransactionOperation.java

*

- /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/ByteBufferBsonOutput.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/connection/ServerVersion.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/AsyncExplainableReadOperation.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/AggregateToCollectionOperation.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/model/BucketOptions.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/Compressor.java

- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/gridfs/codecs/package-info.java

*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/async/AsyncAggregateResponseBatchCursor.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/operation/OperationReadConcernHelper.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ClusterDescriptionHelper.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/inject/SameObjectProvider.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/UpdateManyModel.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/async/AsyncBatchCursor.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/changestream/ChangeStreamDocument.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ReplyHeader.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/connection/AsyncCompletionHandler.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ClusterableServer.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/changestream/TruncatedArray.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/event/ServerListenerMulticaster.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/operation/AggregateOperationImpl.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/ReadConcern.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/Pool.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/ReplyMessage.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/MongoNodeIsRecoveringException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/WriteProtocol.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/MongoServerException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/SdamServerDescriptionManager.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/CollationMaxVariable.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/connection/netty/NettyByteBuf.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/async/function/RetryState.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/InternalStreamConnection.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/BsonDocumentWrapperHelper.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/async/function/AsyncCallbackFunction.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/AuthenticationMechanism.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/model/TimeSeriesOptions.java

*

/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/model/geojson/Polygon.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/async/client/package-info.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/event/EventListenerHelper.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/session/ServerSession.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/ChangeStreamBatchCursor.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/binding/ReadBinding.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/DefaultConnectionFactory.java

*

/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/binding/AsyncReadBinding.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/connection/package-info.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/bulk/package-info.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/model/geojson/codecs/MultiPointCodec.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/WriteConcern.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/connection/ClusterType.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/CreateCollectionOperation.java

*

/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/event/ConnectionPoolReadyEvent.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/ConnectionFactory.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-

jar/com/mongodb/client/model/FindOneAndReplaceOptions.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/event/ConnectionPoolListener.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/FindOneAndUpdateOptions.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/operation/DropCollectionOperation.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/event/ServerClosedEvent.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/MongoGridFSException.java
*
/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/InsertOneModel.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/validator/ReplacingDocumentFieldNameValidator.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/client/model/changestream/package-info.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/NoOpSessionContext.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/InternalConnection.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/CommandOperationHelper.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/async/function/RetryingAsyncCallbackSupplier.java

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/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/model/IndexOptions.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/client/result/DeleteResult.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/DefaultDnsSrvRecordMonitorFactory.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/SplittablePayloadBsonWriter.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/event/CommandListener.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/DefaultServer.java

* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-

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jar/com/mongodb/AwsCredential.java
*
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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/opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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jar/com/mongodb/DuplicateKeyException.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/event/ConnectionPoolListenerAdapter.java
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
jar/com/mongodb/internal/connection/DnsSrvRecordInitializer.java

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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/operation/MapReduceToCollectionOperation.java
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/LoadBalancedServer.java
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/AutoEncryptionSettings.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/management/package-info.java
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* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/connection/ServerTuple.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/inject/Provider.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/bulk/DeleteRequest.java
* /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/event/ServerMonitorListenerAdapter.java

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- * /opt/cola/permits/1356793684_1656997111.625937/0/mongodb-driver-core-4-6-1-sources-jar/com/mongodb/internal/authentication/SaslPrep.java

1.261 bson-record-codec 4.6.1

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- * /opt/cola/permits/1356793478_1656997105.287569/0/bson-record-codec-4-6-1-sources-jar/org/bson/codecs/record/annotations/BsonId.java
- * /opt/cola/permits/1356793478_1656997105.287569/0/bson-record-codec-4-6-1-sources-jar/org/bson/codecs/record/annotations/package-info.java
- *
- /*
- * /opt/cola/permits/1356793478_1656997105.287569/0/bson-record-codec-4-6-1-sources-jar/org/bson/codecs/record/annotations/BsonRepresentation.java
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- * /opt/cola/permits/1356793478_1656997105.287569/0/bson-record-codec-4-6-1-sources-jar/org/bson/codecs/record/annotations/BsonProperty.java
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1.262 agent-api 4.5.13.27526

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```

Found in path(s):

```
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/AppdynamicsAgent.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/impl/NoOpExitCall.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/ExitCall.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/EumDelegate.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/EventPublisher.java
*
/opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/MetricPublisher.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/impl/NoOpTransaction.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/Transaction.java
```

No license file was found, but licenses were detected in source scan.

```
/*
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 * 2019
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 */
```

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```
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/bootstrap/IApiBootstrapFacade.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
```

```
jar/com/appdynamics/agent/api/ExitTypes.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/bootstrap/NoOpTransactionDelegate.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/bootstrap/IApiTransactionDelegate.java
* /opt/cola/permits/1366801991_1658170427.268079/0/agent-api-4-5-13-27526-sources-
jar/com/appdynamics/agent/api/EntryTypes.java
```

1.263 rxjava-server 0.9.0

1.263.1 Available under license :

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1.264 core-server 0.9.0

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1.265 zlib 1.2.11

1.265.1 Available under license :

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/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.11, January 15th, 2017

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Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), rfc1951 (deflate format) and rfc1952 (gzip format).

*/

1.266 logback-throttling-appender 1.1.9

1.266.1 Available under license :

No license file was found, but licenses were detected in source scan.

<name>Apache License 2.0</name>
<url><http://www.apache.org/licenses/LICENSE-2.0.html></url>

Found in path(s):

* /opt/cola/permits/1368298591_1658301187.6939363/0/logback-throttling-appender-1-1-9-1-jar/META-INF/maven/io.dropwizard.logback/logback-throttling-appender/pom.xml

1.267 glibc-common 2.17-326.el7_9

1.267.1 Available under license :

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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@subheading END OF TERMS AND CONDITIONS

@page

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1.268 avro 1.11.1

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1.271 kotlin 1.7.10-release-333

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1.272 python-gobject-base 3.22.0-1.el7_4.1

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Any

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1.273 python-urlgrabber 3.10

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1.275 wsgiref 0.1.2

1.275.1 Available under license :

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Found in path(s):

* /opt/cola/permits/1403963770_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/wsgiref/validate.py

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Metadata-Version: 1.0

Name: wsgiref

Version: 0.1.2

Summary: WSGI (PEP 333) Reference Library

Home-page: <http://cheeseshop.python.org/pypi/wsgiref>

Author: Phillip J. Eby

Author-email: web-sig@python.org

License: PSF or ZPL

Description: This is a standalone release of the ``wsgiref`` library to be included in Python 2.5. For the standalone version's documentation, see:

HTML

http://peak.telecommunity.com/wsgiref_docs/

PDF

<http://peak.telecommunity.com/wsgiref.pdf>

Platform: UNKNOWN

Found in path(s):

* /opt/cola/permits/1403963770_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/wsgiref.egg-info/PKG-INFO

* /opt/cola/permits/1403963770_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/PKG-INFO

1.276 rpm-python 4.11.3-48.el7_9

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To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is

the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library".

The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs

(which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library
(or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in

these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work.

(Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
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Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

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library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

1.277 pygobject 3.22.0

1.277.1 Available under license :

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Version 2.1, February 1999

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Preamble

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This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it

does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any

executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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1.279 systemd 219-78.el7_9.7

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* <https://github.com/jponge/lzma-java>

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1.288 ca-certificates 2022.2.54-74.el7_9

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////

ca-legacy(8)

=====

:doctype: manpage

:man source: ca-legacy

NAME

ca-legacy - Manage the system configuration for legacy CA certificates

SYNOPSIS

`*ca-legacy* ['COMMAND']`

DESCRIPTION

`ca-legacy(8)` is used to include or exclude a set of legacy Certificate Authority (CA) certificates in the system's list of trusted CA certificates.

The list of CA certificates and trust flags included in the `ca-certificates` package are based on the decisions made by Mozilla.org according to the Mozilla CA policy.

Occasionally, removal or distrust decisions made by Mozilla.org might be incompatible with the requirements or limitations of some applications that also use the CA certificates list in the Linux environment.

The `ca-certificates` package might keep some CA certificates included and trusted by default, as long as it is seen necessary by the maintainers, despite the fact that they have been removed by Mozilla. These certificates are called legacy CA certificates.

The general requirements to keep legacy CA certificates included and trusted might change over time, for example if functional limitations of software packages have been resolved. Future versions of the `ca-certificates` package might reduce the set of legacy CA certificates that are included and trusted by default.

The `ca-legacy(8)` command can be used to override the default behaviour.

The mechanisms to individually trust or distrust CA certificates as described in `update-ca-trust(8)` still apply.

COMMANDS

`*check*::`

The current configuration will be shown.

`*default*::`

Configure the system to use the default configuration, as recommended by the package maintainers.

`*disable*::`

Configure the system to explicitly disable legacy CA certificates. Using this configuration, the system will use the set of included and trusted CA certificates as released by Mozilla.

install::

The configuration file will be read and the system configuration will be set accordingly. This command is executed automatically during upgrades of the ca-certificates package.

FILES

/etc/pki/ca-trust/ca-legacy.conf::

A configuration file that will be used and modified by the ca-legacy command.

The contents of the configuration file will be read on package upgrades.

AUTHOR

Written by Kai Engert.

Found in path(s):

* /opt/cola/permits/1425443200_1664017022.0583818/0/ca-certificates-2022.2.54-74.el7_9.src.rpm-cosi-expand-archive-GCjLhYzR/ca-legacy.8.txt

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////

update-ca-trust(8)

=====

:doctype: manpage

:man source: update-ca-trust

NAME

update-ca-trust - manage consolidated and dynamic configuration of CA certificates and associated trust

SYNOPSIS

update-ca-trust ['COMMAND']

DESCRIPTION

update-ca-trust(8) is used to manage a consolidated and dynamic configuration feature of Certificate Authority (CA) certificates and associated trust.

The feature is available for new applications that read the consolidated configuration files found in the `/etc/pki/ca-trust/extracted` directory or that load the PKCS#11 module `p11-kit-trust.so`

Parts of the new feature are also provided in a way to make it useful for legacy applications.

Many legacy applications expect CA certificates and trust configuration in a fixed location, contained in files with particular path and name, or by referring to a classic PKCS#11 trust module provided by the NSS cryptographic library.

The dynamic configuration feature provides functionally compatible replacements for classic configuration files and for the classic NSS trust module named `libnssckbi`.

In order to enable legacy applications, that read the classic files or access the classic module, to make use of the new consolidated and dynamic configuration feature, the classic filenames have been changed to symbolic links.

The symbolic links refer to dynamically created and consolidated output stored below the `/etc/pki/ca-trust/extracted` directory hierarchy.

The output is produced using the 'update-ca-trust' command (without parameters), or using the 'update-ca-trust extract' command. In order to produce the output, a flexible set of source configuration is read, as described in section <<sourceconf,SOURCE CONFIGURATION>>.

In addition, the classic PKCS#11 module is replaced with a new PKCS#11 module (p11-kit-trust.so) that dynamically reads the same source configuration.

[[sourceconf]]

SOURCE CONFIGURATION

The dynamic configuration feature uses several source directories that will be scanned for any number of source files. *It is important to select the correct subdirectory for adding files, as the subdirectory defines how contained certificates will be trusted or distrusted, and which file formats are read.*

Files in *subdirectories below the directory hierarchy /usr/share/pki/ca-trust-source/* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a *low priority*.

Files in *subdirectories below the directory hierarchy /etc/pki/ca-trust/source/* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a *high priority*.

.You may use the following rules of thumb to decide, whether your configuration files should be added to the /etc or rather to the /usr directory hierarchy:

* If you are manually adding a configuration file to a system, you probably want it to override any other default configuration, and you most likely should add it to the respective subdirectory in the /etc hierarchy.

* If you are creating a package that provides additional root CA certificates, that is intended for distribution to several computer systems, but you still want to allow the administrator to override your list, then your package should add your files to the respective subdirectory in the /usr hierarchy.

* If you are creating a package that is supposed to override the default system trust settings, that is intended for distribution to several computer systems, then your package should install the files to the respective subdirectory in the /etc hierarchy.

.*QUICK HELP 1*:. To add a certificate in the simple PEM or DER file formats to the list of CAs trusted on the system:

- * add it as a new file to directory /etc/pki/ca-trust/source/anchors/
- * run 'update-ca-trust extract'

.***QUICK HELP 2***: If your certificate is in the extended BEGIN TRUSTED file format (which may contain distrust/blacklist trust flags, or trust flags for usages other than TLS) then:

- * add it as a new file to directory /etc/pki/ca-trust/source/
- * run 'update-ca-trust extract'

.In order to offer simplicity and flexibility, the way certificate files are treated depends on the subdirectory they are installed to.

- * simple trust anchors subdirectory: /usr/share/pki/ca-trust-source/anchors/ or /etc/pki/ca-trust/source/anchors/
- *
- simple blacklist (distrust) subdirectory: /usr/share/pki/ca-trust-source/blacklist/ or /etc/pki/ca-trust/source/blacklist/
- * extended format directory: /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/

.In the main directories /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ you may install one or multiple files in the following file formats:

- * certificate files that include trust flags, in the BEGIN/END TRUSTED CERTIFICATE file format (any file name), which have been created using the openssl x509 tool and the -adddistrust -addtrust options.

Bundle files with multiple certificates are supported.

- * files in the p11-kit file format using the .p11-kit file name extension, which can (e.g.) be used to distrust certificates based on serial number and issuer name, without having the full certificate available.

(This is currently an undocumented format, to be extended later.

For examples of the supported formats, see the files shipped with the ca-certificates package.)

- * certificate files without trust flags in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format (any file name). Such files will be added with neutral trust, neither trusted nor distrusted.

They will simply be known to the system, which might be helpful to assist cryptographic software in constructing chains of certificates.

(If you want a CA certificate in these file formats to be trusted, you should remove it from this directory and move it to the ./anchors subdirectory instead.)

In the anchors subdirectories /usr/share/pki/ca-trust-source/anchors/ or /etc/pki/ca-trust/source/anchors/ you may install one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format. Each certificate will be treated as ***trusted*** for all purposes.

In the blacklist subdirectories /usr/share/pki/ca-trust-source/blacklist/ or /etc/pki/ca-trust/source/blacklist/ you may install

one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format. Each certificate will be treated as ***distrusted*** for all purposes.

Please refer to the x509(1) manual page for the documentation of the BEGIN/END CERTIFICATE and BEGIN/END TRUSTED CERTIFICATE file formats.

Applications that rely on a static file for a list of trusted CAs may load one of the files found in the `/etc/pki/ca-trust/extracted` directory. After modifying any file in the `/usr/share/pki/ca-trust-source/` or `/etc/pki/ca-trust/source/` directories or in any of their subdirectories, or after adding a file, it is necessary to run the `'update-ca-trust extract'` command, in order to update the consolidated files in `/etc/pki/ca-trust/extracted/`.

Applications that load the classic PKCS#11 module using filename `libnssckbi.so` (which has been converted into a symbolic link pointing to the new module) and any application capable of loading PKCS#11 modules and loading `p11-kit-trust.so`, will benefit from the dynamically merged set of certificates and trust information stored in the `/usr/share/pki/ca-trust-source/` and `/etc/pki/ca-trust/source/` directories.

[[extractconf]]

EXTRACTED CONFIGURATION

The directory `/etc/pki/ca-trust/extracted/` contains generated CA certificate bundle files which are created and updated, based on the `<<sourceconf,SOURCE CONFIGURATION>>` by running the `'update-ca-trust extract'` command.

If your application isn't able to load the PKCS#11 module `p11-kit-trust.so`, then you can use these files in your application to load a list of global root CA certificates.

Please never manually edit the files stored in this directory, because your changes will be lost and the files automatically overwritten, each time the `'update-ca-trust extract'` command gets executed.

In order to install new trusted or distrusted certificates, please rather install them in the respective subdirectory below the `/usr/share/pki/ca-trust-source/` or `/etc/pki/ca-trust/source/` directories, as described in the `<<sourceconf,SOURCE CONFIGURATION>>` section.

The directory `/etc/pki/ca-trust/extracted/java/` contains a CA certificate bundle in the java keystore file format. Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files. File `cacerts` contains CA certificates trusted for TLS server authentication.

The directory `/etc/pki/ca-trust/extracted/openssl/` contains CA certificate bundle files in the extended BEGIN/END TRUSTED CERTIFICATE file format, as described in the x509(1) manual page.

File `ca-bundle.trust.crt` contains the full set of all trusted or distrusted certificates, including the associated trust flags.

The directory `/etc/pki/ca-trust/extracted/pem/` contains CA certificate bundle files in the simple BEGIN/END CERTIFICATE file format, as described in the x509(1) manual page.

Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files.

File `tls-ca-bundle.pem` contains CA certificates trusted for TLS server authentication.

File `email-ca-bundle.pem` contains CA certificates trusted for E-Mail protection.

File `objsign-ca-bundle.pem` contains CA certificates trusted for code signing.

COMMANDS

(absent/empty command)::

Same as the `*extract*` command described below. (However, the command may print fewer warnings, as this command is being run during rpm package installation, where non-fatal status output is undesired.)

`*extract*::`

Instruct `update-ca-trust` to scan the `<<sourceconf,SOURCE CONFIGURATION>>` and produce updated versions of the consolidated configuration files stored below the `/etc/pki/ca-trust/extracted` directory hierarchy.

FILES

`/etc/pki/tls/certs/ca-bundle.crt::`

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the simple BEGIN/END CERTIFICATE file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/etc/pki/tls/certs/ca-bundle.trust.crt::`

Classic filename, file contains a list of CA certificates in the extended BEGIN/END TRUSTED CERTIFICATE file format, which includes trust (and/or distrust) flags specific to certificate usage.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/etc/pki/java/cacerts::`

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the Java keystore file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/usr/share/pki/ca-trust-source::`

Contains multiple, low priority source configuration files as explained in section <<sourceconf,SOURCE CONFIGURATION>>. Please pay attention to the specific meanings of the respective subdirectories.

/etc/pki/ca-trust/source::

Contains

multiple, high priority source configuration files as explained in section <<sourceconf,SOURCE CONFIGURATION>>. Please pay attention to the specific meanings of the respective subdirectories.

/etc/pki/ca-trust/extracted::

Contains consolidated and automatically generated configuration files for consumption by applications, which are created using the 'update-ca-trust extract' command. Don't edit files in this directory, because they will be overwritten.

See section <<extractconf,EXTRACTED CONFIGURATION>> for additional details.

AUTHOR

Written by Kai Engert and Stef Walter.

Found in path(s):

* /opt/cola/permits/1425443200_1664017022.0583818/0/ca-certificates-2022.2.54-74.el7_9.src.rpm-cosi-expand-archive-GCjLhYzR/update-ca-trust.8.txt

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1.291 nss-util 3.79.0-1.el7_9

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Found in path(s):

* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ByteStream.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/Callback.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtConstructor.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/InnerClassesAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/Lex.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/scopedpool/ScopedClassPoolFactoryImpl.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/stackmap/BasicBlock.java
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 *
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 * /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ClassFilePrinter.java

* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/TypeChecker.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ParameterAnnotationsAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/convert/TransformAfter.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ConstantAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/ClassPool.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/DeprecatedAttribute.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/ASTree.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/analysis/Frame.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtNewMethod.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/stackmap/TypeData.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/Translator.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/LoaderClassPath.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/Handler.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/NoSuchClassError.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/BadBytecode.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/JvstCodeGen.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/convert/TransformBefore.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtMethod.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/Visitor.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/scopedpool/ScopedClassPoolRepositoryImpl.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/Loader.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/CodeGen.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/runtime/DotClass.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/CodeAttribute.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/SerialVersionUID.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/FieldDecl.java

* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/LongVector.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/StackMapTable.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/rmi/RemoteRef.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/rmi/Proxy.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtMember.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/CondExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtNewConstructor.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/ConstructorCall.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/analysis/Executor.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/SyntaxError.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/SymbolTable.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/reflect/ClassMetaobject.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtNewWrappedMethod.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/util/proxy/MethodHandler.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/util/proxy/ProxyObject.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-

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jar/javassist/compiler/JvstTypeChecker.java
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jar/javassist/NotFoundException.java
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jar/javassist/scopedpool/ScopedClassPoolRepository.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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jar/javassist/bytecode/AnnotationDefaultAttribute.java
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jar/javassist/compiler/ast/MethodDecl.java

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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/AssignExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/Mnemonic.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/InstructionPrinter.java

* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/web/Webserver.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/StringL.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/TokenId.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/Variable.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/util/proxy/RuntimeSupport.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/AttributeInfo.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/SignatureAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/reflect/Reflection.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/AnnotationsAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/analysis/SubroutineScanner.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtField.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/NewExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/CodeAnalyzer.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/FloatMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-

```

jar/javassist/bytecode/annotation/MemberValueVisitor.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/MemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/LongMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/CharMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/ByteMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/ClassMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/Annotation.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/ArrayMemberValue.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/DoubleMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/ShortMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/IntegerMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/StringMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/EnumMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/BooleanMemberValue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/annotation/AnnotationMemberValue.java

```

1.293 jline 3.20.0

1.293.1 Available under license :

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jar/org/jline/builtins/ScreenTerminal.java

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jar/org/jline/terminal/impl/jansi/win/JansiWinConsoleWriter.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Buffer.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/utils/NonBlockingPumpInputStream.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/ssh/Ssh.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/ssh/ShellFactoryImpl.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/terminal/impl/AbstractWindowsConsoleWriter.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/reader/impl/BufferImpl.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/InterpolationHelper.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleBundle.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/WriterOutputStream.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleBundleInvocationHandler.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleResolver.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyledWriter.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/solaris/SolarisNativePty.java
*
/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/MemoryStyleSource.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/PumpReader.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/SimpleMaskingCallback.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/ssh/ShellCommand.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/osx/OsXNativePty.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleColor.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/telnet/Telnet.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/freebsd/FreeBsdNativePty.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/linux/LinuxNativePty.java
*
/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/win/JnaWinConsoleWriter.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/NonBlockingPumpReader.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/NopStyleSource.java
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jar/org/jline/builtins/telnet/ConnectionManager.java
*
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/ConnectionEvent.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/TelnetIO.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/Connection.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/ConnectionData.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/PortListener.java
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- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/ParsedLine.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/History.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/PosixSysTerminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/CompletingParsedLine.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/NonBlocking.java
- *
- /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/NonBlockingReader.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleExpression.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/KillRing.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/StyleResolver.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/Size.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Completer.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/completer/FileNameCompleter.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/PosixPtyTerminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/Colors.java
- *
- /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/AttributedStringBuilder.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/Styler.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/terminal/terminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/Curses.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/LineDisciplineTerminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleFactory.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/ExternalTerminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/DumbTerminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/NfaMatcher.java
- *
- /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/NonBlockingInputStream.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

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jar/org/jline/utils/NonBlockingReaderImpl.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/terminal/impl/jna/win/Kernel32.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/keymap/BindingReader.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/reader/MaskingCallback.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/style/StyleSource.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/utils/NonBlockingInputStreamImpl.java
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```

```
auto_left_margin, bw, bw
auto_right_margin, am, am
back_color_erase, bce, ut
can_change, ccc, cc
ceol_standout_glitch, xhp, xs
col_addr_glitch, xhpa, YA
cpi_changes_res, cpix, YF
cr_cancels_micro_mode, crxm, YB
dest_tabs_magic_sms0, xt, xt
eat_newline_glitch, xenl, xn
erase_overstrike, eo, eo
generic_type, gn, gn
hard_copy, hc, hc
hard_cursor, chts, HC
has_meta_key, km, km
has_print_wheel, daisy, YC
has_status_line, hs, hs
hue_lightness_saturation, hls, hl
insert_null_glitch, in, in
lpi_changes_res, lpix, YG
memory_above, da, da
memory_below, db, db
move_insert_mode, mir, mi
move_standout_mode, msgr, ms
needs_xon_xoff, nxon, nx
no_esc_ctlc, xsb, xb
no_pad_char, npc,
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NP

non_dest_scroll_region, ndscr, ND
non_rev_rmcup, nrrmc, NR
over_strike, os, os
prtr_silent, mc5i, 5i
row_addr_glitch, xvpa, YD
semi_auto_right_margin, sam, YE
status_line_esc_ok, eslok, es
tilde_glitch, hz, hz
transparent_underline, ul, ul
xon_xoff, xon, xo
columns, cols, co
init_tabs, it, it
label_height, lh, lh
label_width, lw, lw
lines, lines, li
lines_of_memory, lm, lm
magic_cookie_glitch, xmc, sg
max_attributes, ma, ma
max_colors, colors, Co
max_pairs, pairs, pa
maximum_windows, wnum, MW
no_color_video, ncv, NC
num_labels, nlab, Nl
padding_baud_rate, pb, pb
virtual_terminal, vt, vt
width_status_line, wsl, ws
bit_image_entwining, bitwin, Yo
bit_image_type, bitype, Yp
buffer_capacity, bufesz, Ya
buttons, btns, BT
dot_horz_spacing, spinh, Yc
dot_vert_spacing, spinv, Yb
max_micro_address, maddr, Yd
max_micro_jump, mjump, Ye
micro_col_size, mcs, Yf
micro_line_size, mls, Yg
number_of_pins, npins, Yh
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output_res_horz_inch, orhi, Yk
output_res_line, orl, Yj
output_res_vert_inch,
orvi, Yl
print_rate, cps, Ym
wide_char_size, widcs, Yn
acs_chars, acsc, ac
back_tab, cbt, bt
bell, bel, bl

carriage_return, cr, cr
change_char_pitch, cpi, ZA
change_line_pitch, lpi, ZB
change_res_horz, chr, ZC
change_res_vert, cvr, ZD
change_scroll_region, csr, cs
char_padding, rmp, rP
clear_all_tabs, tbc, ct
clear_margins, mgc, MC
clear_screen, clear, cl
clr_bol, e11, cb
clr_eol, el, ce
clr_eos, ed, cd
column_address, hpa, ch
command_character, cmdch, CC
create_window, cwin, CW
cursor_address, cup, cm
cursor_down, cud1, do
cursor_home, home, ho
cursor_invisible, civis, vi
cursor_left, cub1, le
cursor_mem_address, mrcup, CM
cursor_normal, cnorm, ve
cursor_right, cuf1, nd
cursor_to_ll, ll, ll
cursor_up, cuu1, up
cursor_visible, cvvis, vs
define_char, defc, ZE
delete_character, dch1, dc
delete_line, dl1, dl
dial_phone, dial, DI
dis_status_line, dsl, ds
display_clock, dclk, DK
down_half_line, hd, hd
ena_acs, enacs, eA
enter_alt_charset_mode, smacs, as
enter_am_mode, smam,
SA
enter_blink_mode, blink, mb
enter_bold_mode, bold, md
enter_ca_mode, smcup, ti
enter_delete_mode, smdc, dm
enter_dim_mode, dim, mh
enter_doublewide_mode, swidm, ZF
enter_draft_quality, sdrfq, ZG
enter_insert_mode, smir, im
enter_italics_mode, sitm, ZH
enter_leftward_mode, slm, ZI

enter_micro_mode, smicm, ZJ
enter_near_letter_quality, snlq, ZK
enter_normal_quality, snrmq, ZL
enter_protected_mode, prot, mp
enter_reverse_mode, rev, mr
enter_secure_mode, invis, mk
enter_shadow_mode, sshm, ZM
enter_standout_mode, smso, so
enter_subscript_mode, ssubm, ZN
enter_superscript_mode, ssupm, ZO
enter_underline_mode, smul, us
enter_upward_mode, sum, ZP
enter_xon_mode, smxon, SX
erase_chars, ech, ec
exit_alt_charset_mode, rmacs, ae
exit_am_mode, rmam, RA
exit_attribute_mode, sgr0, me
exit_ca_mode, rmcup, te
exit_delete_mode, rmdc, ed
exit_doublewide_mode, rwidm, ZQ
exit_insert_mode, rmir, ei
exit_italics_mode, ritm, ZR
exit_leftward_mode, rlm, ZS
exit_micro_mode, rmicm, ZT
exit_shadow_mode, rshm,
ZU
exit_standout_mode, rmso, se
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exit_superscript_mode, rsupm, ZW
exit_underline_mode, rmul, ue
exit_upward_mode, rum, ZX
exit_xon_mode, rmxon, RX
fixed_pause, pause, PA
flash_hook, hook, fh
flash_screen, flash, vb
form_feed, ff, ff
from_status_line, fsl, fs
goto_window, wingo, WG
hangup, hup, HU
init_1string, is1, i1
init_2string, is2, is
init_3string, is3, i3
init_file, if, if
init_prog, iprog, iP
initialize_color, initc, Ic
initialize_pair, initp, Ip
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insert_line, il1, al

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key_create, kcrt, @6
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key_f59, kf59, Fn
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key_f61, kf61, Fp
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key_f63, kf63, Fr
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key_f9, kf9, k9
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key_ic, kich1, kI

key_il, kil, kA
key_left, kcub1, kl
key_ll, kll, kH
key_mark, kmrk, %2
key_message, kmsg, %3
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key_print, kpri, %9
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key_restart, krst, &4
key_resume, kres, &5
key_right, kcuf1, kr
key_save, ksav, &6
key_sbeg, kBEG, &9
key_scancel, kCAN, &0
key_scommand, kCMD, *1
key_scopy, kCPY, *2
key_screate, kCRT, *3
key_sdc, kDC, *4
key_sdl, kDL, *5
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key_send, kEND, *7
key_seol, kEOL, *8
key_sexit, kEXT, *9
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key_sfind, kFND, *0
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key_sleft, kLFT, #4
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key_smove, kMOV, %b
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key_sprint, kPRT, %f
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key_sright, kRIT, %i
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key_ssuspend, kSPD, !2
key_stab, khts, kT
key_sundo, kUND, !3
key_suspend, kspd, &7
key_undo, kund, &8
key_up, kcuu1, ku
keypad_local, rmkx, ke
keypad_xmit, smkx, ks
lab_f0, lf0, l0
lab_f1, lf1, l1
lab_f10, lf10, la
lab_f2, lf2, l2
lab_f3, lf3, l3
lab_f4, lf4, l4
lab_f5, lf5, l5
lab_f6, lf6, l6
lab_f7, lf7, l7
lab_f8, lf8, l8
lab_f9, lf9, l9
label_format, fln, Lf
label_off, rmln, LF
label_on, smln, LO
meta_off, rmm, mo
meta_on, smm, mm
micro_column_address, mhpa, ZY
micro_down, mcud1, ZZ
micro_left, mcub1, Za
micro_right, mcuf1, Zb
micro_row_address, mvpa, Zc
micro_up, mcuu1, Zd
newline, nel, nw
order_of_pins, porder, Ze
orig_colors, oc, oc
orig_pair, op, op
pad_char, pad, pc
parm_dch, dch, DC
parm_delete_line, dl, DL
parm_down_cursor, cud, DO
parm_down_micro,
mcud, Zf
parm_ich, ich, IC
parm_index, indn, SF
parm_insert_line, il, AL
parm_left_cursor, cub, LE
parm_left_micro, mcub, Zg

parm_right_cursor, cuf, RI
parm_right_micro, mcuf, Zh
parm_rindex, rin, SR
parm_up_cursor, cuu, UP
parm_up_micro, mcuu, Zi
pkey_key, pfkey, pk
pkey_local, pfloc, pl
pkey_xmit, pfx, px
plab_norm, pln, pn
print_screen, mc0, ps
prtr_non, mc5p, pO
prtr_off, mc4, pf
prtr_on, mc5, po
pulse, pulse, PU
quick_dial, qdial, QD
remove_clock, rmclk, RC
repeat_char, rep, rp
req_for_input, rfi, RF
reset_1string, rs1, r1
reset_2string, rs2, r2
reset_3string, rs3, r3
reset_file, rf, rf
restore_cursor, rc, rc
row_address, vpa, cv
save_cursor, sc, sc
scroll_forward, ind, sf
scroll_reverse, ri, sr
select_char_set, scs, Zj
set_attributes, sgr, sa
set_background, setb, Sb
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set_foreground, setf, Sf
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smgr, MR
set_right_margin_parm, smgrp, Zn
set_tab, hts, st
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set_top_margin_parm, smgtp, Zp
set_window, wind, wi
start_bit_image, sbim, Zq
start_char_set_def, scsd, Zr
stop_bit_image, rbim, Zs
stop_char_set_def, rcsd, Zt

subscript_characters, subcs, Zu
superscript_characters, supcs, Zv
tab, ht, ta
these_cause_cr, docr, Zw
to_status_line, tsl, ts
tone, tone, TO
underline_char, uc, uc
up_half_line, hu, hu
user0, u0, u0
user1, u1, u1
user2, u2, u2
user3, u3, u3
user4, u4, u4
user5, u5, u5
user6, u6, u6
user7, u7, u7
user8, u8, u8
user9, u9, u9
wait_tone, wait, WA
xoff_character, xoffc, XF
xon_character, xonc, XN
zero_motion, zerom, Zx
alt_scancode_esc, scesa, S8
bit_image_carriage_return, bicr, Yv
bit_image_newline, binel, Zz
bit_image_repeat, birep, Xy
char_set_names, csnm, Zy
code_set_init, csin, ci
color_names, colorm, Yw
define_bit_image_region, defbi, Yx
device_type, devt, dv
display_pc_char, dispc, S1
end_bit_image_region, endbi, Yy
enter_pc_charset_mode,
smpch, S2
enter_scancode_mode, smsc, S4
exit_pc_charset_mode, rmpch, S3
exit_scancode_mode, rMSC, S5
get_mouse, getm, Gm
key_mouse, kmous, Km
mouse_info, minfo, Mi
pc_term_options, pctrm, S6
pkey_plab, pfxl, xl
req_mouse_pos, reqmp, RQ
scancode_escape, scesc, S7
set0_des_seq, s0ds, s0
set1_des_seq, s1ds, s1
set2_des_seq, s2ds, s2

set3_des_seq, s3ds, s3
set_a_background, setab, AB
set_a_foreground, setaf, AF
set_color_band, setcolor, Yz
set_lr_margin, smglr, ML
set_page_length, slines, YZ
set_tb_margin, smgtb, MT
enter_horizontal_hl_mode, ehhlm, Xh
enter_left_hl_mode, elhlm, Xl
enter_low_hl_mode, elohlm, Xo
enter_right_hl_mode, erhlm, Xr
enter_top_hl_mode, ethlm, Xt
enter_vertical_hl_mode, evhlm, Xv
set_a_attributes, sgr1, sA
set_pglen_inch, slength, sL

Found in path(s):

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utlils/capabilities.txt

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* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/ConnectionListener.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-
jar/org/jline/builtins/telnet/ConnectionFilter.java

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#

black

maroon

green

olive

navy

purple

teal

silver

grey

red

lime

yellow

blue

fuchsia

aqua

white

grey0

navyblue

darkblue

blue3
blue3a
blue1
darkgreen
deepskyblue4
deepskyblue4a
deepskyblue4b
dodgerblue3
dodgerblue2
green4
springgreen4
turquoise4
deepskyblue3
deepskyblue3a
dodgerblue1
green3
springgreen3
darkcyan
lightseagreen
deepskyblue2
deepskyblue1
green3a
springgreen3a
springgreen2
cyan3
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mediumpurple4
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paleturquoise4

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chartreuse3
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cadetblue
cadetbluea
skyblue3
steelblue1
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palegreen3
seagreen3
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wheat1
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grey46
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grey82
grey85
grey89
grey93

Found

in path(s):

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/colors.txt

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* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Reference.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Expander.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/spi/Pty.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/package-info.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/terminal/impl/CursorSupport.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/terminal/impl/jna/win/WindowsAnsiWriter.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/reader/impl/completer/NullCompleter.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/Levenshtein.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/reader/impl/completer/AggregateCompleter.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/reader/impl/history/package-info.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/keymap/KeyMap.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/Utils/OSUtils.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/reader/impl/completer/package-info.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/terminal/MouseEvent.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/package-info.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/Attributes.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/terminal/impl/MouseSupport.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/terminal/impl/ExecPty.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/Utils/AttributedString.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-

jar/org/jline/Utils/ShutdownHooks.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/AbstractCommandRegistry.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/win/JnaWinSysTerminal.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/LineReaderBuilder.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/completer/SystemCompleter.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/linux/CLibrary.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/osx/CLibrary.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/widget/Widgets.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/linux/LinuxNativePty.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/widget/AutopairWidgets.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/CommandRegistry.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/Nano.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/CommandMethods.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/spi/JnaSupport.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/TerminalBuilder.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/JnaSupportImpl.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/Builtins.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/Display.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/win/JansiWinSysTerminal.java

*

/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/solaris/SolarisNativePty.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/JansiSupportImpl.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/Log.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/DefaultParser.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Parser.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/LineReaderImpl.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/ConsoleOptionGetter.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/JlineCommandRegistry.java
*
/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/CompletionMatcher.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/CmdLine.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/EndOfFileException.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/TTop.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/ConsoleEngine.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/ColorPalette.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/solaris/CLibrary.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/CmdDesc.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/freebsd/CLibrary.java
*
/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/spi/JansiSupport.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/ScriptEngine.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/freebsd/FreeBsdNativePty.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/JnaNativePty.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jna/osx/OsXNativePty.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/Less.java
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* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/jansi/win/WindowsAnsiWriter.java
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- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-console/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-terminal-jansi/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-remote-ssh/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-reader/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-terminal-jna/pom.xml
- *
- /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-builtins/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-style/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-terminal/pom.xml
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/META-INF/maven/org.jline/jline-remote-telnet/pom.xml

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- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/AbstractWindowsTerminal.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Candidate.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/AbstractPty.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/ConfigurationPath.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/Tmux.java
- *
- /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/completer/ArgumentCompleter.java
- * /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/completer/StringsCompleter.java

* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/InfoCmp.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Highlighter.java
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/Editor.java
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* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/DefaultPrinter.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/ConsoleEngineImpl.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/PrintAboveWriter.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/Commands.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/history/DefaultHistory.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/ArgDesc.java  
*  
/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/DefaultHighlighter.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/Printer.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/widget/TailTipWidgets.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/Styles.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/LineReader.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/SystemRegistryImpl.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/AttributedCharSequence.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/reader/impl/CompletionMatcherImpl.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/builtins/Completers.java  
*  
/opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/terminal/impl/AbstractTerminal.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/impl/SystemHighlighter.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/console/SystemRegistry.java  
* /opt/cola/permits/1434683282_1665037674.3132415/0/jline-3-20-0-sources-jar/org/jline/utils/AttributedStyle.java
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```

1.294 kotlin 1.7.10

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```
{"version":3,"file":"kotlin.js","sources":["wrapper.js","js/arrayUtils.js","js/callableReferenceUtils.js","js/conversions.js","js/core.js","js/long.js","js/markerFunctions.js","js/misc.js","js/polyfills.js","js/rtti.js","runtime/arrayUtils.kt","runtime/Enum.kt","primitiveCompanionObjects.kt","common/src/generated/_Arrays.kt","common/src/generated/_Ranges.kt","unsigned/src/kotlin/UByte.kt","unsigned/src/kotlin/UInt.kt","unsigned/src/kotlin/UShort.kt","builtin-sources/Ranges.kt","src/kotlin/collections/Collections.kt","src/kotlin/collections/Maps.kt","src/kotlin/collections/Sets.kt","src/kotlin/text/StringNumberConversions.kt","src/kotlin/time/Duration.kt","unsigned/src/kotlin/UnsignedUtils.kt","src/kotlin/collections/Iterables.kt","src/kotlin/collections/Sequences.kt","src/kotlin/util/Preconditions.kt","js/src/generated/_ArraysJs.kt","src/kotlin/comparisons/Comparisons.kt","src/kotlin/util/Standard.kt","js/src/generated/_ComparisonsJs.kt","unsigned/src/kotlin/ULong.kt","common/src/generated/_Collections.kt","js/src/kotlin/collections.kt","src/kotlin/collections/Iterators.kt","common/src/generated/_Comparisons.kt","common/src/generated/_Maps.kt","common/src/generated/_OneToManyTitlecaseMappings.kt","js/src/kotlin/text/char.kt","js/src/kotlin/text/string.kt","src/kotlin/text/Char.kt","src/kotlin/CharCode.kt","common/src/generated/_Sequences.kt","common/src/generated/_Sets.kt","common/src/generated/_Strings.kt","src/kotlin/text/Strings.kt","unsigned/src/kotlin/UByteArray.kt","unsigned/src/kotlin/UIntArray.kt","unsigned/src/kotlin/ULongArray.kt","unsigned/src/kotlin/UShortArray.kt","common/src/generated/_UArrays.kt","common/src/generated/_UCollections.kt","common/src/generated/_UComparisons.kt","common/src/generated/_URanges.kt","common/src/generated/_USequences.kt","common/src/kotlin/ExceptionsH.kt
```

","common/src/kotlin/JsAnnotationsH.kt","common/src/kotlin/ioH.kt","builtin-sources/Collections.kt","builtin-sources/Iterators.kt","builtin-sources/ProgressionIterators.kt","builtin-sources/Progressions.kt","builtin-sources/Range.kt","builtin-sources/Unit.kt","builtin-sources/annotation/Annotations.kt","builtin-sources/internal/InternalAnnotations.kt","builtin-sources/internal/progressionUtil.kt","src/kotlin/builtins.kt","src/kotlin/jsTypeOf.kt","src/kotlin/kotlin.kt","src/kotlin/charCode_js-v1.kt","src/kotlin/coroutines/CoroutineImpl.kt","src/kotlin/util/Result.kt","src/kotlin/coroutines/Continuation.kt","src/kotlin/coroutines/intrinsics/IntrinsicsJs.kt","src/kotlin/currentBeMisc.kt","src/kotlin/exceptions.kt","src/kotlin/jsOperators.kt","src/kotlin/math_js-v1.kt","src/kotlin/numbers_js-v1.kt","src/kotlin/reflection_js-v1.kt","src/kotlin/text/numberConversions_js-v1.kt","js/src/kotlin/js.arrays/fill.kt","js/src/kotlin/js.arrays/sort.kt","js/src/generated/_CharCategories.kt","js/src/generated/_CollectionsJs.kt","js/src/generated/_DigitChars.kt","js/src/generated/_LetterChars.kt","js/src/generated/_OtherLowercaseChars.kt","js/src/generated/_OtherUppercaseChars.kt","js/src/generated/_StringsJs.kt","js/src/generated/_TitlecaseMappings.kt","js/src/generated/_UArraysJs.kt","js/src/generated/_WhitespaceChars.kt","js/src/kotlin/Comparator.kt","js/src/kotlin/annotations.kt","js/src/kotlin/annotationsJVM.kt","js/src/kotlin/collections/AbstractMutableCollection.kt","js/src/kotlin/collections/AbstractMutableList.kt","js/src/kotlin/collections/AbstractMutableMap.kt","js/src/kotlin/collections/AbstractMutableSet.kt","js/src/kotlin/collections/ArrayList.kt","js/src/kotlin/collections/ArraySorting.kt","js/src/kotlin/collections/ArraysJs.kt","js/src/kotlin/collections/EqualityComparator.kt","js/src/kotlin/collections/HashMap.kt","js/src/kotlin/collections/HashSet.kt","js/src/kotlin/collections/InternalHashMap.kt","js/src/kotlin/collections/InternalMap.kt","js/src/kotlin/collections/InternalStringMap.kt","js/src/kotlin/collections/LinkedHashMap.kt","js/src/kotlin/collections/LinkedHashSet.kt","js/src/kotlin/concurrent.kt","js/src/kotlin/console.kt","js/src/kotlin/coroutines/SafeContinuationJs.kt","js/src/kotlin/coroutines/cancellation/CancellationException.kt","js/src/kotlin/coroutines/js/internal/EmptyContinuation.kt","js/src/kotlin/date.kt","js/src/kotlin/dom/Builders.kt","js/src/kotlin/dom/Classes.kt","js/src/kotlin/dom/Dom.kt","js/src/kotlin/dom/EventListener.kt","js/src/kotlin/dom/ItemArrayLike.kt","js/src/kotlin/dom/Mutations.kt","js/src/kotlin/dynamic.kt","js/src/kotlin/exceptionUtils.kt","js/src/kotlin/grouping.kt","src/kotlin/collections/Grouping.kt","js/src/kotlin/internalAnnotations.kt","js/src/kotlin/json.kt","js/src/kotlin/math.kt","js/src/kotlin/numbers.kt","js/src/kotlin/promise.kt","js/src/kotlin/random/PlatformRandom.kt","js/src/kotlin/reflect/AssociatedObjects.kt","js/src/kotlin/reflect/JsClass.kt","js/src/kotlin/reflect/KClassImpl.kt","js/src/kotlin/reflect/KClassesImpl.kt","js/src/kotlin/reflect/KTypeHelpers.kt","js/src/kotlin/reflect/KTypeImpl.kt","js/src/kotlin/reflect/KTypeParameterImpl.kt","js/src/kotlin/reflect/primitives.kt","js/src/kotlin/reflect/reflection.kt","js/src/kotlin/regex.kt","js/src/kotlin/sequence.kt","js/src/kotlin/text/CharCategoryJS.kt","js/src/kotlin/text/CharacterCodingExceptionJs.kt","js/src/kotlin/text/StringBuilderJs.kt","js/src/kotlin/text/numberConversions.kt","js/src/kotlin/text/regex.kt","src/kotlin/text/StringBuilder.kt","js/src/kotlin/text/stringsCode.kt","js/src/kotlin/text/utf8Encoding.kt","js/src/kotlin/throwableExtensions.kt","js/src/kotlin/time/DurationJs.kt","js/src/kotlin/time/DurationUnit.kt","js/src/kotlin/time/MonoTimeSource.kt","js/src/kotlinx/dom/Builders.kt","js/src/kotlinx/dom/Classes.kt","src/kotlin/text/regex/RegexExtensions.kt","js/src/kotlinx/dom/Dom.kt","js/src/kotlinx/dom/Mutations.kt","js/src/org.w3c/deprecated.kt","js/src/org.w3c/org.khronos.webgl.kt","js/src/org.w3c/org.w3c.dom.clipboard.kt","js/src/org.w3c/org.w3c.dom.css.kt","js/src/org.w3c/org.w3c.dom.encryptedmedia.kt","js/src/org.w3c/org.w3c.dom.events.kt","js/src/org.w3c/org.w3c.dom.kt","js/src/org.w3c/org.w3c.fetch.kt","js/src/org.w3c/org.w3c.dom.mediacapture.kt","js/src/org.w3c/org.w3c.dom.media.source.kt","js/src/org.w3c/org.w3c.dom.pointerevents.kt","js/src/org.w3c/org.w3c.dom.svg.kt","js/src/org.w3c/org.w3c.files.kt","js/src/org.w3c/org.w3c.notifications.kt","js/src/org.w3c/org.w3c.workers.kt","js/src/org.w3c/org.w3c.xhr.kt","src/kotlin/annotations/Experimental.kt","src/kotlin/annotations/ExperimentalStdlibApi.kt","src/kotlin/annotations/Inference.kt","src/kotlin/annotations/Multiplatform.kt","src/kotlin/annotations/OptIn.kt","src/kotlin/collections/AbstractCollection.kt","src/kotlin/collections/AbstractIterator.kt","src/kotlin/collections/AbstractList.kt","src/kotlin/collections/AbstractMap.kt","src/kotlin/collections/AbstractSet.kt","src/kotlin/collections/ArrayDeque.kt","src/kotlin/collections/Arrays.kt","src/kotlin/collections/BrittleContainsOptimization.kt","src/kotlin/collections/IndexedValue.kt","src/kotlin/collections/MapAccessors.kt","src/kotlin/collections/MapWithDefault.kt","src/kotlin/collections/MutableCollections.kt","src/kotlin/collections/ReversedViews.kt","src/kotlin/collections/SequenceBuilder.kt","src/kotlin

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/collections/SlidingWindow.kt","src/kotlin/collections/UArraySorting.kt","src/kotlin/comparisons/compareTo.kt","s
rc/kotlin/contracts/ContractBuilder.kt","src/kotlin/coroutines/ContinuationInterceptor.kt","src/kotlin/coroutines/Coro
outineContext.kt","src/kotlin/coroutines/CoroutineContextImpl.kt","src/kotlin/coroutines/intrinsics/Intrinsics.kt","src/
kotlin/experimental/bitwiseOperations.kt","src/kotlin/experimental/inferenceMarker.kt","src/kotlin/internal/Annotati
ons.kt","src/kotlin/properties/Delegates.kt","src/kotlin/properties/Interfaces.kt","src/kotlin/properties/ObservablePro
perty.kt","src/kotlin/properties/PropertyReferenceDelegates.kt","src/kotlin/random/Random.kt","src/kotlin/random/
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kotlin/util/Lateinit.kt","src/kotlin/util/Lazy.kt","src/kotlin/util/Numbers.kt","src/kotlin/util/Suspend.kt","src/kotlin/ut
il/Tuples.kt","unsigned/src/kotlin/UIntRange.kt","unsigned/src/kotlin/ULongRange.kt","unsigned/src/kotlin/UMath.
kt","unsigned/src/kotlin/UNumbers.kt","unsigned/src/kotlin/UProgressionUtil.kt","unsigned/src/kotlin/UStrings.kt",
"unsigned/src/kotlin/annotations/Unsigned.kt","common/src/kotlin/MathH.kt","js/src/kotlin/js/js.math.kt"],"sources
Content":["(function
(root, factory) {\n  if (typeof define === 'function' && define.amd) {\n    define('kotlin', ['exports'], factory);\n
  }\n  else if (typeof exports === 'object') {\n    factory(module.exports);\n  }\n  else {\n    root.kotlin = {};\n
    factory(root.kotlin);\n  }\n}(this, function (Kotlin) {\n  var _ = Kotlin;\n\n  insertContent();\n});\n","/*\n *
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is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\nKotlin.isArray = function (a) {\n  return (Array.isArray(a) || a instanceof Int8Array) && a.$type$
=== \"BooleanArray\"\n};\n\nKotlin.isByteArray = function (a) {\n  return a instanceof Int8Array && a.$type$
!=\"BooleanArray\"\n};\n\nKotlin.isShortArray = function (a) {\n
  return a instanceof Int16Array\n};\n\nKotlin.isCharArray = function (a) {\n  return a instanceof Uint16Array &&
a.$type$ === \"CharArray\"\n};\n\nKotlin.isIntArray = function (a) {\n  return a instanceof
Int32Array\n};\n\nKotlin.isFloatArray = function (a) {\n  return a instanceof
Float32Array\n};\n\nKotlin.isDoubleArray = function (a) {\n  return a instanceof
Float64Array\n};\n\nKotlin.isLongArray = function (a) {\n  return Array.isArray(a) && a.$type$ ===
\"LongArray\"\n};\n\nKotlin.isArray = function (a) {\n  return Array.isArray(a) &&
!a.$type$;\n};\n\nKotlin.isArrayish = function (a) {\n  return Array.isArray(a) ||
ArrayBuffer.isView(a)\n};\n\nKotlin.arrayToString = function (a) {\n  if (a === null) return \"null\"\n  var
toString = Kotlin.isCharArray(a) ? String.fromCharCode : Kotlin.toString;\n  return "[" +
Array.prototype.map.call(a, function(e) { return toString(e); }).join(", ") + "]";\n};\n\nKotlin.arrayDeepToString
= function (arr) {\n  return
Kotlin.kotlin.collections.contentDeepToStringImpl(arr);\n};\n\nKotlin.arrayEquals = function (a, b) {\n  if (a ===
b) {\n    return true;\n  }\n  if (a === null || b === null || !Kotlin.isArrayish(b) || a.length !== b.length) {\n
return false;\n  }\n  for (var i = 0, n = a.length; i < n; i++) {\n    if (!Kotlin.equals(a[i], b[i])) {\n      return
false;\n    }\n  }\n  return true;\n};\n\nKotlin.arrayDeepEquals = function (a, b) {\n  return
Kotlin.kotlin.collections.contentDeepEqualsImpl(a, b);\n};\n\nKotlin.arrayHashCode = function (arr) {\n  if (arr
=== null) return 0\n  var result = 1;\n  for (var i = 0, n = arr.length; i < n; i++) {\n    result = ((31 * result | 0) +
Kotlin.hashCode(arr[i])) | 0;\n  }\n  return result;\n};\n\nKotlin.arrayDeepHashCode = function (arr) {\n  return
Kotlin.kotlin.collections.contentDeepHashCodeImpl(arr);\n};\n\nKotlin.primitiveArraySort = function (array) {\n
array.sort(Kotlin.doubleCompareTo)\n};\n"},"/*\n
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code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\nKotlin.getCallableRef = function(name, f) {\n  f.callableName = name;\n  return

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f;\n};\n\nKotlin.getPropertyCallableRef = function(name, paramCount, getter, setter) {\n  getter.get = getter;\n  getter.set = setter;\n  getter.callableName = name;\n  return getPropertyRefClass(getter, setter,\n  propertyRefClassMetadataCache[paramCount]);\n};\n\nfunction getPropertyRefClass(obj, setter, cache) {\n  obj.$metadata$ = getPropertyRefMetadata(typeof setter === \"function\" ? cache.mutable : cache.immutable);\n  obj.constructor = obj;\n  return obj;\n}\n\nvar propertyRefClassMetadataCache = [\n  {\n    mutable: { value:\n    null, implementedInterface: function () {\n      return Kotlin.kotlin.reflect.KMutableProperty0 }\n    },\n    immutable:\n    {\n      value: null, implementedInterface: function () {\n        return Kotlin.kotlin.reflect.KProperty0 }\n      },\n      mutable: { value: null, implementedInterface: function () {\n        return\n        Kotlin.kotlin.reflect.KMutableProperty1 }\n      },\n      immutable: { value: null, implementedInterface: function\n        () {\n          return Kotlin.kotlin.reflect.KProperty1 }\n        }\n      }\n    };\n\nfunction getPropertyRefMetadata(cache)\n{\n  if (cache.value === null) {\n    cache.value = {\n      interfaces: [cache.implementedInterface()],\n      baseClass: null,\n      functions: {},\n      properties: {},\n      types: {},\n      staticMembers: {}\n    };\n  }\n  return cache.value;\n}\n\n\"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming\n  Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the\n  license/LICENSE.txt file.\n */\n\nKotlin.toShort\n  = function (a) {\n    return (a & 0xFFFF) << 16 >> 16;\n  };\n\nKotlin.toByte = function (a) {\n    return (a & 0xFF)\n    << 24 >> 24;\n  };\n\nKotlin.toChar = function (a) {\n    return a & 0xFFFF;\n  };\n\nKotlin.numberToLong = function\n  (a) {\n    return a instanceof Kotlin.Long ? a : Kotlin.Long.fromNumber(a);\n  };\n\nKotlin.numberToInt = function\n  (a) {\n    return a instanceof Kotlin.Long ? a.toInt() : Kotlin.doubleToInt(a);\n  };\n\nKotlin.numberToShort =\n  function (a) {\n    return Kotlin.toShort(Kotlin.numberToInt(a));\n  };\n\nKotlin.numberToByte = function (a) {\n    return Kotlin.toByte(Kotlin.numberToInt(a));\n  };\n\nKotlin.numberToDouble = function (a) {\n    return\n    +a;\n  };\n\nKotlin.numberToChar = function (a) {\n    return\n    Kotlin.toChar(Kotlin.numberToInt(a));\n  };\n\nKotlin.doubleToInt = function(a) {\n  if (a > 2147483647) return\n  2147483647;\n  if (a < -2147483648) return -2147483648;\n  return a | 0;\n};\n\nKotlin.toBoxedChar = function\n  (a) {\n  if (a == null) return a;\n  if (a instanceof Kotlin.BoxedChar) return a;\n  return new Kotlin.BoxedChar(a);\n};\n\nKotlin.unboxChar =\n  function(a) {\n  if (a == null) return a;\n  return Kotlin.toChar(a);\n};\n\n\"/*\n * Copyright 2010-2018 JetBrains\n  s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0\n  license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.equals = function (obj1, obj2) {\n  if (obj1\n  == null) {\n    return obj2 == null;\n  }\n  if (obj2 == null) {\n    return false;\n  }\n  if (obj1 !== obj1)\n  {\n    return obj2 !== obj2;\n  }\n  if (typeof obj1 === \"object\" && typeof obj1.equals === \"function\") {\n    return obj1.equals(obj2);\n  }\n  if (typeof obj1 === \"number\" && typeof obj2 === \"number\") {\n    return obj1 === obj2 && (obj1 !== 0 || 1 / obj1 === 1 / obj2);\n  }\n  return obj1 ===\n  obj2;\n};\n\nKotlin.hashCode = function (obj) {\n  if (obj == null)\n  {\n    return 0;\n  }\n  var objType = typeof obj;\n  if (\"object\" === objType) {\n    return \"function\" ===\n    typeof obj.hashCode ? obj.hashCode() : getObjectHashCode(obj);\n  }\n  if (\"function\" === objType) {\n    return\n    getObjectHashCode(obj);\n  }\n  if (\"number\" === objType) {\n    return\n    Kotlin.numberHashCode(obj);\n  }\n  if (\"boolean\" === objType) {\n    return Number(obj)\n  }\n  var str\n  = String(obj);\n  return getStringHashCode(str);\n};\n\nKotlin.toString = function (o) {\n  if (o == null) {\n    return\n    \"null\";\n  }\n  else if (Kotlin.isArrayish(o)) {\n    return\n    \"[...].\";\n  }\n  else {\n    return\n    o.toString();\n  }\n};\n\n/** @const */\nvar POW_2_32 = 4294967296;\n// TODO: consider switching to Symbol\n  type once we are on ES6.\n\n/** @const */\nvar OBJECT_HASH_CODE_PROPERTY_NAME =\n  \"kotlinHashCodeValue\";\n\nfunction getObjectHashCode(obj) {\n  if\n  (!(OBJECT_HASH_CODE_PROPERTY_NAME in obj))\n  {\n    var hash = (Math.random() * POW_2_32) | 0; // Make 32-bit signed integer.\n    Object.defineProperty(obj, OBJECT_HASH_CODE_PROPERTY_NAME, { value: hash, enumerable: false });\n  }\n  return obj[OBJECT_HASH_CODE_PROPERTY_NAME];\n}\n\nfunction getStringHashCode(str) {\n  var

```



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@return {!Kotlin.Long} The corresponding Long value.\n *
Kotlin.Long.fromString = function(str, opt_radix) {\n
if (str.length == 0) {\n  throw Error('number format error: empty string');\n }
var radix = opt_radix || 10;\n
if (radix < 2 || 36 < radix) {\n  throw Error('radix out of range: ' + radix);\n }
if (str.charAt(0) == '-') {\n  return
Kotlin.Long.fromString(str.substring(1), radix).negate();\n }
else if (str.indexOf('-') >= 0) {\n  throw Error('number
format error: interior "-" character: ' + str);\n }
// Do several (8) digits each time through the loop, so as to
// minimize the calls to the very expensive emulated div.\n
var radixToPower =
Kotlin.Long.fromNumber(Math.pow(radix, 8));\n
var result
= Kotlin.Long.ZERO;\n
for (var i = 0; i < str.length; i += 8) {\n  var size = Math.min(8, str.length - i);\n
var value = parseInt(str.substring(i, i + size), radix);\n
if (size < 8) {\n  var power =
Kotlin.Long.fromNumber(Math.pow(radix, size));\n
result =
result.multiply(power).add(Kotlin.Long.fromNumber(value));\n
} else {\n  result =
result.multiply(radixToPower);\n
result = result.add(Kotlin.Long.fromNumber(value));\n
}\n
}\n
return
result;\n
};\n
// NOTE: the compiler should inline these constant values below and then remove
// these
variables, so there should be no runtime penalty for these.\n
// **\n
* Number used repeated below in calculations.
This must appear before the
* first call to any from* function below.\n
* @type {number}\n
* @private\n
*\n
Kotlin.Long.TWO_PWR_16_DBL_ = 1 << 16;\n
*\n
Kotlin.Long.TWO_PWR_24_DBL_ = 1 << 24;\n
*\n
Kotlin.Long.TWO_PWR_32_DBL_
=\n
Kotlin.Long.TWO_PWR_16_DBL_ * Kotlin.Long.TWO_PWR_16_DBL_;\n
*\n
Kotlin.Long.TWO_PWR_31_DBL_ =\n
Kotlin.Long.TWO_PWR_32_DBL_ / 2;\n
*\n
Kotlin.Long.TWO_PWR_48_DBL_ =\n
Kotlin.Long.TWO_PWR_32_DBL_
* Kotlin.Long.TWO_PWR_16_DBL_;\n
*\n
Kotlin.Long.TWO_PWR_64_DBL_ =\n
Kotlin.Long.TWO_PWR_32_DBL_ *
Kotlin.Long.TWO_PWR_32_DBL_;\n
*\n
Kotlin.Long.TWO_PWR_63_DBL_ =\n
Kotlin.Long.TWO_PWR_64_DBL_ / 2;\n
*\n
{!Kotlin.Long} *\n
Kotlin.Long.ZERO = Kotlin.Long.fromInt(0);\n
*\n
Kotlin.Long.ONE = Kotlin.Long.fromInt(1);\n
*\n
Kotlin.Long.NEG_ONE =
Kotlin.Long.fromInt(-1);\n
*\n
Kotlin.Long.MAX_VALUE =\n
Kotlin.Long.fromBits(0xFFFFFFFF | 0, 0x7FFFFFFF | 0);\n
*\n
Kotlin.Long.MIN_VALUE = Kotlin.Long.fromBits(0,
0x80000000 | 0);\n
*\n
Kotlin.Long.TWO_PWR_24_ =
Kotlin.Long.fromInt(1 << 24);\n
*\n
return {number} The value, assuming it is a 32-bit integer.
*\n
Kotlin.Long.prototype.toInt = function() {\n
return this.low_;\n
};\n
*\n
Kotlin.Long.prototype.toNumber = function() {\n
return this.high_ *
Kotlin.Long.TWO_PWR_32_DBL_ +\n
this.getLowBitsUnsigned();\n
};\n
*\n
Kotlin.Long.prototype.hashCode = function() {\n
return this.high_ ^
this.low_;\n
};\n
*\n
@param {number=} opt_radix The radix in which the text should be written.\n
*\n
return
{string} The textual representation of this value.\n
*\n
@override\n
Kotlin.Long.prototype.toString =
function(opt_radix) {\n
var radix = opt_radix || 10;\n
if (radix < 2 || 36 < radix) {\n  throw Error('radix out of
range: ' + radix);\n
}\n
if (this.isZero()) {\n  return '0';\n
}\n
if (this.isNegative()) {\n  if
(this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n  // We need to change the Long value before it can be negated,
so we remove
// the bottom-most digit in this base and then recurse to do the rest.\n
var radixLong =
Kotlin.Long.fromNumber(radix);\n
var div = this.div(radixLong);\n
var rem =
div.multiply(radixLong).subtract(this);\n
return div.toString(radix) + rem.toInt().toString(radix);\n
} else {\n
return '-' + this.negate().toString(radix);\n
}\n
}\n
// Do several (5) digits each time through the loop, so as to
// minimize the calls to the very expensive emulated div.\n
var radixToPower =
Kotlin.Long.fromNumber(Math.pow(radix, 5));\n
var rem = this;\n
var result = '';\n
while (true) {\n
var

```



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16;\n c32 &= 0xFFFF;\n c48 += a48 + b48;\n c48 &= 0xFFFF;\n return Kotlin.Long.fromBits((c16
<< 16) | c00, (c48 << 16) | c32);\n};\n\n\n/**\n * Returns the difference of this and the given Long.\n * @param
{Kotlin.Long} other Long to subtract from this.\n * @return {!Kotlin.Long} The difference of this and the given
Long.\n */\nKotlin.Long.prototype.subtract = function(other) {\n return this.add(other.negate());\n};\n\n\n/**\n *
Returns the product of this and the given long.\n * @param {Kotlin.Long} other Long to multiply with this.\n *
@return {!Kotlin.Long} The product of this and the other.\n */\nKotlin.Long.prototype.multiply = function(other)
{\n if (this.isZero()) {\n return Kotlin.Long.ZERO;\n } else if (other.isZero()) {\n return Kotlin.Long.ZERO;\n
}\n\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return other.isOdd() ? Kotlin.Long.MIN_VALUE :
Kotlin.Long.ZERO;\n } else if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return this.isOdd() ?
Kotlin.Long.MIN_VALUE : Kotlin.Long.ZERO;\n }\n\n if (this.isNegative()) {\n if (other.isNegative())
{\n return this.negate().multiply(other.negate());\n } else {\n return this.negate().multiply(other).negate();\n
}\n } else if (other.isNegative()) {\n return this.multiply(other.negate()).negate();\n }\n\n // If both longs are
small, use float multiplication\n if (this.lessThan(Kotlin.Long.TWO_PWR_24_) &&\n
other.lessThan(Kotlin.Long.TWO_PWR_24_)) {\n return Kotlin.Long.fromNumber(this.toNumber() *
other.toNumber());\n }\n\n // Divide each long into 4 chunks of 16 bits, and then add up 4x4 products.\n // We can
skip products that would overflow.\n\n var a48 = this.high_ >>> 16;\n var a32 = this.high_ & 0xFFFF;\n var a16 =
this.low_ >>> 16;\n var a00 = this.low_ & 0xFFFF;\n\n var b48 = other.high_ >>> 16;\n var b32 = other.high_ &
0xFFFF;\n var b16 = other.low_ >>> 16;\n var b00 = other.low_ & 0xFFFF;\n\n var c48 = 0, c32 = 0, c16 = 0, c00
= 0;\n c00 += a00 * b00;\n c16 += c00 >>> 16;\n c00 &= 0xFFFF;\n c16 += a16 * b00;\n c32 +=
c16 >>> 16;\n c16 &= 0xFFFF;\n c16 += a00 * b16;\n c32 += c16 >>> 16;\n c16 &= 0xFFFF;\n c32 += a32 *
b00;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n c32 += a16 * b16;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n
c32 += a00 * b32;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n c48 += a48 * b00 + a32 * b16 + a16 * b32 + a00 *
b48;\n c48 &= 0xFFFF;\n return Kotlin.Long.fromBits((c16 << 16) | c00, (c48 << 16) | c32);\n};\n\n\n\n/**\n *
Returns this Long divided by the given one.\n * @param {Kotlin.Long} other Long by which to divide.\n * @return
{!Kotlin.Long} This Long divided by the given one.\n */\nKotlin.Long.prototype.div = function(other) {\n if
(other.isZero()) {\n throw Error('division by zero');\n } else if (this.isZero()) {\n return Kotlin.Long.ZERO;\n
}\n\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n if (other.equalsLong(Kotlin.Long.ONE) ||\n
other.equalsLong(Kotlin.Long.NEG_ONE)) {\n return Kotlin.Long.MIN_VALUE; // recall that -MIN_VALUE
== MIN_VALUE\n } else if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return Kotlin.Long.ONE;\n } else {\n // At
this point, we have |other| >= 2, so |this/other| < |MIN_VALUE|.\n var halfThis = this.shiftRight(1);\n var
approx = halfThis.div(other).shiftLeft(1);\n if (approx.equalsLong(Kotlin.Long.ZERO)) {\n return
other.isNegative() ? Kotlin.Long.ONE : Kotlin.Long.NEG_ONE;\n } else {\n var rem =
this.subtract(other.multiply(approx));\n var result = approx.add(rem.div(other));\n return result;\n }\n
}\n } else if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return Kotlin.Long.ZERO;\n }\n\n if
(this.isNegative()) {\n if (other.isNegative()) {\n return this.negate().div(other.negate());\n } else {\n return
this.negate().div(other).negate();\n }\n } else if (other.isNegative()) {\n return
this.div(other.negate()).negate();\n }\n\n // Repeat the following until the remainder is less than other:\n
find a\n // floating-point that approximates remainder / other *from below*, add this\n // into the result, and
subtract it from the remainder. It is critical that\n // the approximate value is less than or equal to the real value so
that the\n // remainder never becomes negative.\n var res = Kotlin.Long.ZERO;\n var rem = this;\n while
(rem.greaterThanOrEqual(other)) {\n // Approximate the result of division. This may be a little greater or\n //
smaller than the actual value.\n var approx = Math.max(1, Math.floor(rem.toNumber() / other.toNumber()));\n\n
// We will tweak the approximate result by changing it in the 48-th digit or\n // the smallest non-fractional digit,
whichever is larger.\n var log2 = Math.ceil(Math.log(approx) / Math.LN2);\n var delta = (log2 <= 48) ? 1 :
Math.pow(2, log2 - 48);\n\n // Decrease the approximation until it is smaller than the remainder. Note\n // that if
it is too large, the product overflows and is negative.\n

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var approxRes = Kotlin.Long.fromNumber(approx);\n  var approxRem = approxRes.multiply(other);\n  while
(approxRem.isNegative() || approxRem.greaterThan(rem)) {\n  approx -= delta;\n  approxRes =
Kotlin.Long.fromNumber(approx);\n  approxRem = approxRes.multiply(other);\n  }\n\n  // We know the
answer can't be zero... and actually, zero would cause\n  // infinite recursion since we would make no progress.\nif (approxRes.isZero()) {\n  approxRes = Kotlin.Long.ONE;\n  }\n\n  res = res.add(approxRes);\n  rem =
rem.subtract(approxRem);\n  }\n  return res;\n};\n\n/**\n * Returns this Long modulo the given one.\n * @param
{Kotlin.Long} other Long by which to mod.\n * @return {!Kotlin.Long} This Long modulo the given one.\n
*/\nKotlin.Long.prototype.modulo = function(other) {\n  return
this.subtract(this.div(other).multiply(other));\n};\n\n/**\n * @return {!Kotlin.Long} The bitwise-NOT of this value.
*/\nKotlin.Long.prototype.not = function() {\n  return Kotlin.Long.fromBits(~this.low_
,
~this.high_);\n};\n\n/**\n * Returns the bitwise-AND of this Long and the given one.\n * @param {Kotlin.Long}
other The Long with which to AND.\n * @return {!Kotlin.Long} The bitwise-AND of this and the other.\n
*/\nKotlin.Long.prototype.and = function(other) {\n  return Kotlin.Long.fromBits(this.low_ & other.low_
,\n
this.high_ & other.high_);\n};\n\n/**\n * Returns the bitwise-OR of this Long and the given one.\n *
@param {Kotlin.Long} other The Long with which to OR.\n * @return {!Kotlin.Long} The bitwise-OR of this and
the other.\n */\nKotlin.Long.prototype.or = function(other) {\n  return Kotlin.Long.fromBits(this.low_ |
other.low_
,\n
this.high_ | other.high_);\n};\n\n/**\n * Returns the bitwise-XOR of this Long
and the given one.\n * @param {Kotlin.Long} other The Long with which to XOR.\n * @return {!Kotlin.Long}
The bitwise-XOR of this and the other.\n */\nKotlin.Long.prototype.xor
= function(other) {\n  return Kotlin.Long.fromBits(this.low_ ^ other.low_
,\n
this.high_ ^
other.high_);\n};\n\n/**\n * Returns this Long with bits shifted to the left by the given amount.\n * @param
{number} numBits The number of bits by which to shift.\n * @return {!Kotlin.Long} This shifted to the left by the
given amount.\n */\nKotlin.Long.prototype.shiftLeft = function(numBits) {\n  numBits &= 63;\n  if (numBits == 0)
{\n  return this;\n  } else {\n  var low = this.low_;\n  if (numBits < 32) {\n  var high = this.high_;\n  return
Kotlin.Long.fromBits(\n    low << numBits,\n    (high << numBits) | (low >>> (32 - numBits));\n  } else
{\n  return Kotlin.Long.fromBits(0, low << (numBits - 32));\n  }\n  }\n};\n\n/**\n * Returns this Long with
bits shifted to the right by the given amount.\n * @param {number} numBits The number of bits by which to shift.\n
* @return {!Kotlin.Long} This shifted to the right by the given
amount.\n */\nKotlin.Long.prototype.shiftRight = function(numBits) {\n  numBits &= 63;\n  if (numBits == 0) {\n
return this;\n  } else {\n  var high = this.high_;\n  if (numBits < 32) {\n  var low = this.low_;\n  return
Kotlin.Long.fromBits(\n    (low >>> numBits) | (high << (32 - numBits)),\n    high >> numBits);\n  } else
{\n  return Kotlin.Long.fromBits(\n    high >> (numBits - 32),\n    high >= 0 ? 0 : -1);\n  }\n  }\n};\n\n/**\n * Returns this Long with bits shifted to the right by the given amount, with\n * zeros placed into the
new leading bits.\n * @param {number} numBits The number of bits by which to shift.\n * @return {!Kotlin.Long}
This shifted to the right by the given amount, with\n * zeros placed into the new leading bits.\n
*/\nKotlin.Long.prototype.shiftRightUnsigned = function(numBits) {\n  numBits &= 63;\n  if (numBits == 0) {\n
return this;\n  } else {\n  var high = this.high_;\n  if (numBits < 32) {\n
var low = this.low_;\n  return Kotlin.Long.fromBits(\n    (low >>> numBits) | (high << (32 - numBits)),\n
high >>> numBits);\n  } else if (numBits == 32) {\n  return Kotlin.Long.fromBits(high, 0);\n  } else {\n
return Kotlin.Long.fromBits(high >>> (numBits - 32), 0);\n  }\n  }\n};\n\n// Support for
Kotlin\nKotlin.Long.prototype.equals = function (other) {\n  return other instanceof Kotlin.Long &&
this.equalsLong(other);\n};\n\nKotlin.Long.prototype.compareTo_11rb$ =
Kotlin.Long.prototype.compare;\n\nKotlin.Long.prototype.inc = function() {\n  return
this.add(Kotlin.Long.ONE);\n};\n\nKotlin.Long.prototype.dec = function() {\n  return
this.add(Kotlin.Long.NEG_ONE);\n};\n\nKotlin.Long.prototype.valueOf = function() {\n  return
this.toNumber();\n};\n\nKotlin.Long.prototype.unaryPlus = function() {\n  return
this;\n};\n\nKotlin.Long.prototype.unaryMinus = Kotlin.Long.prototype.negate;\nKotlin.Long.prototype.inv =
Kotlin.Long.prototype.not;\nKotlin.Long.prototype.rangeTo

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= function (other) {\n  return new Kotlin.kotlin.ranges.LongRange(this, other);\n};"/**\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.defineModule = function (id, declaration)
{\n};\n\nKotlin.defineInlineFunction = function(tag, fun) {\n  return fun;\n};\n\nKotlin.wrapFunction =
function(fun) {\n  var f = function() {\n    f = fun();\n    return f.apply(this, arguments);\n  };\n  return
function() {\n    return f.apply(this, arguments);\n  };\n};\n\nKotlin.isTypeOf = function(type) {\n  return
function (object) {\n    return typeof object === type;\n  };\n};\n\nKotlin.isInstanceOf = function (klass) {\n
return function (object) {\n    return Kotlin.isType(object, klass);\n  };\n};\n\nKotlin.orNull
= function (fn) {\n  return function (object) {\n    return object == null || fn(object);\n
}};\n};\n\nKotlin.andPredicate = function (a, b) {\n  return function (object) {\n    return a(object) && b(object);\n
}};\n};\n\nKotlin.kotlinModuleMetadata = function (abiVersion, moduleName, data) {\n};\n\nKotlin.suspendCall =
function(value) {\n  return value;\n};\n\nKotlin.coroutineResult = function(qualifier) {\n
throwMarkerError();\n};\n\nKotlin.coroutineController = function(qualifier) {\n
throwMarkerError();\n};\n\nKotlin.coroutineReceiver = function(qualifier) {\n
throwMarkerError();\n};\n\nKotlin.setCoroutineResult = function(value, qualifier) {\n
throwMarkerError();\n};\n\nKotlin.getReifiedTypeParameterKType = function(typeParameter) {\n
throwMarkerError();\n};\n\nfunction throwMarkerError() {\n  throw new Error(\n    \"This marker function
should never be called. \" +\n    \"Looks like compiler did not eliminate it properly.
\\n \" +\n    \"Please, report an issue if you caught this exception.\");\n};\n\nKotlin.getFunctionById = function(id,
defaultValue) {\n  return function() {\n    return defaultValue;\n  };\n};"/**\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.compareTo = function (a, b) {\n  var
typeA = typeof a;\n  if (typeA === \"number\") {\n    if (typeof b === \"number\") {\n      return
Kotlin.doubleCompareTo(a, b);\n    }\n    return Kotlin.primitiveCompareTo(a, b);\n  }\n  if (typeA ===
\"string\" || typeA === \"boolean\") {\n    return Kotlin.primitiveCompareTo(a, b);\n  }\n  return
a.compareTo_11rb$(b);\n};\n\nKotlin.primitiveCompareTo = function (a, b) {\n  return a < b ? -1 : a > b ? 1 :
0;\n};\n\nKotlin.doubleCompareTo = function (a, b) {\n  if (a < b) return -1;\n  if (a
> b) return 1;\n\n  if (a === b) {\n    if (a !== 0) return 0;\n\n    var ia = 1 / a;\n    return ia === 1 / b ? 0 : (ia
< 0 ? -1 : 1);\n  }\n  return a !== a ? (b !== b ? 0 : 1) : -1;\n};\n\nKotlin.charInc = function (value) {\n  return
Kotlin.toChar(value+1);\n};\n\nKotlin.charDec = function (value) {\n  return Kotlin.toChar(value-
1);\n};\n\nKotlin.imul = Math.imul || imul;\n\nKotlin.imulEmulated = imul;\n\nfunction imul(a, b) {\n  return ((a &
0xffff0000) * (b & 0xffff) + (a & 0xffff) * (b | 0)) | 0;\n};\n\n(function() {\n  var buf = new ArrayBuffer(8);\n  var
bufFloat64 = new Float64Array(buf);\n  var bufFloat32 = new Float32Array(buf);\n  var bufInt32 = new
Int32Array(buf);\n  var lowIndex = 0;\n  var highIndex = 1;\n\n  bufFloat64[0] = -1; // bff00000_00000000\n  if
(bufInt32[lowIndex] !== 0) {\n    lowIndex = 1;\n    highIndex = 0;\n  }\n\n  Kotlin.doubleToBits =
function(value) {\n    return Kotlin.doubleToRawBits(isNaN(value)
? NaN : value);\n  };\n\n  Kotlin.doubleToRawBits = function(value) {\n    bufFloat64[0] = value;\n    return
Kotlin.Long.fromBits(bufInt32[lowIndex], bufInt32[highIndex]);\n  };\n\n  Kotlin.doubleFromBits =
function(value) {\n    bufInt32[lowIndex] = value.low_;\n    bufInt32[highIndex] = value.high_;\n    return
bufFloat64[0];\n  };\n\n  Kotlin.floatToBits = function(value) {\n    return Kotlin.floatToRawBits(isNaN(value)
? NaN : value);\n  };\n\n  Kotlin.floatToRawBits = function(value) {\n    bufFloat32[0] = value;\n    return
bufInt32[0];\n  };\n\n  Kotlin.floatFromBits = function(value) {\n    bufInt32[0] = value;\n    return
bufFloat32[0];\n  };\n\n  // returns zero value for number with positive sign bit and non-zero value for number
with negative sign bit.\n  Kotlin.doubleSignBit = function(value) {\n    bufFloat64[0] = value;\n    return
bufInt32[highIndex] & 0x80000000;\n  };\n\n  Kotlin.numberHashCode
= function(obj) {\n    if ((obj | 0) === obj) {\n      return obj | 0;\n    }\n    else {\n      bufFloat64[0] =
obj;\n      return (bufInt32[highIndex] * 31 | 0) + bufInt32[lowIndex] | 0;\n    }\n  }\n};

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})\n\nKotlin.ensureNotNull = function(x) {\n  return x != null ? x : Kotlin.throwNPE();\n};\n"/\n *
Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\nif (typeof
String.prototype.startsWith === \"undefined\") {\n  Object.defineProperty(String.prototype, \"startsWith\", {\n
value: function (searchString, position) {\n    position = position || 0;\n    return
this.lastIndexOf(searchString, position) === position;\n  }\n });\n}\n\nif (typeof String.prototype.endsWith ===
\"undefined\") {\n  Object.defineProperty(String.prototype, \"endsWith\", {\n
value: function (searchString, position) {\n    var subjectString = this.toString();\n    if (position ===
undefined || position > subjectString.length) {\n      position = subjectString.length;\n    }\n
position -= searchString.length;\n    var lastIndex = subjectString.indexOf(searchString, position);\n
return lastIndex !== -1 && lastIndex === position;\n  }\n });\n}\n\n// ES6 Math polyfills\n\nif (typeof Math.sign
=== \"undefined\") {\n  Math.sign = function(x) {\n    x = +x; // convert to a number\n    if (x === 0 ||
isNaN(x)) {\n      return Number(x);\n    }\n    return x > 0 ? 1 : -1;\n  };\n}\n\nif (typeof Math.trunc ===
\"undefined\") {\n  Math.trunc = function(x) {\n    if (isNaN(x)) {\n      return NaN;\n    }\n    if (x > 0)
{\n      return Math.floor(x);\n    }\n    return Math.ceil(x);\n  };\n}\n\n(function() {\n  var epsilon =
2.220446049250313E-16;\n
var taylor_2_bound = Math.sqrt(epsilon);\n  var taylor_n_bound = Math.sqrt(taylor_2_bound);\n  var
upper_taylor_2_bound = 1/taylor_2_bound;\n  var upper_taylor_n_bound = 1/taylor_n_bound;\n\n  if (typeof
Math.sinh === \"undefined\") {\n    Math.sinh = function(x) {\n      if (Math.abs(x) < taylor_n_bound) {\n
var result = x;\n      if (Math.abs(x) > taylor_2_bound) {\n        result += (x * x * x) / 6;\n
}\n      return result;\n    } else {\n      var y = Math.exp(x);\n      var y1 = 1 / y;\n      if
(!isFinite(y)) return Math.exp(x - Math.LN2);\n      if (!isFinite(y1)) return -Math.exp(-x - Math.LN2);\n
return (y - y1) / 2;\n    }\n  };\n}\n\n  if (typeof Math.cosh === \"undefined\") {\n    Math.cosh =
function(x) {\n      var y = Math.exp(x);\n      var y1 = 1 / y;\n      if (isFinite(y)
|| isFinite(y1)) return Math.exp(Math.abs(x) - Math.LN2);\n      return (y + y1) / 2;\n    }\n  };\n}\n\n  if
(typeof Math.tanh === \"undefined\") {\n    Math.tanh = function(x) {\n      if (Math.abs(x) < taylor_n_bound)
{\n        var result = x;\n        if (Math.abs(x) > taylor_2_bound) {\n          result -= (x * x * x) / 3;\n
}\n        return result;\n      }\n      else {\n        var a = Math.exp(+x), b = Math.exp(-x);\n
return a === Infinity ? 1 : b === Infinity ? -1 : (a - b) / (a + b);\n      }\n    };\n  }\n\n  // Inverse
hyperbolic function implementations derived from boost special math functions.\n  // Copyright Eric Ford &
Hubert Holin 2001.\n\n  if (typeof Math.asinh === \"undefined\") {\n    var asinh = function(x) {\n      if (x
>= +taylor_n_bound)\n        {\n          if (x > upper_taylor_n_bound)\n            {\n
if (x > upper_taylor_2_bound)\n              {\n                // approximation by laurent series in 1/x
at 0+ order from -1 to 0\n                return Math.log(x) + Math.LN2;\n              }\n            }
else\n              {\n                // approximation by laurent series in 1/x at 0+ order from -1 to 1\n
return
Math.log(x * 2 + (1 / (x * 2)));\n              }\n            }\n          else\n            {\n              return
Math.log(x + Math.sqrt(x * x + 1));\n            }\n          else if (x <= -taylor_n_bound)\n            {\n
return -asinh(-x);\n            }\n          else\n            {\n              // approximation by taylor series in x at 0 up to
order 2\n              var result = x;\n              if (Math.abs(x) >= taylor_2_bound)\n                {\n
var x3 =
x * x * x;\n                // approximation by taylor series in x at 0 up to order 4\n                result -= x3 / 6;\n
}\n              }\n            }\n          return result;\n        }\n      }\n    };\n    Math.asinh = asinh;\n  };\n\n  if (typeof Math.acosh === \"undefined\") {\n
Math.acosh = function(x) {\n    if (x < 1)\n      {\n        return NaN;\n      }\n    else if (x - 1
>= taylor_n_bound)\n      {\n        if (x > upper_taylor_2_bound)\n          {\n            //
approximation by laurent series in 1/x at 0+ order from -1 to 0\n            return Math.log(x) + Math.LN2;\n
}\n          else\n            {\n              return Math.log(x + Math.sqrt(x * x - 1));\n            }\n          }\n
else\n            {\n              var y = Math.sqrt(x - 1);\n              // approximation by taylor series in y at 0 up to
order 2\n              var result =

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y;\n      if (y >= taylor_2_bound)\n      {\n          var y3 = y * y * y;\n          // approximation\nby taylor series in y at 0 up to order 4\n      result -= y3 / 12;\n      }\n      return Math.sqrt(2) * result;\n      }\n      }\n      if (typeof Math.atanh === \"undefined\") {\n      Math.atanh = function(x) {\n          if (Math.abs(x) < taylor_n_bound) {\n          var result = x;\n          if (Math.abs(x) > taylor_2_bound) {\n          result += (x * x * x) / 3;\n          }\n          return result;\n          }\n          return Math.log((1 + x) / (1 - x)) / 2;\n      };\n      }\n      if (typeof Math.log1p === \"undefined\") {\n      Math.log1p = function(x) {\n      if (Math.abs(x) < taylor_n_bound) {\n          var x2 = x * x;\n          var x3 = x2 * x;\n          var x4 = x3 * x;\n          // approximation by\n      taylor series in x at 0 up to order 4\n          return (-x4 / 4 + x3 / 3 - x2 / 2 + x);\n      }\n      return\n      Math.log(x + 1);\n      };\n      }\n      if (typeof Math.expm1 === \"undefined\") {\n      Math.expm1 = function(x)\n      {\n          if (Math.abs(x) < taylor_n_bound) {\n          var x2 = x * x;\n          var x3 = x2 * x;\n          var\n      x4 = x3 * x;\n          // approximation by taylor series in x at 0 up to order 4\n          return (x4 / 24 + x3 / 6 +\n      x2 / 2 + x);\n          }\n          return Math.exp(x) - 1;\n      };\n      }\n      }\n      if (typeof Math.hypot ===\n      \"undefined\") {\n      Math.hypot = function() {\n          var y = 0;\n          var length = arguments.length;\n          for\n      (var i = 0; i < length; i++) {\n          if (arguments[i] === Infinity || arguments[i] === -Infinity) {\n          return\n      Infinity;\n          }\n          y += arguments[i] * arguments[i];\n          }\n          return Math.sqrt(y);\n      }\n      }\n      }\n      if (typeof Math.log10 === \"undefined\") {\n      Math.log10 = function(x) {\n          return Math.log(x) *\n      Math.LOG10E;\n      };\n      }\n      if (typeof Math.log2 === \"undefined\") {\n      Math.log2 = function(x) {\n          return\n      Math.log(x) * Math.LOG2E;\n      };\n      }\n      if (typeof Math.clz32 === \"undefined\") {\n      Math.clz32 = (function(log,\n      LN2) {\n          return function(x) {\n          var asUint = x >>> 0;\n          if (asUint === 0) {\n          return\n      32;\n          }\n          return 31 - (log(asUint) / LN2 | 0) | 0; // the \"| 0\" acts like math.floor\n      };\n      })(Math.log, Math.LN2);\n      }\n      }\n      // For HtmlUnit and PhantomJs\n      if (typeof ArrayBuffer.isView === \"undefined\")\n      {\n      ArrayBuffer.isView = function(a) {\n          return a != null && a.__proto__ != null && a.__proto__.__proto__\n      === Int8Array.prototype.__proto__;\n      };\n      }\n      }\n      if (typeof Array.prototype.fill === \"undefined\") {\n      // Polyfill\n      from https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/fill#Polyfill\n      Object.defineProperty(Array.prototype, 'fill', {\n          value: function (value) {\n          // Steps 1-2.\n          if\n      (this == null) {\n          throw new TypeError('this is null or not defined');\n          }\n          var O =\n      Object(this);\n          // Steps 3-5.\n          var len = O.length >>> 0;\n          // Steps 6-7.\n          var start =\n      arguments[1];\n          var relativeStart = start >> 0;\n          // Step 8.\n          var k = relativeStart < 0 ?\n      Math.max(len + relativeStart, 0) : \n      Math.min(relativeStart, len);\n          // Steps 9-10.\n          var end = arguments[2];\n          var relativeEnd = end === undefined ?\n      len : end >> 0;\n          // Step 11.\n          var finalValue = relativeEnd < 0 ?\n      Math.max(len + relativeEnd, 0) : \n      Math.min(relativeEnd, len);\n          // Step 12.\n          while (k < finalValue) {\n          O[k] =\n      value;\n          k++;\n          }\n          // Step 13.\n          return O;\n          }\n      });\n      }\n      }\n      (function() {\n      function normalizeOffset(offset, length) {\n          if (offset < 0) return Math.max(0, offset + length);\n          return\n      Math.min(offset, length);\n      }\n      function typedArraySlice(begin, end) {\n          if (typeof end === \"undefined\")\n      {\n          end = this.length;\n          }\n          begin = normalizeOffset(begin || 0, this.length);\n          end =\n      Math.max(begin, normalizeOffset(end, this.length));\n          return new this.constructor(this.subarray(begin, end));\n      }\n      }\n      var arrays = [Int8Array, Int16Array, Uint16Array, Int32Array, Float32Array, Float64Array];\n      for (var i =\n      0; i < arrays.length; ++i) {\n          var TypedArray = arrays[i];\n          if (typeof TypedArray.prototype.fill ===\n      \"undefined\")\n      {\n          Object.defineProperty(TypedArray.prototype, 'fill', {\n          value: Array.prototype.fill\n          });\n      }\n      }\n      if (typeof TypedArray.prototype.slice === \"undefined\") {\n      Object.defineProperty(TypedArray.prototype, 'slice', {\n          value: typedArraySlice\n          });\n      }\n      }\n      }\n      // Patch apply to work with TypedArrays if needed.\n      try {\n      (function() {}).apply(null, new\n      Int32Array(0))\n      } catch (e) {\n          var apply = Function.prototype.apply;\n      }\n      Object.defineProperty(Function.prototype, 'apply', {\n          value: function(self, array) {\n          return\n      apply.call(this, self, [].slice.call(array));\n          }\n      });\n      }\n      }\n      // Patch map to work with TypedArrays if

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needed.\n  for (var i = 0; i < arrays.length; ++i) {\n      var TypedArray = arrays[i];\n      if (typeof\n      TypedArray.prototype.map === \"undefined\") {\n          Object.defineProperty(TypedArray.prototype,\n          'map', {\n              value: function(callback, self) {\n                  return [].slice.call(this).map(callback, self);\n              }\n          });\n      }\n      // Patch sort to work with TypedArrays if needed.\n      // TODO: consider to\n      remove following function and replace it with `Kotlin.doubleCompareTo` (see misc.js)\n      var\n      totalOrderComparator = function (a, b) {\n          if (a < b) return -1;\n          if (a > b) return 1;\n          if (a === b) {\n              if (a !== 0) return 0;\n              var ia = 1 / a;\n              return ia === 1 / b ? 0 : (ia < 0 ? -1 : 1);\n          }\n          return a !== a ? (b !== b ? 0 : 1) : -1\n      };\n      for (var i = 0; i < arrays.length; ++i) {\n          var TypedArray =\n          arrays[i];\n          if (typeof TypedArray.prototype.sort === \"undefined\") {\n              Object.defineProperty(TypedArray.prototype, 'sort', {\n                  value: function(compareFunction) {\n                      return Array.prototype.sort.call(this, compareFunction || totalOrderComparator);\n                  }\n              });\n          }\n      }\n  });\n  \"/*\n  * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n  * Use\n  of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n  */\n  \n  Kotlin.Kind = {\n      CLASS: \"class\",\n      INTERFACE: \"interface\",\n      OBJECT:\n      \"object\"\n  };\n  Kotlin.callGetter = function (thisObject, klass, propertyName) {\n      var propertyDescriptor =\n      Object.getOwnPropertyDescriptor(klass, propertyName);\n      if (propertyDescriptor != null &&\n      propertyDescriptor.get != null) {\n          return propertyDescriptor.get.call(thisObject);\n      }\n      propertyDescriptor =\n      Object.getOwnPropertyDescriptor(thisObject, propertyName);\n      if (propertyDescriptor != null && \"value\" in\n      propertyDescriptor) {\n          return thisObject[propertyName];\n      }\n      return Kotlin.callGetter(thisObject,\n      Object.getPrototypeOf(klass), propertyName);\n  };\n  Kotlin.callSetter = function (thisObject, klass, propertyName,\n  value) {\n      var propertyDescriptor = Object.getOwnPropertyDescriptor(klass, propertyName);\n      if\n      (propertyDescriptor != null && propertyDescriptor.set != null) {\n          propertyDescriptor.set.call(thisObject,\n          value);\n          return;\n      }\n      propertyDescriptor = Object.getOwnPropertyDescriptor(thisObject,\n      propertyName);\n      if (propertyDescriptor != null && \"value\" in propertyDescriptor) {\n          thisObject[propertyName] = value;\n          return\n      }\n      Kotlin.callSetter(thisObject,\n      Object.getPrototypeOf(klass), propertyName, value);\n  };\n  function isInheritanceFromInterface(ctor, iface) {\n      if\n      (ctor === iface) return true;\n      var metadata = ctor.$metadata$;\n      if (metadata != null) {\n          var interfaces =\n          metadata.interfaces;\n          for (var i = 0; i < interfaces.length; i++) {\n              if\n              (isInheritanceFromInterface(interfaces[i],\n              iface)) {\n                  return true;\n              }\n          }\n          var superPrototype = ctor.prototype != null ?\n          Object.getPrototypeOf(ctor.prototype) : null;\n          var superConstructor = superPrototype != null ?\n          superPrototype.constructor : null;\n          return superConstructor != null &&\n          isInheritanceFromInterface(superConstructor, iface);\n      }\n  }\n  /**\n   * @param {*} object\n   * @param\n   {Function|Object} klass\n   * @returns {Boolean}\n   */\n  Kotlin.isType = function (object, klass) {\n      if (klass ===\n      Object) {\n          switch (typeof object) {\n              case \"string\":\n              case \"number\":\n              case\n              \"boolean\":\n              case \"function\":\n                  return true;\n              default:\n                  return object instanceof\n          Object;\n          }\n      }\n      if (object == null || klass == null || (typeof object !== 'object' && typeof object !==\n      'function')) {\n          return false;\n      }\n      if (typeof klass === \"function\" && object instanceof\n      klass) {\n          return true;\n      }\n      var proto = Object.getPrototypeOf(klass);\n      var constructor = proto != null ?\n      proto.constructor : null;\n      if (constructor != null && \"$metadata$\" in constructor) {\n          var metadata =\n          constructor.$metadata$;\n          if (metadata.kind === Kotlin.Kind.OBJECT) {\n              return object === klass;\n          }\n          var classMetadata = klass.$metadata$;\n          // In WebKit (JavaScriptCore) for some interfaces from\n          DOM typeof returns \"object\", nevertheless they can be used in RHS of instanceof\n          if (classMetadata == null)\n          {\n              return object instanceof klass;\n          }\n          if (classMetadata.kind === Kotlin.Kind.INTERFACE &&\n          object.constructor != null) {\n              return isInheritanceFromInterface(object.constructor, klass);\n          }\n          return\n          false;\n      }\n  }\n  Kotlin.isNumber = function (a) {\n      return typeof a == \"number\" || a instanceof\n      Kotlin.Long;\n  };\n  Kotlin.isChar = function (value) {\n      return
  
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value instanceof Kotlin.BoxedChar\n};\n\nKotlin.isComparable = function (value) {\n  var type = typeof
value;\n  return type === \"string\" ||\n      type === \"boolean\" ||\n      Kotlin.isNumber(value) ||\n      Kotlin.isType(value, Kotlin.kotlin.Comparable);\n};\n\nKotlin.isCharSequence = function (value) {\n  return
typeof value === \"string\" || Kotlin.isType(value, Kotlin.kotlin.CharSequence);\n};\n\n/*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get
declarations directly under the module\n\n@PublishedApi\nnexternal internal fun <T> Array(size: Int):
Array<T>\n\n@JsName(\"newArray\")\nfun <T> newArray(size: Int, initValue: T) = fillArrayVal(Array<T>(size),
initValue)\n\n@JsName(\"newArrayF\")\ninline fun <T> arrayWithFun(size: Int, init: (Int) -> T) =
fillArrayFun(Array<T>(size),
init)\n\n@JsName(\"fillArray\")\ninline fun <T> fillArrayFun(array: Array<T>, init: (Int) -> T): Array<T> {\n  for
(i in 0..array.size - 1) {\n    array[i] = init(i)\n  }\n  return array\n}\n\n@JsName(\"booleanArray\")\nfun
booleanArray(size: Int, init: dynamic): Array<Boolean> {\n  val result: dynamic = Array<Boolean>(size)\n  result.`$type$` = \"BooleanArray\"\n  return when (init) {\n    null, true -> fillArrayVal(result, false)\n    false -
> result\n    else -> fillArrayFun<Boolean>(result, init)\n  }\n}\n\n@JsName(\"booleanArrayF\")\ninline fun
booleanArrayWithFun(size: Int, init: (Int) -> Boolean): Array<Boolean> = fillArrayFun(booleanArray(size, false),
init)\n\n@JsName(\"charArray\")\n@Suppress(\"UNUSED_PARAMETER\")\nfun charArray(size: Int, init:
dynamic): Array<Char> {\n  val result = js(\"new Uint16Array(size)\")\n  result.`$type$` = \"CharArray\"\n  return when (init) {\n    null, true, false -> result // For consistency\n    else -> fillArrayFun<Char>(result, init)\n  }\n}\n\n@JsName(\"charArrayF\")\ninline fun
charArrayWithFun(size: Int, init: (Int) -> Char): Array<Char> {\n  val array = charArray(size, null)\n  for (i in
0..array.size - 1) {\n    @Suppress(\"UNUSED_VARIABLE\") // used in js block\n    val value = init(i)\n    js(\"array[i] = value;\")\n  }\n  return array\n}\n\n@JsName(\"untypedCharArrayF\")\ninline fun
untypedCharArrayWithFun(size: Int, init: (Int) -> Char): Array<Char> {\n  val array = Array<Char>(size)\n  for
(i in 0..array.size - 1) {\n    @Suppress(\"UNUSED_VARIABLE\") // used in js block\n    val value = init(i)\n    js(\"array[i] = value;\")\n  }\n  return array\n}\n\n@JsName(\"longArray\")\nfun longArray(size: Int, init:
dynamic): Array<Long> {\n  val result: dynamic = Array<Long>(size)\n  result.`$type$` = \"LongArray\"\n  return when (init) {\n    null, true -> fillArrayVal(result, 0L)\n    false -> result\n    else -> fillArrayFun<Long>(result, init)\n  }\n}\n\n@JsName(\"longArrayF\")\ninline fun
longArrayWithFun(size: Int, init: (Int) -> Long): Array<Long> = fillArrayFun(longArray(size, false),
init)\n\nprivate fun <T> fillArrayVal(array: Array<T>, initValue: T): Array<T> {\n  for (i in 0..array.size - 1) {\n
array[i] = initValue\n  }\n  return array\n}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\npublic class Enum<T> : Enum<T>> :
Comparable<Enum<T>> {\n  @JsName(\"name$\") private var _name: String = \"\"\n  @JsName(\"ordinal$\")
private var _ordinal: Int = 0\n  val name: String\n  get() = _name\n  val ordinal: Int\n  get() =
_ordinal\n\n  override fun compareTo(other: Enum<T>) = ordinal.compareTo(other.ordinal)\n\n  override fun
equals(other: Any?) = this ===
other\n\n  override fun hashCode(): Int = js(\"Kotlin.identityHashCode\")(this)\n\n  override fun toString() =
name\n\n  companion object\n}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.js.internal\n\n@JsName(\"DoubleCompanionObject\")\ninternal
object DoubleCompanionObject {\n  @JsName(\"MIN_VALUE\")\n  const val MIN_VALUE: Double = 4.9E-324\n\n  @JsName(\"MAX_VALUE\")\n  const val MAX_VALUE: Double = 1.7976931348623157E308\n\n  @JsName(\"POSITIVE_INFINITY\")\n  @Suppress(\"DIVISION_BY_ZERO\")\n  const val
POSITIVE_INFINITY: Double = 1.0 / 0.0\n\n  @JsName(\"NEGATIVE_INFINITY\")\n  @Suppress(\"DIVISION_BY_ZERO\")\n  const val NEGATIVE_INFINITY: Double = -1.0 / 0.0\n\n  @JsName(\"NaN\")\n  @Suppress(\"DIVISION_BY_ZERO\")\n  const val NaN: Double = -(0.0 / 0.0)\n\n}

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@JsName("SIZE_BYTES")\n
    const val SIZE_BYTES = 8\n\n    @JsName("SIZE_BITS")\n    const val SIZE_BITS =
64\n}\n\n@JsName("FloatCompanionObject")\ninternal object FloatCompanionObject {\n
@JsName("MIN_VALUE")\n    const val MIN_VALUE: Float = 1.4E-45F\n\n    @JsName("MAX_VALUE")\n
const val MAX_VALUE: Float = 3.4028235E38F\n\n    @JsName("POSITIVE_INFINITY")\n
@Suppress("DIVISION_BY_ZERO")\n    const val POSITIVE_INFINITY: Float = 1.0F / 0.0F\n\n
@JsName("NEGATIVE_INFINITY")\n    @Suppress("DIVISION_BY_ZERO")\n    const val
NEGATIVE_INFINITY: Float = -1.0F / 0.0F\n\n    @JsName("NaN")\n
@Suppress("DIVISION_BY_ZERO")\n    const val NaN: Float = -(0.0F / 0.0F)\n\n
@JsName("SIZE_BYTES")\n    const val SIZE_BYTES = 4\n\n    @JsName("SIZE_BITS")\n    const val
SIZE_BITS = 32\n}\n\n@JsName("IntCompanionObject")\ninternal object IntCompanionObject {\n
@JsName("MIN_VALUE")\n    val MIN_VALUE: Int = -2147483647 - 1\n\n    @JsName("MAX_VALUE")\n
    val MAX_VALUE: Int = 2147483647\n\n    @JsName("SIZE_BYTES")\n    const val SIZE_BYTES = 4\n\n
@JsName("SIZE_BITS")\n    const val SIZE_BITS = 32\n}\n\n@JsName("LongCompanionObject")\ninternal
object LongCompanionObject {\n    @JsName("MIN_VALUE")\n    val MIN_VALUE: Long =
js("Kotlin.Long.MIN_VALUE")\n\n    @JsName("MAX_VALUE")\n    val MAX_VALUE: Long =
js("Kotlin.Long.MAX_VALUE")\n\n    @JsName("SIZE_BYTES")\n    const val SIZE_BYTES = 8\n\n
@JsName("SIZE_BITS")\n    const val SIZE_BITS = 64\n}\n\n@JsName("ShortCompanionObject")\ninternal
object ShortCompanionObject {\n    @JsName("MIN_VALUE")\n    val MIN_VALUE: Short = -32768\n\n
@JsName("MAX_VALUE")\n    val MAX_VALUE: Short = 32767\n\n    @JsName("SIZE_BYTES")\n    const
val SIZE_BYTES = 2\n\n    @JsName("SIZE_BITS")\n    const val SIZE_BITS =
16\n}\n\n@JsName("ByteCompanionObject")\ninternal object ByteCompanionObject {\n
@JsName("MIN_VALUE")\n    val MIN_VALUE: Byte = -128\n\n
    @JsName("MAX_VALUE")\n    val MAX_VALUE: Byte = 127\n\n    @JsName("SIZE_BYTES")\n    const
val SIZE_BYTES = 1\n\n    @JsName("SIZE_BITS")\n    const val SIZE_BITS =
8\n}\n\n@JsName("CharCompanionObject")\ninternal object CharCompanionObject {\n
@JsName("MIN_VALUE")\n    public const val MIN_VALUE: Char = "\u0000"\n\n
@JsName("MAX_VALUE")\n    public const val MAX_VALUE: Char = "\uFFFF"\n\n
@JsName("MIN_HIGH_SURROGATE")\n    public const val MIN_HIGH_SURROGATE: Char = "\uD800"\n\n
@JsName("MAX_HIGH_SURROGATE")\n    public const val MAX_HIGH_SURROGATE: Char =
"\uDBFF"\n\n    @JsName("MIN_LOW_SURROGATE")\n    public const val MIN_LOW_SURROGATE: Char =
"\uDC00"\n\n    @JsName("MAX_LOW_SURROGATE")\n    public const val MAX_LOW_SURROGATE: Char =
"\uDFFF"\n\n    @JsName("MIN_SURROGATE")\n    public const val MIN_SURROGATE: Char =
MIN_HIGH_SURROGATE\n\n    @JsName("MAX_SURROGATE")\n    public const val MAX_SURROGATE:
Char = MAX_LOW_SURROGATE\n\n
    @JsName("SIZE_BYTES")\n    const val SIZE_BYTES = 2\n\n    @JsName("SIZE_BITS")\n    const val
SIZE_BITS = 16\n}\n\ninternal object StringCompanionObject {\n\n\ninternal object BooleanCompanionObject
{\n}\n\n",/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ArraysKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the
size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic
inline operator fun <T> Array<out T>.component1(): T {\n    return get(0)\n}\n\n/**\n * Returns 1st *element*
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun

```

ByteArray.component1(): Byte {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component1(): Short {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component1(): Int {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component1(): Long {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component1(): Float {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component1(): Double {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component1(): Boolean {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component1(): Char {\n return get(0)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component2(): T {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component2(): Byte {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component2(): Short {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component2(): Int {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component2(): Long {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component2(): Float {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component2(): Double {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component2(): Boolean {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun


```

*\/n@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component4(): Double {\n    return
get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component4(): Boolean {\n    return
get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic
inline operator fun CharArray.component4(): Char {\n    return get(3)\n}\n\n/**\n * Returns 5th *element* from the
array.\n * \n * If the size of this array is less than 5, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n
* where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out
T>.component5(): T {\n    return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of
this array is less than 5, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is
unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component5(): Byte {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5,
throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component5(): Short {\n
    return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5,
throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component5(): Int {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component5(): Long {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component5(): Float {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n
* \n * If the size of this array is less than 5, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where
the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun
DoubleArray.component5(): Double {\n    return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n *
If the size of this array is less than 5, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component5():
Boolean {\n    return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is
less than 5, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\/n@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component5(): Char {\n    return
get(4)\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\/n\npublic operator fun
<@kotlin.internal.OnlyInputTypes
T> Array<out T>.contains(element: T): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if
[element] is found in the array.\n
*\/n\npublic operator fun
ByteArray.contains(element: Byte): Boolean {\n    return
indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\/n\npublic operator fun
ShortArray.contains(element: Short): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if
[element] is found in the array.\n
*\/n\npublic operator fun
IntArray.contains(element: Int): Boolean {\n    return
indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\/n\npublic operator fun
LongArray.contains(element: Long): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if
[element] is found in the array.\n
*\/n\n@Deprecated("\nThe function has unclear behavior when searching for NaN or
zero values and will be removed soon. Use 'any { it == element }' instead
to continue using this behavior, or '.asList().contains(element: T)' to get the same search behavior as in a list.",
ReplaceWith("\nany { it == element }\n"))\n@DeprecatedSinceKotlin(warningSince = "\n1.4", errorSince = "\n1.6",
hiddenSince = "\n1.7")\npublic operator fun FloatArray.contains(element: Float): Boolean {\n    return any { it ==

```



```

IntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Int): Int {\n
return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Long): Long {\n
return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of
calling
the [defaultValue] function if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Float): Float {\n
return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Double): Double {\n
return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.elementAtOrElse(index: Int, defaultValue: (Int) ->
Boolean): Boolean {\n
return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n
return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the
[index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Array<out T>.elementAtOrNull(index: Int): T? {\n
return this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.elementAtOrNull(index: Int): Byte? {\n
return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.elementAtOrNull(index: Int): Short? {\n
return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.elementAtOrNull(index: Int): Int? {\n
return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.elementAtOrNull(index: Int): Long? {\n
return this.getOrNull(index)\n}\n\n/**\n
* Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.elementAtOrNull(index: Int): Float? {\n
return this.getOrNull(index)\n}\n\n/**\n
* Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n
* \n
* @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.elementAtOrNull(index: Int): Double? {\n
return this.getOrNull(index)\n}\n\n/**\n
* Returns an
element at the given

```


[index] or `null` if the [index] is out of bounds of this array.

```

n * n * @sample
samples.collections.Collections.Elements.elementAtOrNull
n * n @kotlin.internal.InlineOnly
n public inline fun
BooleanArray.elementAtOrNull(index: Int): Boolean? {
n return this.getOrNull(index)
n }
n n /**
n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.
n * n * @sample
samples.collections.Collections.Elements.elementAtOrNull
n * n @kotlin.internal.InlineOnly
n public inline fun
CharArray.elementAtOrNull(index: Int): Char? {
n return this.getOrNull(index)
n }
n n /**
n * Returns the first
element matching the given [predicate], or `null` if no such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun <T> Array<out
T>.find(predicate: (T) -> Boolean): T? {
n return firstOrNull(predicate)
n }
n n /**
n * Returns the first element
matching the given [predicate], or `null` if
no such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun ByteArray.find(predicate: (Byte) -> Boolean): Byte? {
n return
firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if no such
element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun ShortArray.find(predicate: (Short) -> Boolean): Short? {
n
return firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if no
such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun IntArray.find(predicate: (Int) -> Boolean): Int? {
n return
firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if no such
element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun LongArray.find(predicate: (Long) -> Boolean): Long? {
n
return firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if no
such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun FloatArray.find(predicate: (Float) -> Boolean): Float? {
n
return firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if no
such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun DoubleArray.find(predicate: (Double) -> Boolean): Double? {
n
return firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if no
such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun BooleanArray.find(predicate: (Boolean) -> Boolean): Boolean?
{
n return firstOrNull(predicate)
n }
n n /**
n * Returns the first element matching the given [predicate], or `null` if
no such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun CharArray.find(predicate: (Char) -> Boolean): Char? {
n return
firstOrNull(predicate)
n }
n n /**
n * Returns the last element matching the given [predicate], or `null` if no such
element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun <T> Array<out T>.findLast(predicate: (T) -> Boolean): T? {
n
return lastOrNull(predicate)
n }
n n /**
n * Returns the last element matching the given [predicate], or `null` if no
such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public
inline fun ByteArray.findLast(predicate: (Byte) -> Boolean): Byte? {
n return
lastOrNull(predicate)
n }
n n /**
n * Returns the last element matching the given [predicate], or `null` if no such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun
ShortArray.findLast(predicate: (Short) -> Boolean): Short? {
n return
lastOrNull(predicate)
n }
n n /**
n * Returns the last element matching the given [predicate], or `null` if no such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun
IntArray.findLast(predicate: (Int) -> Boolean): Int? {
n return
lastOrNull(predicate)
n }
n n /**
n * Returns the last
element matching the given [predicate], or `null` if no such element was found.
n * n * @sample
samples.collections.Collections.Elements.find
n * n @kotlin.internal.InlineOnly
n public inline fun

```

LongArray.findLast(predicate:

(Long) -> Boolean): Long? {\n return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample

samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun

FloatArray.findLast(predicate: (Float) -> Boolean): Float? {\n return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample

samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun

DoubleArray.findLast(predicate: (Double) -> Boolean): Double? {\n return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample

samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun

BooleanArray.findLast(predicate: (Boolean) -> Boolean): Boolean?

{\n return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample

samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun

CharArray.findLast(predicate: (Char) -> Boolean): Char? {\n return lastOrNull(predicate)\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun <T> Array<out T>.first(): T {\n if (isEmpty())\n throw

NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun

ByteArray.first(): Byte {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the

first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun ShortArray.first():

Short

{\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun

IntArray.first(): Int {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return

this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun

LongArray.first(): Long {\n if (isEmpty())\n throw NoSuchElementException("Array is

empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if

the array is empty.\n */\npublic fun FloatArray.first(): Float {\n if (isEmpty())\n throw

NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun

DoubleArray.first(): Double {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the

first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun

BooleanArray.first(): Boolean {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is

empty.\n */\npublic fun CharArray.first(): Char {\n if (isEmpty())\n throw NoSuchElementException("Array

is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws

[NoSuchElementException] if no such element is found.\n */\npublic inline fun <T> Array<out T>.first(predicate:

(T) -> Boolean): T {\n for (element in this) if (predicate(element)) return element\n throw

NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first

element

matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic

inline fun ByteArray.first(predicate: (Byte) -> Boolean): Byte {\n for (element in this) if (predicate(element))

return element\n throw NoSuchElementException("Array contains no element matching the

predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws

[NoSuchElementException] if no such element is found.\n */\npublic inline fun ShortArray.first(predicate: (Short) -

> Boolean): Short {\n for (element in this) if (predicate(element)) return element\n throw

NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first

element matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n */\n

```

*public inline fun IntArray.first(predicate: (Int) -> Boolean): Int {
    for (element in this) if (predicate(element))
        return element
    throw NoSuchElementException("Array
contains no element matching the predicate.")
}
* Returns the first element matching the given
[predicate].
* @throws [NoSuchElementException] if no such element is found.
*public inline fun
LongArray.first(predicate: (Long) -> Boolean): Long {
    for (element in this) if (predicate(element)) return
element
    throw NoSuchElementException("Array contains no element matching the predicate.")
}
* Returns the first element matching the given [predicate].
* @throws [NoSuchElementException] if no such
element is found.
*public inline fun FloatArray.first(predicate: (Float) -> Boolean): Float {
    for (element in
this) if (predicate(element)) return element
    throw NoSuchElementException("Array contains no element
matching the predicate.")
}
* Returns the first element matching the given [predicate].
* @throws
[NoSuchElementException] if no such element is found.
*public inline fun DoubleArray.first(predicate:
(Double) -> Boolean): Double {
    for (element in this) if (predicate(element)) return element
    throw
NoSuchElementException("Array contains no element matching the predicate.")
}
* Returns the first
element matching the given [predicate].
* @throws [NoSuchElementException] if no such element is found.
*public inline fun BooleanArray.first(predicate: (Boolean) -> Boolean): Boolean {
    for (element in this) if
(predicate(element)) return element
    throw NoSuchElementException("Array contains no element matching the
predicate.")
}
* Returns the first element matching the given [predicate].
* @throws
[NoSuchElementException] if no such element is found.
*public inline fun CharArray.first(predicate: (Char) ->
Boolean): Char {
    for (element in this) if (predicate(element)) return element
    throw
NoSuchElementException("Array contains no element matching the predicate.")
}
* Returns the first
non-null value produced
by [transform] function being applied to elements of this array in iteration order,
or throws
[NoSuchElementException] if no non-null value was produced.
* @sample
samples.collections.Collections.Transformations.firstNotNullOf
*
* @SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <T, R : Any> Array<out
T>.firstNotNullOf(transform: (T) -> R?): R {
    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the array was transformed to a non-null value.")
}
* Returns
the first non-null value produced by [transform] function being applied to elements of this array in iteration order,
or `null` if no non-null value was produced.
* @sample
samples.collections.Collections.Transformations.firstNotNullOf
*
* @SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <T, R : Any> Array<out
T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {
    for (element in this) {
        val result =
transform(element)
        if (result != null) {
            return result
        }
    }
    return null
}
* Returns the first element, or
`null` if the array is empty.
*public fun <T> Array<out T>.firstOrNull(): T? {
    return if (isEmpty()) null else
this[0]
}
* Returns the first element, or `null` if the array is empty.
*public fun
ByteArray.firstOrNull(): Byte? {
    return if (isEmpty()) null else this[0]
}
* Returns the first element, or
`null` if the array is empty.
*public fun ShortArray.firstOrNull(): Short? {
    return if (isEmpty()) null else
this[0]
}
* Returns the first element, or `null` if the array is empty.
*public fun IntArray.firstOrNull():
Int? {
    return if (isEmpty()) null else this[0]
}
* Returns the first element, or `null` if the array is
empty.
*public fun LongArray.firstOrNull(): Long? {
    return if (isEmpty()) null else this[0]
}
* Returns the first element,
or `null` if the array is empty.
*public fun FloatArray.firstOrNull(): Float? {
    return if (isEmpty()) null else
this[0]
}
* Returns the first element, or `null` if the array is empty.
*public fun
DoubleArray.firstOrNull(): Double? {
    return if (isEmpty()) null else this[0]
}
* Returns the first
element, or `null` if the array is empty.
*public fun BooleanArray.firstOrNull(): Boolean? {
    return if
(isEmpty()) null else this[0]
}
* Returns the first element, or `null` if the array is empty.
*public fun
CharArray.firstOrNull(): Char? {
    return if (isEmpty()) null else this[0]
}
* Returns the first element

```

matching the given [predicate], or `null` if element was not found.

```

public inline fun <T> Array<out T>.firstOrNull(predicate: (T) -> Boolean): T? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun ByteArray.firstOrNull(predicate: (Byte) -> Boolean): Byte? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun ShortArray.firstOrNull(predicate: (Short) -> Boolean): Short? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun IntArray.firstOrNull(predicate: (Int) -> Boolean): Int? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun LongArray.firstOrNull(predicate: (Long) -> Boolean): Long? {
    for (element in this) if (predicate(element)) return
    element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun FloatArray.firstOrNull(predicate: (Float) -> Boolean): Float? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun DoubleArray.firstOrNull(predicate: (Double) -> Boolean): Double? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun BooleanArray.firstOrNull(predicate: (Boolean) -> Boolean): Boolean? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns the first element matching the given [predicate], or `null` if element was not found.

```

public inline fun CharArray.firstOrNull(predicate: (Char) -> Boolean): Char? {
    for (element in this) if (predicate(element)) return element
    return null
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.getOrNull(index: Int, default: (Int) -> T): T? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun ByteArray.getOrNull(index: Int, default: (Int) -> Byte): Byte? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun ShortArray.getOrNull(index: Int, default: (Int) -> Short): Short? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun IntArray.getOrNull(index: Int, default: (Int) -> Int): Int? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun LongArray.getOrNull(index: Int, default: (Int) -> Long): Long? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun FloatArray.getOrNull(index: Int, default: (Int) -> Float): Float? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

@kotlin.internal.InlineOnly
public inline fun DoubleArray.getOrNull(index: Int, default: (Int) -> Double): Double? {
    return if (index >= 0 && index <= lastIndex) get(index) else default(index)
}

```

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.

```

function if the [index] is out of bounds of this array.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.getOrElse(index: Int, defaultValue: (Int) -> Boolean): Boolean {\n    return if (index
>= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given
[index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.getOrElse(index: Int, defaultValue: (Int) -> Char):
Char {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns
an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun <T> Array<out T>.getOrNull(index: Int): T?
{\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the
given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun ByteArray.getOrNull(index: Int): Byte? {\n
return if (index >=
0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*/\npublic fun ShortArray.getOrNull(index: Int): Short? {\n    return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of
this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n */\npublic fun
IntArray.getOrNull(index: Int): Int? {\n    return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n
* @sample samples.collections.Collections.Elements.getOrNull\n */\npublic fun LongArray.getOrNull(index: Int):
Long? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun FloatArray.getOrNull(index: Int): Float? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given
[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun DoubleArray.getOrNull(index: Int): Double?
{\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the
given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun BooleanArray.getOrNull(index: Int): Boolean?
{\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the
given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n */\npublic fun
CharArray.getOrNull(index: Int): Char? {\n    return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\npublic fun
<@kotlin.internal.OnlyInputTypes T> Array<out T>.indexOf(element: T): Int {\n    if (element == null) {\n        for
(index in indices) {\n            if (this[index] == null) {\n                return index\n            }\n        }\n    }
else {\n        for (index in indices) {\n            if (element == this[index]) {\n                return index\n           
}\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain
element.\n */\npublic fun ByteArray.indexOf(element: Byte): Int {\n    for (index in indices) {\n        if (element
== this[index]) {\n            return index\n        }\n    }\n    return
-1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\npublic fun
ShortArray.indexOf(element: Short): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n
return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not
contain element.\n */\npublic fun IntArray.indexOf(element: Int): Int {\n    for (index in indices) {\n        if (element
== this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -
1 if the array does not contain element.\n */\npublic fun LongArray.indexOf(element: Long): Int {\n    for (index in
indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n
* Returns first index of [element], or -1 if the array does not contain element.\n */\n@Deprecated("The function has unclear

```

behavior when searching

for NaN or zero values and will be removed soon. Use 'indexOfFirst { it == element }' instead to continue using this behavior, or '.asList().indexOf(element: T)' to get the same search behavior as in a list.'

```
ReplaceWith("indexOfFirst { it == element }")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")\npublic fun FloatArray.indexOf(element: Float): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\n\n@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed soon. Use 'indexOfFirst { it == element }' instead to continue using this behavior, or '.asList().indexOf(element: T)' to get the same search behavior as in a list.",
```

```
ReplaceWith("indexOfFirst { it == element }")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")\npublic fun DoubleArray.indexOf(element: Double): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\n\npublic fun
```

```
BooleanArray.indexOf(element: Boolean): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\n\npublic fun CharArray.indexOf(element: Char): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun <T> Array<out T>.indexOfFirst(predicate: (T) ->
```

```
Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun ByteArray.indexOfFirst(predicate: (Byte) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun ShortArray.indexOfFirst(predicate: (Short) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun IntArray.indexOfFirst(predicate:
```

```
(Int) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun LongArray.indexOfFirst(predicate: (Long) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun FloatArray.indexOfFirst(predicate: (Float) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic
```

```
inline fun DoubleArray.indexOfFirst(predicate: (Double) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun
```

```
BooleanArray.indexOfFirst(predicate: (Boolean) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun CharArray.indexOfFirst(predicate: (Char) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array
```

```
does not contain such element.\n */\n\npublic inline fun <T> Array<out T>.indexOfLast(predicate: (T) -> Boolean): Int {\n    for (index in indices.reversed()) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n}
```



```

samples.collections.Collections.Elements.last\n *^/npublic fun BooleanArray.last(): Boolean {\n  if (isEmpty())\n    throw NoSuchElementException("Array is empty.")\n  return this[lastIndex]\n}\n/n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic fun CharArray.last(): Char {\n  if (isEmpty())\n    throw NoSuchElementException("Array is empty.")\n  return this[lastIndex]\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun <T> Array<out T>.last(predicate: (T) -> Boolean): T {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun ByteArray.last(predicate: (Byte) -> Boolean): Byte {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun ShortArray.last(predicate: (Short) -> Boolean): Short {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun IntArray.last(predicate: (Int) -> Boolean): Int {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun LongArray.last(predicate: (Long) -> Boolean): Long {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun FloatArray.last(predicate: (Float) -> Boolean): Float {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun DoubleArray.last(predicate: (Double) -> Boolean): Double {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun BooleanArray.last(predicate: (Boolean) -> Boolean): Boolean {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n/n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^/npublic inline fun

```



```

CharArray.last(predicate: (Char) -> Boolean): Char {
    for (index in this.indices.reversed()) {
        val element = this[index]
        if (predicate(element)) return element
    }
    throw NoSuchElementException("Array contains no element matching the predicate.")
}

Returns last index of [element], or -1 if the array does not contain element.

public fun <@kotlin.internal.OnlyInputTypes T> Array<out T>.lastIndexOf(element: T): Int {
    if (element == null) {
        for (index in indices.reversed()) {
            if (this[index] == null) {
                return index
            }
        }
    } else {
        for (index in indices.reversed()) {
            if (element == this[index]) {
                return index
            }
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

public fun ByteArray.lastIndexOf(element: Byte): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

public fun ShortArray.lastIndexOf(element: Short): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

public fun IntArray.lastIndexOf(element: Int): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

public fun LongArray.lastIndexOf(element: Long): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed soon. Use 'indexOfLast { it == element }' instead to continue using this behavior, or '.asList().lastIndexOf(element: T)' to get the same search behavior as in a list.")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")
public fun FloatArray.lastIndexOf(element: Float): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed soon. Use 'indexOfLast { it == element }' instead to continue using this behavior, or '.asList().lastIndexOf(element: T)' to get the same search behavior as in a list.")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")
public fun DoubleArray.lastIndexOf(element: Double): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

public fun BooleanArray.lastIndexOf(element: Boolean): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns last index of [element], or -1 if the array does not contain element.

public fun CharArray.lastIndexOf(element: Char): Int {
    for (index in indices.reversed()) {
        if (element == this[index]) {
            return index
        }
    }
    return -1
}

Returns the last element, or `null` if the array is empty.

@sample
samples.collections.Collections.Elements.last

public fun <T> Array<out T>.lastOrNull(): T? {
    return if (isEmpty()) null else this[size - 1]
}

Returns the last element, or `null` if the array is empty.

@sample
samples.collections.Collections.Elements.last

public fun ByteArray.lastOrNull(): Byte? {
    return if (isEmpty()) null else this[size - 1]
}

Returns the last element, or `null` if the array is empty.

@sample
samples.collections.Collections.Elements.last

public fun ShortArray.lastOrNull(): Short? {
    return if (isEmpty()) null else this[size - 1]
}

Returns the last element, or `null` if the array is empty.

@sample
samples.collections.Collections.Elements.last

public fun IntArray.lastOrNull(): Int? {
    return if (isEmpty()) null else this[size - 1]
}

Returns the last element, or `null` if the array is empty.

@sample
samples.collections.Collections.Elements.last

public fun LongArray.lastOrNull(): Long? {
    return if (isEmpty()) null else this[size - 1]
}

Returns the last element, or `null` if the array is empty.

@sample
samples.collections.Collections.Elements.last

public fun FloatArray.lastOrNull():

```

```

Float? {\n    return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array
is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun
DoubleArray.lastOrNull(): Double? {\n    return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*/\npublic fun BooleanArray.lastOrNull(): Boolean? {\n    return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n *
Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun CharArray.lastOrNull(): Char? {\n    return if
(isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if
no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun
<T> Array<out T>.lastOrNull(predicate: (T) -> Boolean): T? {\n    for (index in this.indices.reversed()) {\n        val
element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ByteArray.lastOrNull(predicate:
(Byte) -> Boolean): Byte? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ShortArray.lastOrNull(predicate: (Short) ->
Boolean): Short? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun IntArray.lastOrNull(predicate: (Int) ->
Boolean): Int? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element
was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun
LongArray.lastOrNull(predicate: (Long) -> Boolean): Long? {\n    for (index in this.indices.reversed()) {\n        val
element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun FloatArray.lastOrNull(predicate: (Float) ->
Boolean): Float? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic inline fun DoubleArray.lastOrNull(predicate: (Double) -> Boolean): Double? {\n    for (index in
this.indices.reversed()) {\n        val element = this[index]\n        if (predicate(element)) return element\n    }\n    return
null\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was
found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun
BooleanArray.lastOrNull(predicate: (Boolean) -> Boolean): Boolean? {\n    for (index in this.indices.reversed()) {\n
        val element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns
the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun CharArray.lastOrNull(predicate: (Char) ->
Boolean): Char? {\n    for (index in this.indices.reversed()) {\n        val element
= this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns a random
element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.random(): T {\n
return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.random(): Byte {\n    return random(Random)\n}\n\n/**\n * Returns a random element from

```

```

this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.random(): Short {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.random(): Int {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this
array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.random(): Long {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun FloatArray.random(): Float {\n    return random(Random)\n}\n\n/**\n * Returns a random element from
this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.random(): Double {\n
return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun BooleanArray.random(): Boolean {\n    return random(Random)\n}\n\n/**\n * Returns a random element
from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.random(): Char {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic
fun <T> Array<out T>.random(random: Random): T {\n    if (isEmpty())\n        throw
NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random
element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if
this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic fun ByteArray.random(random: Random): Byte {\n    if
(isEmpty())\n        throw NoSuchElementException("Array
is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the
specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n\npublic fun ShortArray.random(random: Random): Short {\n    if (isEmpty())\n        throw
NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a
random element from this array using the specified source of randomness.\n * \n * @throws
NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic fun IntArray.random(random:
Random): Int {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic
fun LongArray.random(random:
Random): Long {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic
fun FloatArray.random(random: Random): Float {\n    if (isEmpty())\n        throw
NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if
this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic fun DoubleArray.random(random: Random): Double {\n
if (isEmpty())\n    throw NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException
if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic fun BooleanArray.random(random: Random): Boolean
{\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n * \n *\n@SinceKotlin("1.3")\n\npublic

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fun CharArray.random(random: Random): Char {
    if (isEmpty())
        throw NoSuchElementException("Array
is empty.")
    return get(random.nextInt(size))
}
/**
 * Returns a random element from this array, or `null` if
this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.randomOrNull(): T? {
    return randomOrNull(Random)
}
/**
 * Returns a
random element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun ByteArray.randomOrNull(): Byte? {
    return randomOrNull(Random)
}
/**
 * Returns a random
element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun ShortArray.randomOrNull(): Short? {
    return randomOrNull(Random)
}
/**
 * Returns a
random element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun IntArray.randomOrNull(): Int? {
    return randomOrNull(Random)
}
/**
 * Returns a random
element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun LongArray.randomOrNull(): Long? {
    return randomOrNull(Random)
}
/**
 * Returns a random element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun FloatArray.randomOrNull(): Float? {
    return randomOrNull(Random)
}
/**
 * Returns a
random element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun DoubleArray.randomOrNull(): Double? {
    return randomOrNull(Random)
}
/**
 * Returns a
random element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
inline fun BooleanArray.randomOrNull(): Boolean? {
    return randomOrNull(Random)
}
/**
 * Returns a
random element from this array, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public
c
inline fun CharArray.randomOrNull(): Char? {
    return randomOrNull(Random)
}
/**
 * Returns a random
element from this array using the specified source of randomness, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun <T> Array<out
T>.randomOrNull(random: Random): T? {
    if (isEmpty())
        return null
    return
get(random.nextInt(size))
}
/**
 * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun
ByteArray.randomOrNull(random: Random): Byte? {
    if (isEmpty())
        return null
    return
get(random.nextInt(size))
}
/**
 * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public
fun ShortArray.randomOrNull(random: Random): Short? {
    if (isEmpty())
        return null
    return
get(random.nextInt(size))
}
/**
 * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun
IntArray.randomOrNull(random: Random): Int? {
    if (isEmpty())
        return null
    return
get(random.nextInt(size))
}
/**
 * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.
*/

```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
LongArray.randomOrNull(random: Random): Long? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array
is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
FloatArray.randomOrNull(random: Random): Float? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
DoubleArray.randomOrNull(random: Random): Double? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
BooleanArray.randomOrNull(random: Random): Boolean? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified
source of randomness, or `null` if this array is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharArray.randomOrNull(random: Random): Char? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or
has more than one element.\n */\npublic fun <T> Array<out T>.single(): T {\n return when (size) {\n 0 ->
throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\npublic fun ByteArray.single(): Byte
{\n return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n
else -> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one
element.\n */\npublic fun ShortArray.single(): Short {\n return when (size) {\n 0 -> throw
NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\npublic fun IntArray.single(): Int {\n
return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -
> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single
element, or throws an exception if the array is empty or has more than one element.\n */\npublic fun
LongArray.single(): Long {\n return when (size) {\n 0 -> throw NoSuchElementException("Array is
empty.")\n 1 -> this[0]\n else -> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one
element.\n */\npublic fun FloatArray.single(): Float {\n return when (size) {\n 0 -> throw
NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\npublic fun DoubleArray.single():
Double {\n return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 ->
this[0]\n else -> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\npublic
fun BooleanArray.single():
Boolean {\n return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 ->
this[0]\n else -> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\npublic

```

```

fun CharArray.single(): Char {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun <T> Array<out T>.single(predicate: (T) -> Boolean): T {
    var single: T? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as T

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun ByteArray.single(predicate: (Byte) -> Boolean): Byte {
    var single: Byte? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Byte

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun ShortArray.single(predicate: (Short) -> Boolean): Short {
    var single: Short? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Short

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun IntArray.single(predicate: (Int) -> Boolean): Int {
    var single: Int? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw
                IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Int

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun LongArray.single(predicate: (Long) -> Boolean): Long {
    var single: Long? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw
                IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Long

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun FloatArray.single(predicate: (Float) -> Boolean): Float {
    var single: Float? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw
                IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Float

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun DoubleArray.single(predicate: (Double) -> Boolean): Double {
    var single: Double? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw
                IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw
        NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Double

/** Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element. */
public inline fun BooleanArray.single(predicate: (Boolean) -> Boolean): Boolean {
    var single: Boolean? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw
                IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw
        NoSuchElementException("Array contains no element matching the predicate.")
}

@Suppress("UNCHECKED_CAST")
return single as Boolean

```

```

found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw
IllegalArgumentException("Array contains more than one matching element.")\n            single = element\n        }\n        found = true\n    }\n    if (!found) throw NoSuchElementException("Array contains no element matching
the
predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as Boolean\n}\n\n/**\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n */\npublic inline fun CharArray.single(predicate: (Char) -> Boolean): Char {\n    var single: Char? =
null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw
IllegalArgumentException("Array contains more than one matching element.")\n            single = element\n        }\n        found = true\n    }\n    if (!found) throw NoSuchElementException("Array contains no element matching
the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as Char\n}\n\n/**\n * Returns single
element, or `null` if the array is empty or has more than one element.\n */\npublic fun <T> Array<out
T>.singleOrNull(): T? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element,
or `null` if the array is empty or has more than one element.\n */\npublic fun ByteArray.singleOrNull(): Byte? {\n
return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more
than one element.\n */\npublic fun ShortArray.singleOrNull(): Short? {\n    return if (size == 1) this[0] else
null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n */\npublic
fun IntArray.singleOrNull(): Int? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or
`null` if the array is empty or has more than one element.\n */\npublic fun LongArray.singleOrNull(): Long? {\n
return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more
than one element.\n */\npublic fun FloatArray.singleOrNull(): Float? {\n    return if (size == 1) this[0] else
null\n}\n\n/**\n * Returns single element, or `null` if the array
is empty or has more than one element.\n */\npublic fun DoubleArray.singleOrNull(): Double? {\n    return if (size
== 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one
element.\n */\npublic fun BooleanArray.singleOrNull(): Boolean? {\n    return if (size == 1) this[0] else
null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n */\npublic
fun CharArray.singleOrNull(): Char? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single
element matching the given [predicate], or `null` if element was not found or more than one element was found.\n
*/\npublic inline fun <T> Array<out T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single: T? = null\n
var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n
            single = element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or
`null` if element was not found or more than one element was found.\n */\npublic inline fun
ByteArray.singleOrNull(predicate: (Byte) -> Boolean): Byte? {\n    var single: Byte? = null\n    var found = false\n
for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n
            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun ShortArray.singleOrNull(predicate: (Short) -> Boolean): Short? {\n    var single: Short? = null\n    var
found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n
            single = element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun IntArray.singleOrNull(predicate: (Int) -> Boolean): Int? {\n    var single: Int? = null\n    var found = false\n
for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n
            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun LongArray.singleOrNull(predicate: (Long) -> Boolean): Long? {\n    var single: Long? = null\n    var
found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n
            single

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= element\n      found = true\n
    }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the single element matching the given
[predicate], or `null` if element was not found or more than one element was found.\n */\npublic inline fun
FloatArray.singleOrNull(predicate: (Float) -> Boolean): Float? {\n    var single: Float? = null\n    var found = false\n
for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n
found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun DoubleArray.singleOrNull(predicate: (Double) -> Boolean): Double? {\n    var single: Double? = null\n
var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n
single = element\n
found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun BooleanArray.singleOrNull(predicate: (Boolean) -> Boolean): Boolean? {\n    var single: Boolean? =
null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n
single = element\n
found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun CharArray.singleOrNull(predicate: (Char) -> Boolean): Char? {\n    var single: Char? = null\n    var found = false\n
for (element in this) {\n        if (predicate(element)) {\n            if
(found) return null\n
single = element\n
found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is
negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n */\npublic fun <T> Array<out
T>.drop(n: Int): List<T> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return
takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun ByteArray.drop(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException\n * \n * @sample samples.collections.Collections.Transformations.drop\n */\npublic fun
ShortArray.drop(n: Int): List<Short> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
return takeLast(((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n]
elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun IntArray.drop(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun LongArray.drop(n: Int): List<Long> {\n
require(n >= 0) { \"Requested element count $n is less
than zero.\" }\n    return takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements
except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun FloatArray.drop(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun DoubleArray.drop(n: Int): List<Double> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
*/

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IllegalArgumentException if [n] is negative.\n
 * \n * @sample samples.collections.Collections.Transformations.drop\n *^\npublic fun BooleanArray.drop(n: Int):
List<Boolean> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun CharArray.drop(n: Int): List<Char> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun <T> Array<out T>.dropLast(n: Int): List<T>
{\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return
take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun ByteArray.dropLast(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun ShortArray.dropLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun IntArray.dropLast(n: Int): List<Int> {\n  require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n  return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun LongArray.dropLast(n: Int): List<Long> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun FloatArray.dropLast(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n]
is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n *^\npublic fun
DoubleArray.dropLast(n: Int): List<Double> {\n  require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n  return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic fun BooleanArray.dropLast(n: Int):
List<Boolean> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic
fun CharArray.dropLast(n: Int): List<Char> {\n  require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n  return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^\npublic inline fun <T> Array<out
T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n  for (index in lastIndex downTo 0) {\n    if
(!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns

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a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ByteArray.dropLastWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n    for (index in lastIndex downTo 0) {\n        if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy
the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline
fun ShortArray.dropLastWhile(predicate: (Short) -> Boolean): List<Short> {\n    for (index in lastIndex downTo 0)
{\n        if (!predicate(this[index])) {\n            return take(index + 1)\n        }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun IntArray.dropLastWhile(predicate:
(Int) -> Boolean): List<Int> {\n    for (index in lastIndex downTo 0) {\n        if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun
LongArray.dropLastWhile(predicate: (Long) -> Boolean): List<Long> {\n    for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n        return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n/**\n *
Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun FloatArray.dropLastWhile(predicate:
(Float) -> Boolean): List<Float> {\n    for (index in lastIndex downTo 0) {\n        if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun DoubleArray.dropLastWhile(predicate:
(Double) -> Boolean): List<Double> {\n    for (index in lastIndex downTo 0) {\n        if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun
BooleanArray.dropLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n    for (index in lastIndex
downTo 0) {\n        if (!predicate(this[index])) {\n            return take(index + 1)\n        }\n    }\n    return
emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun
CharArray.dropLastWhile(predicate: (Char) -> Boolean): List<Char> {\n    for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n        return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T> Array<out
T>.dropWhile(predicate: (T) -> Boolean): List<T> {\n    var yielding = false\n    val list = ArrayList<T>()\n    for
(item in this)\n        if (yielding)\n            list.add(item)\n        else if (!predicate(item)) {\n            list.add(item)\n
yielding = true\n        }\n    return list\n}\n\n/**\n * Returns a list containing all elements except first elements that
satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic
inline fun ByteArray.dropWhile(predicate: (Byte) -> Boolean): List<Byte> {\n    var yielding = false\n    val list =
ArrayList<Byte>()\n    for (item in this)\n        if (yielding)\n            list.add(item)\n        else if (!predicate(item)) {\n            list.add(item)\n
yielding = true\n        }\n    return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ShortArray.dropWhile(predicate:
(Short) -> Boolean): List<Short> {\n    var yielding = false\n    val list = ArrayList<Short>()\n    for (item in this)\n
if (yielding)\n        list.add(item)\n    else if (!predicate(item)) {\n        list.add(item)\n        yielding =
true\n    }\n    return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the
given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun

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IntArray.dropWhile(predicate: (Int) -> Boolean): List<Int> {\n  var yielding = false\n  val list =
ArrayList<Int>()\n  for (item in this)\n
    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n      yielding =
true\n    }\n  return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the
given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n */\npublic inline fun
LongArray.dropWhile(predicate: (Long) -> Boolean): List<Long> {\n  var yielding = false\n  val list =
ArrayList<Long>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic inline fun FloatArray.dropWhile(predicate:
(Float) -> Boolean): List<Float> {\n  var yielding = false\n
  val list = ArrayList<Float>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if
(!predicate(item)) {\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n/**\n * Returns a list
containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic inline fun DoubleArray.dropWhile(predicate:
(Double) -> Boolean): List<Double> {\n  var yielding = false\n  val list = ArrayList<Double>()\n  for (item in
this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n
yielding = true\n    }\n  return list\n}\n\n/**\n * Returns a list containing all elements except first elements that
satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n */\npublic
inline fun BooleanArray.dropWhile(predicate:
(Boolean) -> Boolean): List<Boolean> {\n  var yielding = false\n  val list = ArrayList<Boolean>()\n  for (item
in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n
yielding = true\n    }\n  return list\n}\n\n/**\n * Returns a list containing all elements except first elements that
satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n */\npublic
inline fun CharArray.dropWhile(predicate: (Char) -> Boolean): List<Char> {\n  var yielding = false\n  val list =
ArrayList<Char>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n
list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic
inline
fun <T> Array<out T>.filter(predicate: (T) -> Boolean): List<T> {\n  return filterTo(ArrayList<T>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun ByteArray.filter(predicate: (Byte) -> Boolean):
List<Byte> {\n  return filterTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements
matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline
fun ShortArray.filter(predicate: (Short) -> Boolean): List<Short> {\n  return filterTo(ArrayList<Short>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun IntArray.filter(predicate: (Int) -> Boolean):
List<Int> {\n  return filterTo(ArrayList<Int>(), predicate)\n}\n\n/**\n * Returns
a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun LongArray.filter(predicate: (Long) ->
Boolean): List<Long> {\n  return filterTo(ArrayList<Long>(), predicate)\n}\n\n/**\n * Returns a list containing
only elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic
inline fun FloatArray.filter(predicate: (Float) -> Boolean): List<Float> {\n  return
filterTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
DoubleArray.filter(predicate: (Double) -> Boolean): List<Double> {\n  return filterTo(ArrayList<Double>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */

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*^public inline fun BooleanArray.filter(predicate: (Boolean) -> Boolean): List<Boolean> {\n  return
filterTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *^public inline fun
CharArray.filter(predicate: (Char) -> Boolean): List<Char> {\n  return filterTo(ArrayList<Char>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n *^public
inline fun <T> Array<out T>.filterIndexed(predicate: (index: Int, T) -> Boolean): List<T> {\n  return
filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n *^public
inline fun ByteArray.filterIndexed(predicate: (index: Int, Byte) -> Boolean): List<Byte> {\n  return
filterIndexedTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n *^public inline fun ShortArray.filterIndexed(predicate:
(index: Int, Short) -> Boolean): List<Short> {\n  return filterIndexedTo(ArrayList<Short>(), predicate)\n}\n\n/**\n *
Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function
that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the
element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n *^public inline fun
IntArray.filterIndexed(predicate: (index: Int, Int) -> Boolean): List<Int> {\n  return
filterIndexedTo(ArrayList<Int>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n *^public inline fun LongArray.filterIndexed(predicate:
(index: Int, Long) -> Boolean): List<Long> {\n  return filterIndexedTo(ArrayList<Long>(), predicate)\n}\n\n/**\n *
Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element
itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n *^public inline fun FloatArray.filterIndexed(predicate:
(index: Int, Float) -> Boolean): List<Float> {\n  return filterIndexedTo(ArrayList<Float>(), predicate)\n}\n\n/**\n *
Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n *
@sample samples.collections.Collections.Filtering.filterIndexed\n *^public inline fun
DoubleArray.filterIndexed(predicate: (index: Int, Double) -> Boolean): List<Double> {\n  return
filterIndexedTo(ArrayList<Double>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result
of predicate evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n *^public
inline fun BooleanArray.filterIndexed(predicate: (index: Int, Boolean) -> Boolean): List<Boolean> {\n  return
filterIndexedTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing only elements
matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the element
itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n *^public inline fun CharArray.filterIndexed(predicate:
(index: Int, Char) -> Boolean): List<Char> {\n  return filterIndexedTo(ArrayList<Char>(), predicate)\n}\n\n/**\n *
Appends all elements matching the given [predicate] to the given [destination].\n * @param [predicate] function that
takes the index of an element and the element itself\n * and returns the result of predicate evaluation

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on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun
<T, C : MutableCollection<in T>> Array<out T>.filterIndexedTo(destination: C, predicate: (index: Int, T) ->
Boolean): C {\n  forEachIndexed { index, element ->\n    if (predicate(index, element))
destination.add(element)\n  }\n  return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <C : MutableCollection<in Byte>>
ByteArray.filterIndexedTo(destination: C, predicate: (index: Int, Byte) -> Boolean): C {\n  forEachIndexed {
index, element ->\n    if (predicate(index, element)) destination.add(element)\n  }\n  return
destination\n}\n\n/**\n *
Appends all elements matching the given [predicate] to the given [destination].\n * @param [predicate] function
that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the
element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <C :
MutableCollection<in Short>> ShortArray.filterIndexedTo(destination: C, predicate: (index: Int, Short) ->
Boolean): C {\n  forEachIndexed { index, element ->\n    if (predicate(index, element))
destination.add(element)\n  }\n  return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterIndexedTo(destination:
C, predicate: (index: Int, Int) -> Boolean): C {\n  forEachIndexed { index, element ->\n    if (predicate(index,
element)) destination.add(element)\n  }\n  return destination\n}\n\n/**\n * Appends all elements matching the
given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and
the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <C : MutableCollection<in Long>>
LongArray.filterIndexedTo(destination: C, predicate: (index: Int, Long) -> Boolean): C {\n  forEachIndexed {
index, element ->\n    if (predicate(index, element)) destination.add(element)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <C : MutableCollection<in Float>>
FloatArray.filterIndexedTo(destination: C, predicate: (index: Int, Float) -> Boolean): C {\n  forEachIndexed {
index, element ->\n    if (predicate(index, element)) destination.add(element)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n
*\n * \npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterIndexedTo(destination: C, predicate:
(index: Int, Double) -> Boolean): C {\n  forEachIndexed { index, element ->\n    if (predicate(index, element))
destination.add(element)\n
}\n  return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given
[destination].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <C : MutableCollection<in
Boolean>> BooleanArray.filterIndexedTo(destination: C, predicate: (index: Int, Boolean) -> Boolean): C {\n
forEachIndexed { index, element ->\n    if (predicate(index, element)) destination.add(element)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n

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@sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in
Byte>> ByteArray.filterNotTo(destination: C, predicate: (Byte) -> Boolean): C {\n for
(element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all
elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Short>>
ShortArray.filterNotTo(destination: C, predicate: (Short) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterNotTo(destination: C, predicate: (Int) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Long>>
LongArray.filterNotTo(destination: C, predicate: (Long) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Float>>
FloatArray.filterNotTo(destination: C, predicate: (Float) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Double>>
DoubleArray.filterNotTo(destination: C, predicate: (Double) -> Boolean): C {\n for (element
in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements
not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Boolean>>
BooleanArray.filterNotTo(destination: C, predicate: (Boolean) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Char>>
CharArray.filterNotTo(destination: C, predicate: (Char) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <T, C : MutableCollection<in T>>
Array<out T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n for (element in this) if
(predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Byte>> ByteArray.filterTo(destination: C, predicate: (Byte) ->
Boolean): C {\n for (element in this) if (predicate(element)) destination.add(element)\n return
destination\n}\n\n**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in
Short>> ShortArray.filterTo(destination: C, predicate: (Short) -> Boolean): C {\n for (element in this) if
(predicate(element))
destination.add(element)\n return destination\n}\n\n**\n * Appends all elements matching the given [predicate]
to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun
<C : MutableCollection<in Int>> IntArray.filterTo(destination: C, predicate: (Int) -> Boolean): C {\n for (element
in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n**\n * Appends all elements
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Long>>

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LongArray.filterTo(destination: C, predicate: (Long) -> Boolean): C {
    for (element in this) if (predicate(element)) destination.add(element)
    return destination
}

@sample samples.collections.Collections.Filtering.filterTo
public inline fun <C : MutableCollection<in Float>> FloatArray.filterTo(destination: C, predicate: (Float) -> Boolean): C {
    for (element in this) if (predicate(element)) destination.add(element)
    return destination
}

@sample samples.collections.Collections.Filtering.filterTo
public inline fun <C : MutableCollection<in Double>> DoubleArray.filterTo(destination: C, predicate: (Double) -> Boolean): C {
    for (element in this) if (predicate(element)) destination.add(element)
    return destination
}

@sample samples.collections.Collections.Filtering.filterTo
public inline fun <C : MutableCollection<in Boolean>> BooleanArray.filterTo(destination: C, predicate: (Boolean) -> Boolean): C {
    for (element in this) if (predicate(element)) destination.add(element)
    return destination
}

@sample samples.collections.Collections.Filtering.filterTo
public inline fun <C : MutableCollection<in Char>> CharArray.filterTo(destination: C, predicate: (Char) -> Boolean): C {
    for (element in this) if (predicate(element)) destination.add(element)
    return destination
}

Returns a list containing elements at indices in the specified [indices] range.
public fun <T> Array<out T>.slice(indices: IntRange): List<T> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun ByteArray.slice(indices: IntRange): List<Byte> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun ShortArray.slice(indices: IntRange): List<Short> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun IntArray.slice(indices: IntRange): List<Int> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun LongArray.slice(indices: IntRange): List<Long> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun FloatArray.slice(indices: IntRange): List<Float> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun DoubleArray.slice(indices: IntRange): List<Double> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun BooleanArray.slice(indices: IntRange): List<Boolean> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at indices in the specified [indices] range.
public fun CharArray.slice(indices: IntRange): List<Char> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Returns a list containing elements at specified [indices].
public fun <T> Array<out T>.slice(indices: Iterable<Int>): List<T> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<T>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

Returns a list containing elements at specified [indices].
public fun ByteArray.slice(indices: Iterable<Int>): List<Byte> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Byte>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

Returns a list containing elements at specified [indices].
public fun ShortArray.slice(indices: Iterable<Int>): List<Short> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Short>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

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* Returns a list containing elements at specified [indices].\n */\npublic fun IntArray.slice(indices: Iterable<Int>):
List<Int> {\n    val size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list =
ArrayList<Int>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n * Returns
a list containing elements at specified [indices].\n */\npublic fun LongArray.slice(indices: Iterable<Int>):
List<Long> {\n    val size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list =
ArrayList<Long>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n */\npublic fun FloatArray.slice(indices: Iterable<Int>):
List<Float> {\n    val size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list =
ArrayList<Float>(size)\n    for
(index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n * Returns a list containing elements at
specified [indices].\n */\npublic fun DoubleArray.slice(indices: Iterable<Int>): List<Double> {\n    val size =
indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list = ArrayList<Double>(size)\n
for (index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n * Returns a list containing
elements at specified [indices].\n */\npublic fun BooleanArray.slice(indices: Iterable<Int>): List<Boolean> {\n    val
size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list =
ArrayList<Boolean>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n */\npublic fun CharArray.slice(indices: Iterable<Int>):
List<Char> {\n    val size = indices.collectionSizeOrDefault(10)\n
if (size == 0) return emptyList()\n    val list = ArrayList<Char>(size)\n    for (index in indices) {\n
list.add(get(index))\n    }\n    return list\n}\n\n/**\n * Returns an array containing elements of this array at specified
[indices].\n */\npublic fun <T> Array<T>.sliceArray(indices: Collection<Int>): Array<T> {\n    val result =
arrayOfNulls(this, indices.size)\n    var targetIndex = 0\n    for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing elements
of this array at specified [indices].\n */\npublic fun ByteArray.sliceArray(indices: Collection<Int>): ByteArray {\n
val result = ByteArray(indices.size)\n    var targetIndex = 0\n    for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing elements
of this array at specified [indices].\n */\npublic fun ShortArray.sliceArray(indices:
Collection<Int>): ShortArray {\n    val result = ShortArray(indices.size)\n    var targetIndex = 0\n    for
(sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n *
Returns an array containing elements of this array at specified [indices].\n */\npublic fun
IntArray.sliceArray(indices: Collection<Int>): IntArray {\n    val result = IntArray(indices.size)\n    var targetIndex
= 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return
result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n */\npublic fun
LongArray.sliceArray(indices: Collection<Int>): LongArray {\n    val result = LongArray(indices.size)\n    var
targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return
result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n */\npublic
fun FloatArray.sliceArray(indices: Collection<Int>): FloatArray {\n    val result = FloatArray(indices.size)\n    var
targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return
result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n */\npublic fun
DoubleArray.sliceArray(indices: Collection<Int>): DoubleArray {\n    val result = DoubleArray(indices.size)\n
var targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n
return result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n */\npublic fun
BooleanArray.sliceArray(indices: Collection<Int>): BooleanArray {\n    val result = BooleanArray(indices.size)\n
var targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n
return result\n}\n\n/**\n * Returns an array containing
elements of this array at specified [indices].\n */\npublic fun CharArray.sliceArray(indices: Collection<Int>):
CharArray {\n    val result = CharArray(indices.size)\n    var targetIndex = 0\n    for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing elements

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at indices in the specified [indices] range.\n */\npublic fun <T> Array<T>.sliceArray(indices: IntRange): Array<T>
{\n if (indices.isEmpty()) return copyOfRange(0, 0)\n return copyOfRange(indices.start, indices.endInclusive +
1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic fun
ByteArray.sliceArray(indices: IntRange): ByteArray {\n if (indices.isEmpty()) return ByteArray(0)\n return
copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices
in the specified [indices] range.\n */\npublic fun ShortArray.sliceArray(indices:
IntRange): ShortArray {\n if (indices.isEmpty()) return ShortArray(0)\n return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices]
range.\n */\npublic fun IntArray.sliceArray(indices: IntRange): IntArray {\n if (indices.isEmpty()) return
IntArray(0)\n return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array
containing elements at indices in the specified [indices] range.\n */\npublic fun LongArray.sliceArray(indices:
IntRange): LongArray {\n if (indices.isEmpty()) return LongArray(0)\n return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices]
range.\n */\npublic fun FloatArray.sliceArray(indices: IntRange): FloatArray {\n if (indices.isEmpty()) return
FloatArray(0)\n return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic fun
DoubleArray.sliceArray(indices: IntRange): DoubleArray {\n if (indices.isEmpty()) return DoubleArray(0)\n
return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at
indices in the specified [indices] range.\n */\npublic fun BooleanArray.sliceArray(indices: IntRange): BooleanArray
{\n if (indices.isEmpty()) return BooleanArray(0)\n return copyOfRange(indices.start, indices.endInclusive +
1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic fun
CharArray.sliceArray(indices: IntRange): CharArray {\n if (indices.isEmpty()) return CharArray(0)\n return
copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns a list containing first [n] elements.\n *
\n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\npublic fun <T> Array<out T>.take(n: Int): List<T> {\n require(n >= 0) { "Requested element count $n is less
than zero." }\n if (n == 0) return emptyList()\n if (n >= size) return toList()\n if (n == 1) return
listOf(this[0])\n var count = 0\n val list = ArrayList<T>(n)\n for (item in this) {\n list.add(item)\n if
(++count == n)\n break\n }\n return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
\n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\npublic fun ByteArray.take(n: Int): List<Byte> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if (n == 0) return emptyList()\n if (n >=
size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<Byte>(n)\n for
(item in this) {\n list.add(item)\n if (++count
== n)\n break\n }\n return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
\n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\npublic fun ShortArray.take(n: Int): List<Short> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if (n == 0) return emptyList()\n if (n >=
size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<Short>(n)\n for
(item in this) {\n list.add(item)\n if (++count == n)\n
break\n }\n return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
\n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\npublic fun IntArray.take(n: Int): List<Int> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if (n == 0)
return emptyList()\n if (n >= size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list
= ArrayList<Int>(n)\n for (item in this) {\n list.add(item)\n if (++count == n)\n
break\n }\n return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
\n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\npublic fun LongArray.take(n: Int): List<Long> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if

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(n == 0) return emptyList()\n if (n >= size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<Long>(n)\n for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n
 * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic fun FloatArray.take(n: Int):
List<Float> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return
emptyList()\n if (n >= size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list =
ArrayList<Float>(n)\n for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n
return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic fun
DoubleArray.take(n: Int): List<Double> {\n require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n if (n == 0) return emptyList()\n if (n >= size) return toList()\n if (n == 1) return listOf(this[0])\n var
count = 0\n val list = ArrayList<Double>(n)\n for (item in this)\n {\n list.add(item)\n if (++count == n)\n
break\n }\n return list\n}\n\n/**\n * Returns a list
containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic fun BooleanArray.take(n: Int): List<Boolean> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n if (n >=
size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<Boolean>(n)\n
for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n return list\n}\n\n/**\n *
Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n */\npublic fun CharArray.take(n: Int): List<Char>
{\n require(n >= 0) { \"Requested element
count $n is less than zero.\" }\n if (n == 0) return emptyList()\n if (n >= size) return toList()\n if (n == 1)
return listOf(this[0])\n var count = 0\n val list = ArrayList<Char>(n)\n for (item in this) {\n
list.add(item)\n if (++count == n)\n break\n }\n return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic fun <T> Array<out T>.takeLast(n: Int): List<T>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val
size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list =
ArrayList<T>(n)\n for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns
a list containing last [n] elements.\n * \n * @throws IllegalArgumentException
if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic fun
ByteArray.takeLast(n: Int): List<Byte> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return
listOf(this[size - 1])\n val list = ArrayList<Byte>(n)\n for (index in size - n until size)\n
list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic fun ShortArray.takeLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<Short>(n)\n
for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing
last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic fun IntArray.takeLast(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<Int>(n)\n
for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing
last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic fun LongArray.takeLast(n: Int): List<Long> {\n

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require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return
listOf(this[size - 1])\n val list = ArrayList<Long>(n)\n for (index in size - n until size)\n
list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\n\npublic fun FloatArray.takeLast(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<Float>(n)\n
for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\n\npublic fun DoubleArray.takeLast(n: Int): List<Double> {\n require(n >= 0) { \"Requested element count $n is
less than zero.\" }\n if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n ==
1) return listOf(this[size - 1])\n val list = ArrayList<Double>(n)\n for (index in size - n until size)\n
list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\n\npublic fun BooleanArray.takeLast(n: Int):
List<Boolean> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return
emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list
= ArrayList<Boolean>(n)\n for (index in size - n until size)\n list.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n
*/\n\npublic fun
CharArray.takeLast(n: Int): List<Char> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return
listOf(this[size - 1])\n val list = ArrayList<Char>(n)\n for (index in size - n until size)\n
list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last elements satisfying the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*/\n\npublic inline fun <T>
Array<out T>.takeLastWhile(predicate: (T) -> Boolean): List<T> {\n for (index in lastIndex downTo 0) {\n if
(!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n *
\n * @sample samples.collections.Collections.Transformations.take\n
*/\n\npublic inline fun
ByteArray.takeLastWhile(predicate: (Byte) -> Boolean): List<Byte> {\n for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a
list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\n\npublic inline fun ShortArray.takeLastWhile(predicate:
(Short) -> Boolean): List<Short> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n
return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*/\n\npublic inline fun IntArray.takeLastWhile(predicate: (Int) -> Boolean): List<Int> {\n for (index in lastIndex
downTo 0) {\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return
toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*/\n\npublic inline fun LongArray.takeLastWhile(predicate:
(Long) -> Boolean): List<Long> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n
return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*/\n\npublic inline fun FloatArray.takeLastWhile(predicate: (Float) -> Boolean): List<Float> {\n for (index in lastIndex
downTo 0) {\n if (!predicate(this[index])) {\n

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    return drop(index + 1)\n    }\n    }\n    return toList()\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic
inline fun DoubleArray.takeLastWhile(predicate: (Double) -> Boolean): List<Double> {\n    for (index in lastIndex
downTo 0) {\n        if (!predicate(this[index])) {\n            return drop(index + 1)\n        }\n    }\n    return
toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun
BooleanArray.takeLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n    for (index in lastIndex
downTo 0) {\n        if (!predicate(this[index])) {\n            return drop(index + 1)\n        }\n    }\n    return
toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic inline fun CharArray.takeLastWhile(predicate: (Char) -> Boolean): List<Char> {\n    for (index in
lastIndex downTo 0) {\n        if (!predicate(this[index])) {\n            return drop(index + 1)\n        }\n    }\n    return
toList()\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun <T> Array<out
T>.takeWhile(predicate: (T) -> Boolean): List<T> {\n    val list = ArrayList<T>()\n    for (item in this) {\n        if
(!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic inline fun ByteArray.takeWhile(predicate: (Byte) -> Boolean): List<Byte> {\n    val list =
ArrayList<Byte>()\n    for (item in this)\n        {\n            if (!predicate(item))\n                break\n            list.add(item)\n        }\n    return list\n}\n\n/**\n * Returns a list
containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun ShortArray.takeWhile(predicate:
(Short) -> Boolean): List<Short> {\n    val list = ArrayList<Short>()\n    for (item in this) {\n        if
(!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic inline fun IntArray.takeWhile(predicate: (Int) -> Boolean): List<Int> {\n    val list = ArrayList<Int>()\n
for (item in this) {\n        if (!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n
*\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic inline fun
LongArray.takeWhile(predicate: (Long) -> Boolean): List<Long> {\n    val list = ArrayList<Long>()\n    for (item
in this) {\n        if (!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a
list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun FloatArray.takeWhile(predicate:
(Float) -> Boolean): List<Float> {\n    val list = ArrayList<Float>()\n    for (item in this) {\n        if
(!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic inline fun DoubleArray.takeWhile(predicate: (Double) -> Boolean): List<Double> {\n    val list =
ArrayList<Double>()\n    for (item in this) {\n        if (!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun BooleanArray.takeWhile(predicate:
(Boolean) -> Boolean): List<Boolean> {\n    val list = ArrayList<Boolean>()\n    for (item in this) {\n        if
(!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic inline fun CharArray.takeWhile(predicate: (Char) -> Boolean): List<Char> {\n    val list =
ArrayList<Char>()\n    for (item in this) {\n        if (!predicate(item))\n            break\n        list.add(item)\n    }\n    return list\n}\n\n/**\n * Reverses elements in the

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[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic fun
ShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex,
size)\n  val midPoint = (fromIndex + toIndex) / 2\n  if (fromIndex == midPoint) return\n  var reverseIndex =
toIndex - 1\n  for (index in fromIndex until midPoint) {\n    val tmp = this[index]\n    this[index] =
this[reverseIndex]\n    this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses
elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to
reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic
fun IntArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex,
size)\n  val midPoint = (fromIndex + toIndex) / 2\n  if (fromIndex == midPoint) return\n  var reverseIndex =
toIndex - 1\n  for (index in fromIndex until midPoint) {\n    val tmp = this[index]\n    this[index] =
this[reverseIndex]\n    this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses elements of the
array in the specified range in-place.\n * \n * @param fromIndex the start of the range (inclusive)
to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic
fun LongArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  AbstractList.checkRangeIndexes(fromIndex,
toIndex, size)\n  val midPoint = (fromIndex + toIndex) / 2\n  if (fromIndex == midPoint) return\n  var
reverseIndex = toIndex - 1\n  for (index in fromIndex until midPoint) {\n    val tmp = this[index]\n
this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses
elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to
reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic fun
FloatArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex,
size)\n  val midPoint = (fromIndex + toIndex) / 2\n  if (fromIndex == midPoint) return\n  var reverseIndex =
toIndex - 1\n  for (index in fromIndex until midPoint) {\n    val tmp = this[index]\n    this[index] =
this[reverseIndex]\n    this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses elements of the
array in the specified range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n *
@param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic fun
DoubleArray.reverse(fromIndex:
Int, toIndex: Int): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  val midPoint =
(fromIndex + toIndex) / 2\n  if (fromIndex == midPoint) return\n  var reverseIndex = toIndex - 1\n  for (index in
fromIndex until midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n
this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses elements of the array in the specified
range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic fun BooleanArray.reverse(fromIndex:
Int, toIndex: Int): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  val midPoint =
(fromIndex + toIndex) / 2\n  if (fromIndex == midPoint) return\n  var reverseIndex = toIndex - 1\n  for (index in
fromIndex until midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n
this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses elements of the array in the specified

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range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *^\n@SinceKotlin("1.4")\npublic fun CharArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n
    val midPoint = (fromIndex + toIndex) / 2\n    if (fromIndex == midPoint) return\n    var reverseIndex = toIndex -
1\n    for (index in fromIndex until midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n
        this[reverseIndex] = tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun <T> Array<out T>.reversed(): List<T> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun ByteArray.reversed(): List<Byte> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun ShortArray.reversed(): List<Short> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a
list with elements in reversed order.\n
*\npublic fun IntArray.reversed(): List<Int> {\n    if (isEmpty()) return
emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements
in reversed order.\n
*\npublic fun LongArray.reversed(): List<Long> {\n    if (isEmpty()) return emptyList()\n    val
list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun FloatArray.reversed(): List<Float> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun DoubleArray.reversed(): List<Double> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun BooleanArray.reversed(): List<Boolean> {\n    if (isEmpty())
return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with
elements in reversed order.\n
*\npublic fun CharArray.reversed(): List<Char> {\n    if (isEmpty()) return
emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns an array with
elements of this array in reversed order.\n
*\npublic fun <T> Array<T>.reversedArray(): Array<T> {\n    if
(isEmpty()) return this\n    val result = arrayOfNulls(this, size)\n    val lastIndex = lastIndex\n    for (i in
0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n * Returns an array with elements of this
array in reversed order.\n
*\npublic fun ByteArray.reversedArray(): ByteArray {\n    if (isEmpty()) return this\n
val result = ByteArray(size)\n    val lastIndex = lastIndex\n    for (i in 0..lastIndex)\n        result[lastIndex - i] =
this[i]\n    return result\n}\n\n/**\n * Returns an array
with elements of this array in reversed order.\n
*\npublic fun ShortArray.reversedArray(): ShortArray {\n    if
(isEmpty()) return this\n    val result = ShortArray(size)\n    val lastIndex = lastIndex\n    for (i in 0..lastIndex)\n
result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n * Returns an array with elements of this array in reversed
order.\n
*\npublic fun IntArray.reversedArray(): IntArray {\n    if (isEmpty()) return this\n    val result =
IntArray(size)\n    val lastIndex = lastIndex\n    for (i in 0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return
result\n}\n\n/**\n * Returns an array with elements of this array in reversed
order.\n
*\npublic fun LongArray.reversedArray(): LongArray {\n    if (isEmpty()) return this\n    val result = LongArray(size)\n    val
lastIndex = lastIndex\n    for (i in 0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n *
Returns an array with elements of this array in reversed
order.\n
*\npublic fun FloatArray.reversedArray(): FloatArray {\n    if (isEmpty()) return this\n    val result =
FloatArray(size)\n    val lastIndex = lastIndex\n    for (i in 0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return
result\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n
*\npublic fun DoubleArray.reversedArray(): DoubleArray {\n    if (isEmpty()) return this\n    val result = DoubleArray(size)\n
val lastIndex = lastIndex\n    for (i in 0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n *
Returns an array with elements of this array in reversed order.\n
*\npublic fun BooleanArray.reversedArray(): BooleanArray {\n    if (isEmpty()) return this\n    val result = BooleanArray(size)\n    val
lastIndex = lastIndex\n

```



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for (i in 0..lastIndex)\n    result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n * Returns an array with
elements of this array in reversed order.\n */\npublic fun
    CharArray.reversedArray(): CharArray {\n    if (isEmpty()) return this\n    val result = CharArray(size)\n    val
lastIndex = lastIndex\n    for (i in 0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n *
Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun <T>
Array<T>.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun ByteArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly
shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun ShortArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun IntArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly
shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun LongArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.shuffle():
Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly
shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun BooleanArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun CharArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly
shuffles elements in this array in-place using the specified [random] instance as the source of randomness.\n */\n * See:
https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.4")\npublic fun <T> Array<T>.shuffle(random: Random): Unit {\n    for (i in lastIndex
downTo 1) {\n        val j = random.nextInt(i
+ 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles
elements in this array in-place using the specified [random] instance as the source of randomness.\n */\n * See:
https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.4")\npublic fun ByteArray.shuffle(random: Random): Unit {\n    for (i in lastIndex
downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n */\n * See:
https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.4")\npublic fun ShortArray.shuffle(random: Random): Unit {\n    for (i in lastIndex
downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n */\n * See:
https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.4")\npublic fun IntArray.shuffle(random: Random): Unit {\n    for (i in lastIndex
downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n */\n * See:
https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.4")\npublic fun LongArray.shuffle(random: Random): Unit {\n    for (i in lastIndex
downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles
elements in this array in-place using the specified [random] instance as the source of randomness.\n */\n * See:
https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.shuffle(random: Random): Unit {\n    for (i in lastIndex
downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the

```

source of randomness.\n * \n * See:

https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n

```
*\n@SinceKotlin("1.4")\npublic fun DoubleArray.shuffle(random: Random): Unit {\n    for (i in lastIndex\n        downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random]\n
```

instance as the source of randomness.\n * \n * See:

https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n

```
*\n@SinceKotlin("1.4")\npublic fun BooleanArray.shuffle(random: Random): Unit {\n    for (i in lastIndex\n        downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the\n
```

source of randomness.\n * \n * See:

https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n

```
*\n@SinceKotlin("1.4")\npublic fun CharArray.shuffle(random: Random): Unit {\n    for (i in lastIndex\n        downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Sorts elements in the array in-place according to natural sort order of the value returned by specified\n [selector] function.\n * \n * \n
```

The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n

```
*\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortBy(crossinline selector: (T) -> R?): Unit {\n    if\n        (size > 1) sortBy(compareBy(selector))\n}\n\n/**\n * Sorts elements in the array in-place descending according to\n
```

natural sort order of the value returned by specified [selector] function.\n * \n * The sort is `_stable_`. It means that

equal elements preserve their order relative to each other after sorting.\n * \n * \n

```
*\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortByDescending(crossinline selector: (T) -> R?): Unit {\n    if (size > 1)\n
```

```
sortByDescending(selector)\n}\n\n/**\n * Sorts elements in the array in-place descending according\n to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to\n
```

```
*\npublic fun <T : Comparable<T>> Array<out T>.sortDescending():\n
```

```
Unit {\n    sortBy(reverseOrder())\n}\n\n/**\n * Sorts elements in the array in-place descending according to their\n natural sort order.\n * \n * \n
```

```
*\npublic fun ByteArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort order.\n
```

```
*\npublic fun ShortArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * \n
```

```
* Sorts elements in the array in-place descending according to their natural sort order.\n * \n * \n
```

```
*\npublic fun IntArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Sorts elements\n in the array in-place descending according to their natural sort order.\n * \n * \n
```

```
*\npublic fun LongArray.sortDescending():\n
```

```
Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Sorts elements in the array in-place\n descending according to their natural sort order.\n
```

```
*\npublic fun FloatArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * \n
```

```
* Sorts elements in the array in-place descending according to their natural sort order.\n * \n * \n
```

```
*\npublic fun DoubleArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Sorts\n elements in the array in-place descending according to their natural sort order.\n * \n * \n
```

```
*\npublic fun CharArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Returns a list\n of all elements sorted according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements\n preserve their order relative to each other after sorting.\n * \n * \n
```

```
*\npublic fun <T : Comparable<T>> Array<out\n
```

```
T>.sorted(): List<T> {\n    return sortedArray().asList()\n}\n\n/**\n * Returns a list of all elements sorted according\n to their natural sort order.\n * \n * \n
```

```
*\npublic fun ByteArray.sorted(): List<Byte>\n {\n    return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to\n their natural sort order.\n * \n * \n
```

```
*\npublic fun ShortArray.sorted(): List<Short> {\n    return toTypedArray().apply { sort() }\n}.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n * \n * \n
```

```
*\npublic fun IntArray.sorted(): List<Int> {\n    return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all\n elements sorted according to their natural sort order.\n * \n * \n
```

```
*\npublic fun LongArray.sorted(): List<Long> {\n    return\n
```

toTypedArray().apply { sort() }.asList()\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun FloatArray.sorted(): List<Float> {\n return toTypedArray().apply { sort() }\n}.asList()\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun DoubleArray.sorted(): List<Double> {\n return toTypedArray().apply { sort() }\n}.asList()\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun CharArray.sorted(): List<Char> {\n return toTypedArray().apply { sort() }\n}.asList()\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>> Array<T>.sortedArray(): Array<T> {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun ByteArray.sortedArray(): ByteArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun ShortArray.sortedArray(): ShortArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun IntArray.sortedArray(): IntArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun LongArray.sortedArray(): LongArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun FloatArray.sortedArray(): FloatArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun DoubleArray.sortedArray(): DoubleArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun CharArray.sortedArray(): CharArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>> Array<T>.sortedArrayDescending(): Array<T> {\n if (isEmpty()) return this\n return this.copyOf().apply { sortWith(reverseOrder()) }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun ByteArray.sortedArrayDescending(): ByteArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun ShortArray.sortedArrayDescending(): ShortArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun IntArray.sortedArrayDescending(): IntArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun LongArray.sortedArrayDescending(): LongArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun FloatArray.sortedArrayDescending(): FloatArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun DoubleArray.sortedArrayDescending(): DoubleArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun CharArray.sortedArrayDescending(): CharArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according the specified `[comparator]`. \n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T> Array<out T>.sortedArrayWith(comparator: Comparator<in T>): Array<out T>

```

{\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortBy(selector) }\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector]\n function.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after\n sorting.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortedBy(crossinline selector: (T) -> R?): List<T> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n ByteArray.sortedBy(crossinline selector: (Byte) -> R?): List<Byte> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted according to natural\n sort order of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n ShortArray.sortedBy(crossinline selector: (Short) -> R?): List<Short>\n {\n  return sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural\n sort order of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n IntArray.sortedBy(crossinline selector: (Int) -> R?): List<Int> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted according to natural\n sort order of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n LongArray.sortedBy(crossinline selector: (Long) -> R?): List<Long> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural\n sort order of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n FloatArray.sortedBy(crossinline selector: (Float) -> R?): List<Float> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n DoubleArray.sortedBy(crossinline selector: (Double) -> R?): List<Double> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>\n BooleanArray.sortedBy(crossinline selector: (Boolean) -> R?): List<Boolean> {\n  return\n sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order\n of the value returned by specified [selector] function.\n * \n * @sample\n samples.collections.Collections.Sorting.sortedBy\n */\n\n/**\n * Returns a list of all elements sorted descending according to natural\n sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal\n elements preserve their order relative to each other after sorting.\n */\npublic inline fun <T, R : Comparable<R>>\n Array<out T>.sortedByDescending(crossinline selector: (T) -> R?): List<T> {\n  return\n sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending\n according to natural sort order of the value returned by specified [selector] function.\n */\n\n/**\n * Returns a list of all elements sorted\n descending according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline\n fun <R : Comparable<R>> ByteArray.sortedByDescending(crossinline selector: (Byte) -> R?): List<Byte>\n {\n  return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted\n descending according to natural sort order of the value returned by specified [selector] function.\n */\n\n/**\n * Returns a list of all elements sorted descending\n according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline\n fun <R : Comparable<R>> ShortArray.sortedByDescending(crossinline selector: (Short) -> R?): List<Short> {\n  return\n sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending

```

according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline fun <R : Comparable<R>> IntArray.sortedByDescending(crossinline selector: (Int) -> R?): List<Int> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline fun <R : Comparable<R>> LongArray.sortedByDescending(crossinline selector: (Long) -> R?): List<Long> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline fun <R : Comparable<R>> FloatArray.sortedByDescending(crossinline selector: (Float) -> R?): List<Float> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline fun <R : Comparable<R>> DoubleArray.sortedByDescending(crossinline selector: (Double) -> R?): List<Double> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline fun <R : Comparable<R>> BooleanArray.sortedByDescending(crossinline selector: (Boolean) -> R?): List<Boolean> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n */\npublic inline fun <R : Comparable<R>> CharArray.sortedByDescending(crossinline selector: (Char) -> R?): List<Char> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>> Array<out T>.sortedDescending(): List<T> {\n return sortedWith(reverseOrder())\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun ByteArray.sortedDescending(): List<Byte> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun ShortArray.sortedDescending(): List<Short> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun IntArray.sortedDescending(): List<Int> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun LongArray.sortedDescending(): List<Long> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun FloatArray.sortedDescending(): List<Float> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun DoubleArray.sortedDescending(): List<Double> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun CharArray.sortedDescending(): List<Char> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T> Array<out T>.sortedWith(comparator: Comparator<in T>): List<T> {\n return sortedArrayWith(comparator).asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun ByteArray.sortedWith(comparator: Comparator<in Byte>): List<Byte> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun ShortArray.sortedWith(comparator: Comparator<in Short>): List<Short> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun IntArray.sortedWith(comparator: Comparator<in Int>): List<Int> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun LongArray.sortedWith(comparator: Comparator<in Long>): List<Long> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun FloatArray.sortedWith(comparator:

Comparator<in Float>): List<Float> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun DoubleArray.sortedWith(comparator: Comparator<in Double>): List<Double> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun BooleanArray.sortedWith(comparator: Comparator<in Boolean>): List<Boolean> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun CharArray.sortedWith(comparator: Comparator<in Char>): List<Char> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun <T> Array<out T>.asList(): List<T>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun ByteArray.asList(): List<Byte>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun ShortArray.asList(): List<Short>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun IntArray.asList(): List<Int>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun LongArray.asList(): List<Long>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun FloatArray.asList(): List<Float>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun DoubleArray.asList(): List<Double>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun BooleanArray.asList(): List<Boolean>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun CharArray.asList(): List<Char>\n\n/**\n * Returns `true` if the two specified arrays are *deeply* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * If two corresponding elements are nested arrays, they are also compared deeply.\n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * The elements of other types are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic expect infix fun <T> Array<out T>.contentDeepEquals(other: Array<out T>): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *deeply* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The specified arrays are also considered deeply equal if both are `null`.\n * \n * If two corresponding elements are nested arrays, they are also compared deeply.\n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * The elements of other types are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun <T> Array<out T>?.contentDeepEquals(other: Array<out T>?): Boolean\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic expect fun <T> Array<out T>.contentDeepHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n */\n@SinceKotlin("1.4")\npublic expect fun <T> Array<out T>?.contentDeepHashCode(): Int\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `[...]` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n */\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic expect fun <T> Array<out T>.contentDeepToString(): String\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `[...]` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n */\n@SinceKotlin("1.4")\npublic expect fun <T> Array<out T>?.contentDeepToString(): String\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n */

* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n

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*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun <T>
Array<out T>.contentEquals(other: Array<out T>): Boolean\n\n**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4
to avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
expect infix fun ByteArray.contentEquals(other: ByteArray): Boolean\n\n**\n * Returns `true` if the two specified
arrays are *structurally*
equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The
elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means
that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4 to avoid
deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect
infix fun ShortArray.contentEquals(other: ShortArray): Boolean\n\n**\n * Returns `true` if the two specified arrays
are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n *
\n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers
it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4
to avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince
= "1.4")\npublic expect infix fun IntArray.contentEquals(other: IntArray): Boolean\n\n**\n * Returns `true` if the
two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements
in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For
floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun
LongArray.contentEquals(other: LongArray): Boolean\n\n**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself
and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun
FloatArray.contentEquals(other: FloatArray): Boolean\n\n**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4
to avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
expect infix fun DoubleArray.contentEquals(other: DoubleArray): Boolean\n\n**\n * Returns `true` if the two
specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements
in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For
floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun
BooleanArray.contentEquals(other: BooleanArray): Boolean\n\n**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4
to avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic

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expect infix fun CharArray.contentEquals(other:

CharArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun <T> Array<out T>?.contentEquals(other: Array<out T>?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are

structurally equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun ByteArray?.contentEquals(other: ByteArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are

structurally equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun ShortArray?.contentEquals(other: ShortArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are

structurally equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun IntArray?.contentEquals(other: IntArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are

structurally equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun LongArray?.contentEquals(other: LongArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are

structurally equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals]

function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun CharArray?.contentEquals(other: CharArray?): Boolean\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun <T> Array<out T>.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun ByteArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince


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= `1.4`)npublic expect fun ShortArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the
contents of this array as if it is [List].\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun
IntArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun
LongArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun
FloatArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based
on the contents of this array as if it is [List].\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun
DoubleArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun
BooleanArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun
CharArray.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@SinceKotlin(`1.4`)npublic expect fun <T> Array<out T>?.contentHashCode(): Int\n\n`*\n
* Returns a hash code based on the contents of this array as if it is [List].\n *^n@SinceKotlin(`1.4`)npublic
expect fun ByteArray?.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as
if it is [List].\n *^n@SinceKotlin(`1.4`)npublic expect fun ShortArray?.contentHashCode(): Int\n\n`*\n
Returns a hash code based on the contents of this array as if it is [List].\n *^n@SinceKotlin(`1.4`)npublic expect
fun IntArray?.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@SinceKotlin(`1.4`)npublic expect fun LongArray?.contentHashCode(): Int\n\n`*\n
Returns a hash code based on the contents of this array as if it is [List].\n *^n@SinceKotlin(`1.4`)npublic expect fun
FloatArray?.contentHashCode(): Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is
[List].\n *^n@SinceKotlin(`1.4`)npublic expect fun DoubleArray?.contentHashCode():
Int\n\n`*\n * Returns a hash code based on the contents of this array as if it is [List].\n
*^n@SinceKotlin(`1.4`)npublic expect fun BooleanArray?.contentHashCode(): Int\n\n`*\n * Returns a hash
code based on the contents of this array as if it is [List].\n *^n@SinceKotlin(`1.4`)npublic expect fun
CharArray?.contentHashCode(): Int\n\n`*\n * Returns a string representation of the contents of the specified array
as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun <T>
Array<out T>.contentToString(): String\n\n`*\n * Returns a string representation of the contents of the specified
array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince
= `1.4`)npublic expect fun ByteArray.contentToString(): String\n\n`*\n * Returns a string representation of the
contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *^n@Deprecated(`"Use Kotlin compiler 1.4 to
avoid deprecation warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic
expect fun ShortArray.contentToString(): String\n\n`*\n * Returns a string representation of the contents of the
specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*^n@Deprecated(`"Use Kotlin compiler 1.4 to avoid deprecation
warning.`")n@SinceKotlin(`1.1`)n@DeprecatedSinceKotlin(hiddenSince = `1.4`)npublic expect fun

```

IntArray.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun LongArray.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun FloatArray.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun DoubleArray.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun BooleanArray.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun CharArray.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun <T> Array<out T>?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun ByteArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun ShortArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun IntArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun LongArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun FloatArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun DoubleArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun BooleanArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @SinceKotlin("1.4")\n public expect fun CharArray?.contentToString(): String\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param

endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @since Kotlin("1.3")\n * public expect fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): Array<T>\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @since Kotlin("1.3")\n * public expect fun ByteArray.copyInto(destination: ByteArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ByteArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @since Kotlin("1.3")\n * public expect fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ShortArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @since Kotlin("1.3")\n * public expect fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): IntArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is

out of the [destination] array indices range.\n * \n * @return the [destination] array.\n

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*\n@SinceKotlin("1.3")\npublic expect fun LongArray.copyInto(destination: LongArray, destinationOffset:
Int = 0, startIndex: Int = 0, endIndex: Int = size): LongArray\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even
specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy
to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param
startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive)
of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],\n * or when that index is out of
the [destination] array indices range.\n * \n * @return the [destination] array.\n */\n@SinceKotlin("1.3")\npublic
expect fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int
= size): FloatArray\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n *
\n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the
destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the
[destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy,
0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of this array indices or when `startIndex > endIndex`.\n
* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the
specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return
the [destination] array.\n */\n@SinceKotlin("1.3")\npublic expect fun DoubleArray.copyInto(destination:
DoubleArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): DoubleArray\n\n/**\n * Copies
this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same
array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n *
@param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to
copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n *
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the
subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index
is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n */\n@SinceKotlin("1.3")\npublic
expect fun BooleanArray.copyInto(destination: BooleanArray, destinationOffset:
Int = 0, startIndex: Int = 0, endIndex: Int = size): BooleanArray\n\n/**\n * Copies this array or its subrange into the
[destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even
specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy
to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by
default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param
endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange
doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of
the [destination] array indices range.\n * \n * @return the [destination] array.\n */\n@SinceKotlin("1.3")\npublic
expect fun CharArray.copyInto(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int
= size): CharArray\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOfOf\n
*/\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T>

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Array<T>.copyOf(): Array<T>\n\n**\n * Returns new array which is a copy of the original array.\n * \n *
 @sample samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun ByteArray.copyOf():
 ByteArray\n\n**\n * Returns new array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun ShortArray.copyOf():
 ShortArray\n\n**\n * Returns new array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun IntArray.copyOf(): IntArray\n\n**\n
 * Returns new array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun LongArray.copyOf():
 LongArray\n\n**\n * Returns new array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun FloatArray.copyOf():
 FloatArray\n\n**\n * Returns new
 array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun DoubleArray.copyOf():
 DoubleArray\n\n**\n * Returns new array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun BooleanArray.copyOf():
 BooleanArray\n\n**\n * Returns new array which is a copy of the original array.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.copyOf\n */\npublic expect fun CharArray.copyOf():
 CharArray\n\n**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n *
 The copy is either truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the
 size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of
 the original array, the extra elements in the copy array are filled with zero values.\n * \n
 * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun
 ByteArray.copyOf(newSize: Int): ByteArray\n\n**\n * Returns new array which is a copy of the original array,
 resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n
 * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If
 [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero
 values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic
 expect fun ShortArray.copyOf(newSize: Int): ShortArray\n\n**\n * Returns new array which is a copy of the
 original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values
 if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is
 truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the
 copy array are filled with zero values.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun
 IntArray.copyOf(newSize: Int): IntArray\n\n**\n * Returns new array which is a copy of the original array, resized
 to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n * \n * -
 If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize]
 is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n * \n *
 @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun
 LongArray.copyOf(newSize: Int): LongArray\n\n**\n * Returns new array which is a copy of the original array,
 resized to the given [newSize].\n * The
 copy is either truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the
 size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of
 the original array, the extra elements in the copy array are filled with zero values.\n * \n * @sample
 samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun
 FloatArray.copyOf(newSize: Int): FloatArray\n\n**\n * Returns new array which is a copy of the original array,
 resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n
 * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If
 [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero

values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun DoubleArray.copyOf(newSize: Int): DoubleArray\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with `false` values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `false` values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun BooleanArray.copyOf(newSize: Int): BooleanArray\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with null char (`\u0000`) values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with null char (`\u0000`) values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n */\npublic expect fun CharArray.copyOf(newSize: Int): CharArray\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with `null` values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `null` values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizingCopyOf\n */\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T> Array<T>.copyOf(newSize: Int): Array<T?>\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T> Array<T>.copyOfRange(fromIndex: Int, toIndex: Int): Array<T>\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray

if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
 IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun
 FloatArray.copyOfRange(fromIndex:
 Int, toIndex: Int): FloatArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original
 array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the
 range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
 [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
 [toIndex].\n */\npublic expect fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray\n\n/**\n *
 Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start
 of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
 */\npublic expect fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray\n\n/**\n * Returns a
 new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the
 range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
 */\npublic expect fun
 CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray\n\n/**\n * Fills this array or its subrange with the
 specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n *
 @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
 */\n@SinceKotlin("1.3")\npublic expect fun
 <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or
 its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill,
 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n *
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
 array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
 */\n@SinceKotlin("1.3")\npublic expect fun
 ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its
 subrange with the specified [element] value.\n * \n * @param fromIndex the
 start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
 to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
 or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
 than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun
 ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its
 subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill,
 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n *
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
 array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
 */\n@SinceKotlin("1.3")\npublic expect fun
 IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or
 its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill,
 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n *
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
 array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
 */\n@SinceKotlin("1.3")\npublic expect fun
 LongArray.fill(element: Long, fromIndex: Int = 0, toIndex: Int =
 size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex
 the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill,
 size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]
 is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater

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    than [toIndex].\n * \n @SinceKotlin("1.3")\n public expect fun FloatArray.fill(element: Float, fromIndex: Int = 0,
    toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n *
    @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
    (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
    than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
    greater than [toIndex].\n * \n @SinceKotlin("1.3")\n public expect fun DoubleArray.fill(element: Double,
    fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element]
    value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end
    of the range (exclusive) to fill, size of this array by default.\n * \n
    * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
    array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
    *\n @SinceKotlin("1.3")\n public expect fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int
    = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param
    fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
    to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
    or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
    than [toIndex].\n * \n @SinceKotlin("1.3")\n public expect fun CharArray.fill(element: Char, fromIndex: Int = 0,
    toIndex: Int = size): Unit\n\n/**\n * Returns the range of valid indices for the array.\n * \n public val <T>
    Array<out T>.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for
    the array.\n * \n public val ByteArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the
    range of valid indices for the array.\n * \n public val ShortArray.indices: IntRange\n    get() = IntRange(0,
    lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n public val IntArray.indices: IntRange\n
    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n public val
    LongArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the
    array.\n * \n public val FloatArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range
    of valid indices for the array.\n * \n public val DoubleArray.indices: IntRange\n    get() = IntRange(0,
    lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n public val
    BooleanArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for
    the array.\n * \n public val CharArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns `true`
    if the array is empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun <T> Array<out T>.isEmpty(): Boolean
    {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n @kotlin.internal.InlineOnly\n
    public inline fun ByteArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is
    empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun ShortArray.isEmpty(): Boolean {\n    return size ==
    0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun
    IntArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n
    @kotlin.internal.InlineOnly\n public inline fun LongArray.isEmpty(): Boolean {\n    return size
    == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun
    FloatArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n
    @kotlin.internal.InlineOnly\n public inline fun DoubleArray.isEmpty(): Boolean {\n    return size ==
    0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun
    BooleanArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n * \n
    @kotlin.internal.InlineOnly\n public inline fun CharArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
    * Returns `true` if the array is not empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun <T> Array<out
    T>.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n * \n
    @kotlin.internal.InlineOnly\n public inline fun ByteArray.isNotEmpty(): Boolean {\n    return
    !isEmpty()\n}\n\n/**\n * Returns
    `true` if the array is not empty.\n * \n @kotlin.internal.InlineOnly\n public inline fun ShortArray.isNotEmpty():
    Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n
    
```


FloatArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\npublic expect operator fun DoubleArray.plus(elements: Collection<Double>): DoubleArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\npublic expect operator fun BooleanArray.plus(elements: Collection<Boolean>): BooleanArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\npublic expect operator fun CharArray.plus(elements: Collection<Char>): CharArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator fun <T> Array<T>.plus(elements: Array<out T>): Array<T>\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun ByteArray.plus(elements: ByteArray): ByteArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun ShortArray.plus(elements: ShortArray): ShortArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun IntArray.plus(elements: IntArray): IntArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun LongArray.plus(elements: LongArray): LongArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun FloatArray.plus(elements: FloatArray): FloatArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun DoubleArray.plus(elements: DoubleArray): DoubleArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun BooleanArray.plus(elements: BooleanArray): BooleanArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\npublic expect operator fun CharArray.plus(elements: CharArray): CharArray\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n */\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T> Array<T>.addElement(element: T): Array<T>\n\n/**\n * Sorts the array in-place.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic expect fun IntArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic expect fun LongArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic expect fun ByteArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic expect fun ShortArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic expect fun DoubleArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic expect fun FloatArray.sort(): Unit\n\n/**\n * Sorts the array in-place according to the natural order of its elements.\n */\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortArrayOfComparable\n */\npublic expect fun <T : Comparable<T>> Array<out T>.sort(): Unit\n\n/**\n * Sorts a range in the array in-place.\n */\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n */\n * \n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n */\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n */\n * \n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable\n */\n@SinceKotlin("1.4")\npublic expect fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n */\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n */\n * \n * @param toIndex the end of the range (exclusive) to sort, size of this array

by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts a range in the array in-place.
 @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts a range in the array in-place.
 @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts a range in the array in-place.
 @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts a range in the array in-place.
 @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts a range in the array in-place.
 @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts a range in the array in-place.
 @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 @SinceKotlin("1.4")
 public expect fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit
 Sorts elements of the array in the specified range in-place.
 The elements are sorted descending according to their natural sort order.
 The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.
 @param fromIndex the start of the range (inclusive) to sort.
 @param toIndex the end of the range (exclusive) to sort.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 @SinceKotlin("1.4")
 public fun <T> Comparable<T>> Array<out T>.sortDescending(fromIndex: Int, toIndex: Int): Unit
 {
 sortWith(reverseOrder(), fromIndex, toIndex)
 }
 Sorts elements of the array in the specified range in-place.
 The elements are sorted descending according to their natural sort order.
 @param fromIndex the start of the range (inclusive) to sort.
 @param toIndex the end of the range (exclusive) to sort.
 @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.

if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
 IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 ByteArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex,
 toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are
 sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive)
 to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException
 if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
 IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 ShortArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n
 reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The
 elements are sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the
 range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
 @throws IllegalArgumentException
 if [fromIndex] is greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 IntArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex,
 toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted
 descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to
 sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if
 [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
 IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 LongArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n
 reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The
 elements are sorted descending according
 to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex
 the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than
 zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
 greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 FloatArray.sortDescending(fromIndex: Int, toIndex:
 Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array
 in the specified range in-place.\n * The elements are sorted descending according to their natural sort order.\n * \n *
 @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to
 sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
 size of this array.\n * @throws IllegalArgumentException if [fromIndex]
 is greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 DoubleArray.sortDescending(fromIndex: Int,
 toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of
 the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
 order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
 (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
 greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *
 @SinceKotlin("1.4")\npublic fun
 CharArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n
 sort(fromIndex, toIndex)\n reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts the array in-place according to the
 order specified by the given [comparator].\n * \n * The sort is `_stable_`. It means that
 equal elements preserve their order relative to each other after sorting.\n *
 @public expect fun <T> Array<out
 T>.sortWith(comparator: Comparator<in T>): Unit\n\n/**\n * Sorts a range in the array in-place with the given
 [comparator].\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other
 after sorting.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex
 the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException
 if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws

IllegalArgumentExcep`tion` if [fromIndex] is greater than [toIndex].
`public expect fun <T> Array<out T>.sortWith(comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Unit`
`* Returns an array of Boolean containing all of the elements of this generic array.`
`public fun Array<out Boolean>.toBooleanArray():`
`BooleanArray {`
`return BooleanArray(size) { index -> this[index] }`
`}`
`* Returns an array of Byte containing all of the elements of this generic array.`
`public fun Array<out Byte>.toByteArray(): ByteArray {`
`return ByteArray(size) { index -> this[index] }`
`}`
`* Returns an array of Char containing all of the elements of this generic array.`
`public fun Array<out Char>.toCharArray(): CharArray {`
`return CharArray(size) { index -> this[index] }`
`}`
`* Returns an array of Double containing all of the elements of this generic array.`
`public fun Array<out Double>.toDoubleArray(): DoubleArray {`
`return DoubleArray(size) { index -> this[index] }`
`}`
`* Returns an array of Float containing all of the elements of this generic array.`
`public fun Array<out Float>.toFloatArray(): FloatArray {`
`return FloatArray(size) { index -> this[index] }`
`}`
`* Returns an array of Int containing all of the elements of this generic array.`
`public fun Array<out Int>.toIntArray(): IntArray {`
`return IntArray(size) { index -> this[index] }`
`}`
`* Returns an array of Long containing all of the elements of this generic array.`
`public fun Array<out Long>.toLongArray(): LongArray {`
`return LongArray(size) { index -> this[index] }`
`}`
`* Returns an array of Short containing all of the elements of this generic array.`
`public fun Array<out Short>.toShortArray(): ShortArray {`
`return ShortArray(size) { index -> this[index] }`
`}`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun ByteArray.toTypedArray(): Array<Byte>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun ShortArray.toTypedArray(): Array<Short>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun IntArray.toTypedArray():`
`Array<Int>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun LongArray.toTypedArray(): Array<Long>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun FloatArray.toTypedArray():`
`Array<Float>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun DoubleArray.toTypedArray():`
`Array<Double>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun BooleanArray.toTypedArray():`
`Array<Boolean>`
`* Returns a *typed* object array containing all of the elements of this primitive array.`
`public expect fun CharArray.toTypedArray(): Array<Char>`
`* Returns a [Map] containing key-value pairs provided by [transform] function`
`* applied to elements of the given array.`
`* If any of two pairs would have the same key the last one gets added to the map.`
`* The returned map preserves the entry iteration order of the original array.`
`@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives`
`public inline fun <T, K, V> Array<out T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {`
`val capacity = mapCapacity(size).coerceAtLeast(16)`
`return associateTo(LinkedHashMap<K, V>(capacity), transform)}`
`}`
`* Returns a [Map] containing key-value pairs provided by [transform] function`
`* applied to elements of the given array.`
`* If any of two pairs would have the same key the last one gets added to the map.`
`* The returned map preserves the entry iteration order of the original array.`
`@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives`
`public inline fun <K, V> ByteArray.associate(transform: (Byte) -> Pair<K, V>): Map<K, V> {`
`val capacity = mapCapacity(size).coerceAtLeast(16)`
`return associateTo(LinkedHashMap<K, V>(capacity), transform)}`
`}`
`* Returns a [Map] containing key-value pairs provided by [transform] function`
`* applied to elements of the given array.`
`* If any of two pairs would have the same key the last one gets added to the map.`
`* The returned map preserves the entry iteration order of the original array.`
`@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives`
`public inline fun <K, V> ShortArray.associate(transform: (Short) -> Pair<K, V>): Map<K, V> {`
`val capacity =`

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mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
IntArray.associate(transform: (Int) -> Pair<K, V>): Map<K, V> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
LongArray.associate(transform: (Long) -> Pair<K, V>): Map<K, V> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
FloatArray.associate(transform: (Float) -> Pair<K, V>): Map<K, V> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
DoubleArray.associate(transform: (Double) -> Pair<K,
V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return
associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing key-value
pairs provided by [transform] function\n * applied to elements of the given array.\n * \n * If any of two pairs would
have the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order
of the original array.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V> BooleanArray.associate(transform: (Boolean) -> Pair<K, V>): Map<K, V> {\n val
capacity = mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned
map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
CharArray.associate(transform: (Char) -> Pair<K, V>): Map<K, V> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <T, K>
Array<out T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K,
T>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by
the key\n * returned from [keySelector] function applied to each element.\n * \n * If any two elements would have
the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the

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entry iteration order of the original array.\n * \n * @sample

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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
ByteArray.associateBy(keySelector: (Byte) -> K): Map<K, Byte> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Byte>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned
map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
ShortArray.associateBy(keySelector: (Short) -> K): Map<K, Short> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Short>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
IntArray.associateBy(keySelector: (Int) -> K): Map<K, Int> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K,
Int>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by
the key\n * returned from [keySelector] function applied to each element.\n * \n * If any two elements would have
the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the
entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
LongArray.associateBy(keySelector: (Long) -> K): Map<K, Long> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Long>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n *
\n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
FloatArray.associateBy(keySelector: (Float) -> K): Map<K, Float> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Float>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
DoubleArray.associateBy(keySelector: (Double) -> K): Map<K, Double> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n
return associateByTo(LinkedHashMap<K, Double>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map]
containing the elements from the given array indexed by the key\n * returned from [keySelector] function applied to
each element.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets
added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
\n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
BooleanArray.associateBy(keySelector: (Boolean) -> K): Map<K, Boolean> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Boolean>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key

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associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n\n/**\n * Returns a [Map]
containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of
the given array.\n * \n * If any two elements would
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves
the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n\npublic inline
fun <K, V> DoubleArray.associateBy(keySelector: (Double) -> K, valueTransform: (Double) -> V): Map<K, V>
{\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K,
V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map] containing the values provided by
[valueTransform] and indexed by [keySelector] functions applied to elements of the given array.\n * \n * If any two
elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The
returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n\npublic inline fun <K, V> BooleanArray.associateBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) -
> V): Map<K, V> {\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map]
containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of
the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets
added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n\npublic inline fun <K, V> CharArray.associateBy(keySelector: (Char) -> K, valueTransform: (Char) -> V):
Map<K, V> {\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any
two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n\npublic inline fun <T,
K, M : MutableMap<in K, in T>> Array<out T>.associateByTo(destination: M, keySelector: (T) -> K): M {\n  for
(element in this) {\n    destination.put(keySelector(element), element)\n  }\n  return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any
two elements would have the same key returned by [keySelector] the last
one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n\npublic inline fun <K, M :
MutableMap<in K, in Byte>> ByteArray.associateByTo(destination: M, keySelector: (Byte) -> K): M {\n  for
(element in this) {\n    destination.put(keySelector(element), element)\n  }\n  return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any
two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n\npublic inline fun <K,
M : MutableMap<in K, in Short>> ShortArray.associateByTo(destination: M, keySelector: (Short) -> K): M {\n  for
(element in this) {\n    destination.put(keySelector(element),
element)\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-
value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n *
and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the
last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n\npublic inline fun <K, M :
MutableMap<in K, in Int>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K): M {\n  for (element

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in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned

by [keySelector] the last one gets added to the map.\n * \n * @sample

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Long>> LongArray.associateByTo(destination: M, keySelector: (Long) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
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@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Float>> FloatArray.associateByTo(destination: M, keySelector: (Float) -> K): M {\n for (element in this) {\n destination.put(keySelector(element),
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element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Double>> DoubleArray.associateByTo(destination: M, keySelector: (Double) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
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would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample

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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Boolean>> BooleanArray.associateByTo(destination: M, keySelector: (Boolean) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
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@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Char>> CharArray.associateByTo(destination: M, keySelector: (Char) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
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\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateByTo(destination: M, keySelector: (Byte) -> K, valueTransform: (Byte) -> V): M {\n for (element in this) {\n
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destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> ShortArray.associateByTo(destination: M, keySelector: (Short) -> K, valueTransform: (Short) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K, valueTransform:
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(Int) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateByTo(destination: M, keySelector: (Long) -> K, valueTransform: (Long) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateByTo(destination: M, keySelector: (Float) -> K, valueTransform: (Float) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateByTo(destination: M, keySelector: (Double) -> K, valueTransform: (Double) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
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```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> BooleanArray.associateByTo(destination: M, keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n } \n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
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function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateByTo(destination: M, keySelector: (Char) -> K, valueTransform: (Char) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateTo(destination: M, transform: (Byte) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> ShortArray.associateTo(destination: M, transform: (Short) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateTo(destination: M, transform: (Int) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateTo(destination: M, transform: (Long) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateTo(destination: M, transform: (Float) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateTo(destination: M, transform: (Double) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *
\n * public inline fun <K, V,

```

M : MutableMap<in K, in V>> BooleanArray.associateTo(destination: M, transform: (Boolean) -> Pair<K, V>): M
{
    for (element in this) {
        destination += transform(element)
    }
    return destination
}

Populates and returns the [destination] mutable map with key-value pairs provided by [transform] function
applied to each element of the given array. If any of two pairs would have the same key the last one gets
added to the map.

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo
public inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateTo(destination: M, transform:
(Char) -> Pair<K, V>): M {
    for (element in this) {
        destination += transform(element)
    }
    return
destination
}

Returns a [Map] where keys are elements from the given array and values are produced
by the [valueSelector] function applied to each element. If any two elements are equal, the last one gets
added to the map. The returned map preserves the entry iteration order of the original array.

@sample samples.collections.Collections.Transformations.associateWith
@SinceKotlin("1.4")
public inline
fun <K, V> Array<out K>.associateWith(valueSelector: (K) -> V): Map<K, V> {
    val result =
    LinkedHashMap<K, V>(mapCapacity(size).coerceAtLeast(16))
    return associateWithTo(result,
valueSelector)
}

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector]
function applied to each element. If any two elements are equal, the last one gets added to the map. The
returned map preserves the entry iteration order of the original array.

@sample samples.collections.Collections.Transformations.associateWith
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V>
ByteArray.associateWith(valueSelector: (Byte) -> V): Map<Byte, V> {
    val result = LinkedHashMap<Byte,
V>(mapCapacity(size).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector]
function applied to each element. If any two elements are equal, the last one gets added to the map. The
returned map preserves the entry iteration order of the original array.

@sample
samples.collections.Collections.Transformations.associateWith
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public
inline fun <V> ShortArray.associateWith(valueSelector: (Short) -> V): Map<Short, V> {
    val result =
    LinkedHashMap<Short, V>(mapCapacity(size).coerceAtLeast(16))
    return associateWithTo(result,
valueSelector)
}

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector]
function applied to each element. If any two elements are equal, the last one gets added to the map. The
returned map preserves the entry iteration order of the original array.

@sample samples.collections.Collections.Transformations.associateWith
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V>
IntArray.associateWith(valueSelector: (Int) -> V): Map<Int, V> {
    val result = LinkedHashMap<Int,
V>(mapCapacity(size).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

Returns a [Map] where keys are elements from the
given array and values are produced by the [valueSelector] function applied to each element. If any two
elements are equal, the last one gets added to the map. The returned map preserves the entry iteration order
of the original array.

@sample samples.collections.Collections.Transformations.associateWith
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V>
LongArray.associateWith(valueSelector: (Long) -> V): Map<Long, V> {
    val result = LinkedHashMap<Long,
V>(mapCapacity(size).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector]
function applied to each element. If any two elements are equal, the last one gets added to the map. The
returned map preserves the entry iteration order of the original array.

@sample
samples.collections.Collections.Transformations.associateWith
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V>
FloatArray.associateWith(valueSelector: (Float) -> V): Map<Float, V> {
    val result = LinkedHashMap<Float,
V>(mapCapacity(size).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

Returns a

```

[Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element. If any two elements are equal, the last one gets added to the map. The returned map preserves the entry iteration order of the original array. @sample

```

samples.collections.Collections.Transformations.associateWith
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V>
DoubleArray.associateWith(valueSelector: (Double) -> V): Map<Double, V> {n val result =
LinkedHashMap<Double, V>(mapCapacity(size).coerceAtLeast(16))n return associateWithTo(result,
valueSelector)n}n/n/**n * Returns

```

a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element. If any two elements are equal, the last one gets added to the map. The returned map preserves the entry iteration order of the original array. @sample

```

samples.collections.Collections.Transformations.associateWith
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V>
BooleanArray.associateWith(valueSelector: (Boolean) -> V): Map<Boolean, V> {n val result =
LinkedHashMap<Boolean, V>(mapCapacity(size).coerceAtLeast(16))n return associateWithTo(result,
valueSelector)n}n/n/**n * Returns a [Map] where keys are elements from the given array and values are
produced by the [valueSelector] function applied to each element. If any two elements are equal, the last one
gets added to the map. The returned map preserves the entry iteration order of the original array.
@sample samples.collections.Collections.Transformations.associateWith
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V>
CharArray.associateWith(valueSelector: (Char) -> V): Map<Char, V> {n val result = LinkedHashMap<Char,
V>(mapCapacity(size).coerceAtMost(128)).coerceAtLeast(16))n return associateWithTo(result,
valueSelector)n}n/n/**n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array, where key is the element itself and value is provided by the [valueSelector] function
applied to that key. If any two elements are equal, the last one overwrites the former value in the map.
@sample samples.collections.Collections.Transformations.associateWithTo
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic
inline fun <K, V, M : MutableMap<in K, in V>> Array<out K>.associateWithTo(destination: M, valueSelector: (K)
-> V): M {n for (element in this) {n destination.put(element, valueSelector(element))n
}n return destinationn}n/n/**n * Populates and returns the [destination] mutable map with key-value pairs
for each element of the given array, where key is the element itself and value is provided by the [valueSelector]
function applied to that key. If any two elements are equal, the last one overwrites the former value in the
map.
@sample samples.collections.Collections.Transformations.associateWithTo
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Byte, in V>>
ByteArray.associateWithTo(destination: M, valueSelector: (Byte) -> V): M {n for (element in this) {n
destination.put(element, valueSelector(element))n }n return destinationn}n/n/**n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array, where key is the element
itself and value is provided by the [valueSelector] function applied to that key.
n * If any two elements are equal, the last one overwrites the former value in the map.
@sample
samples.collections.Collections.Transformations.associateWithTo
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Short, in V>>
ShortArray.associateWithTo(destination: M, valueSelector: (Short) -> V): M {n for (element in this) {n
destination.put(element, valueSelector(element))n }n return destinationn}n/n/**n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array, where key is the element
itself and value is provided by the [valueSelector] function applied to that key.
n * If any two elements are equal, the last one overwrites the former value in the map.
@sample
samples.collections.Collections.Transformations.associateWithTo
*/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Int, in V>>
IntArray.associateWithTo(destination:

```

```

M, valueSelector: (Int) -> V): M {
    for (element in this) {
        destination.put(element,
valueSelector(element))
    }
    return destination
}

Populates and returns the [destination] mutable
map with key-value pairs for each element of the given array,
where key is the element itself and value is
provided by the [valueSelector] function applied to that key.
If any two elements are equal, the last one
overwrites the former value in the map.

@sample
samples.collections.Collections.Transformations.associateWithTo

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <V, M : MutableMap<in Long, in V>>
LongArray.associateWithTo(destination: M, valueSelector: (Long) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

Populates and returns the
[destination] mutable map with key-value pairs for each element
of the given array,
where key is the element itself and value is provided by the [valueSelector] function applied
to that key.
If any two elements are equal, the last one overwrites the former value in the map.

@sample
samples.collections.Collections.Transformations.associateWithTo

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <V, M : MutableMap<in Float, in V>>
FloatArray.associateWithTo(destination: M, valueSelector: (Float) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,
where key is the element
itself and value is provided by the [valueSelector] function applied to that key.
If any two elements are
equal, the last one overwrites the former value in the map.

@sample
samples.collections.Collections.Transformations.associateWithTo

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <V, M : MutableMap<in Double, in
V>> DoubleArray.associateWithTo(destination: M, valueSelector: (Double) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

Populates and returns
the [destination] mutable map with key-value pairs for each element of the given array,
where key is the element
itself and value is provided by the [valueSelector] function applied to that key.
If any two elements are
equal, the last one overwrites the former value in the map.

@sample
samples.collections.Collections.Transformations.associateWithTo

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <V, M : MutableMap<in Boolean, in
V>> BooleanArray.associateWithTo(destination: M, valueSelector: (Boolean) -> V): M {
    for (element in this)
{
        destination.put(element,
valueSelector(element))
    }
    return destination
}

Populates and returns the [destination] mutable
map with key-value pairs for each element of the given array,
where key is the element itself and value is
provided by the [valueSelector] function applied to that key.
If any two elements are equal, the last one
overwrites the former value in the map.

@sample
samples.collections.Collections.Transformations.associateWithTo

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <V, M : MutableMap<in Char, in V>>
CharArray.associateWithTo(destination: M, valueSelector: (Char) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

Appends all elements to
the given [destination] collection.

public fun <T, C : MutableCollection<in T>> Array<out
T>.toCollection(destination: C): C {
    for (item in this) {
        destination.add(item)
    }
    return destination
}

Appends all elements to the given [destination] collection.

public fun
<C : MutableCollection<in Byte>> ByteArray.toCollection(destination: C): C {
    for (item in this) {
        destination.add(item)
    }
    return destination
}

Appends all elements to the given [destination]
collection.

public fun <C : MutableCollection<in Short>> ShortArray.toCollection(destination: C): C {
    for
(item in this) {
        destination.add(item)
    }
    return destination
}

Appends all elements to the
given [destination] collection.

public fun <C : MutableCollection<in Int>> IntArray.toCollection(destination:
C): C {
    for (item in this) {
        destination.add(item)
    }
    return destination
}

Appends all
elements to the given [destination] collection.

public fun <C : MutableCollection<in Long>>

```

```

LongArray.toCollection(destination: C): C {\n  for (item in this) {\n
  destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all elements to the given [destination]
collection.\n */\npublic fun <C : MutableCollection<in Float>> FloatArray.toCollection(destination: C): C {\n  for
(item in this) {\n    destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all elements to the
given [destination] collection.\n */\npublic fun <C : MutableCollection<in Double>>
DoubleArray.toCollection(destination: C): C {\n  for (item in this) {\n    destination.add(item)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n */\npublic fun <C :
MutableCollection<in Boolean>> BooleanArray.toCollection(destination: C): C {\n  for (item in this) {\n
destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all elements to the given [destination]
collection.\n */\npublic fun <C : MutableCollection<in Char>> CharArray.toCollection(destination: C): C
{\n  for (item in this) {\n    destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Returns a new
[HashSet] of all elements.\n */\npublic fun <T> Array<out T>.toHashSet(): HashSet<T> {\n  return
toCollection(HashSet<T>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic
fun ByteArray.toHashSet(): HashSet<Byte> {\n  return
toCollection(HashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun ShortArray.toHashSet(): HashSet<Short> {\n  return
toCollection(HashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun IntArray.toHashSet(): HashSet<Int> {\n  return
toCollection(HashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun LongArray.toHashSet(): HashSet<Long> {\n  return
toCollection(HashSet<Long>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic
fun FloatArray.toHashSet(): HashSet<Float> {\n  return
toCollection(HashSet<Float>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun DoubleArray.toHashSet(): HashSet<Double> {\n  return
toCollection(HashSet<Double>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun BooleanArray.toHashSet(): HashSet<Boolean> {\n  return
toCollection(HashSet<Boolean>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun CharArray.toHashSet(): HashSet<Char> {\n  return
toCollection(HashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/**\n * Returns a [List] containing all
elements.\n */\npublic fun <T> Array<out T>.toList(): List<T> {\n  return when (size) {\n    0 -> emptyList()\n
1 -> listOf(this[0])\n    else -> this.toMutableList()\n  }\n}\n\n/**\n * Returns a [List] containing all
elements.\n */\npublic fun ByteArray.toList(): List<Byte> {\n
return when (size) {\n    0 -> emptyList()\n    1 -> listOf(this[0])\n    else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun ShortArray.toList(): List<Short> {\n
return when (size) {\n    0 -> emptyList()\n    1 -> listOf(this[0])\n    else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun IntArray.toList(): List<Int> {\n
return when (size) {\n    0 -> emptyList()\n    1 -> listOf(this[0])\n    else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun LongArray.toList(): List<Long> {\n
return when (size) {\n    0 -> emptyList()\n    1 -> listOf(this[0])\n    else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun FloatArray.toList(): List<Float> {\n
return when (size) {\n    0 -> emptyList()\n    1 ->
listOf(this[0])\n    else -> this.toMutableList()\n  }\n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun DoubleArray.toList(): List<Double> {\n  return when (size) {\n    0 -> emptyList()\n    1 ->
listOf(this[0])\n    else -> this.toMutableList()\n  }\n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun BooleanArray.toList(): List<Boolean> {\n  return when (size) {\n    0 -> emptyList()\n    1 ->
listOf(this[0])\n    else -> this.toMutableList()\n  }\n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun CharArray.toList(): List<Char> {\n  return when (size) {\n    0 -> emptyList()\n    1 ->

```



```

listOf(this[0])\n    else -> this.toMutableList()\n  }\n}\n\n/**\n * Returns a new [MutableList] filled with all
elements of this array.\n */\npublic fun <T> Array<out T>.toMutableList(): MutableList<T> {\n  return
ArrayList(this.asCollection())\n}\n\n/**\n * Returns a new [MutableList]
filled with all elements of this array.\n */\npublic fun ByteArray.toMutableList(): MutableList<Byte> {\n  val list
= ArrayList<Byte>(size)\n  for (item in this) list.add(item)\n  return list\n}\n\n/**\n * Returns a new
[MutableList] filled with all elements of this array.\n */\npublic fun ShortArray.toMutableList():
MutableList<Short> {\n  val list = ArrayList<Short>(size)\n  for (item in this) list.add(item)\n  return
list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun
IntArray.toMutableList(): MutableList<Int> {\n  val list = ArrayList<Int>(size)\n  for (item in this)
list.add(item)\n  return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n
*/\npublic fun LongArray.toMutableList(): MutableList<Long> {\n  val list = ArrayList<Long>(size)\n  for (item
in this) list.add(item)\n  return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this
array.\n */\npublic fun FloatArray.toMutableList(): MutableList<Float> {\n  val list = ArrayList<Float>(size)\n  for (item
in this) list.add(item)\n  return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this
array.\n */\npublic fun DoubleArray.toMutableList(): MutableList<Double> {\n  val list =
ArrayList<Double>(size)\n  for (item in this) list.add(item)\n  return list\n}\n\n/**\n * Returns a new
[MutableList] filled with all elements of this array.\n */\npublic fun BooleanArray.toMutableList():
MutableList<Boolean> {\n  val list = ArrayList<Boolean>(size)\n  for (item in this) list.add(item)\n  return
list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun
CharArray.toMutableList(): MutableList<Char> {\n  val list = ArrayList<Char>(size)\n  for (item in this)
list.add(item)\n  return list\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the
element iteration
order of the original array.\n */\npublic fun <T> Array<out T>.toSet(): Set<T> {\n  return when (size) {\n    0 ->
emptySet()\n    1 -> setOf(this[0])\n    else -> toCollection(LinkedHashSet<T>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the
original array.\n */\npublic fun ByteArray.toSet(): Set<Byte> {\n  return when (size) {\n    0 -> emptySet()\n    1 ->
setOf(this[0])\n    else -> toCollection(LinkedHashSet<Byte>(mapCapacity(size)))\n  }\n}\n\n/**\n *
Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the original array.\n
*/\npublic fun ShortArray.toSet(): Set<Short> {\n  return when (size) {\n    0 -> emptySet()\n    1 ->
setOf(this[0])\n    else -> toCollection(LinkedHashSet<Short>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a
[Set] of all elements.\n */\n * The returned set preserves
the element iteration order of the original array.\n */\npublic fun IntArray.toSet(): Set<Int> {\n  return when (size)
{\n    0 -> emptySet()\n    1 -> setOf(this[0])\n    else ->
toCollection(LinkedHashSet<Int>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The
returned set preserves the element iteration order of the original array.\n */\npublic fun LongArray.toSet():
Set<Long> {\n  return when (size) {\n    0 -> emptySet()\n    1 -> setOf(this[0])\n    else ->
toCollection(LinkedHashSet<Long>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n *
The returned set preserves the element iteration order of the original array.\n */\npublic fun FloatArray.toSet():
Set<Float> {\n  return when (size) {\n    0 -> emptySet()\n    1 -> setOf(this[0])\n    else ->
toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n *
The returned
set preserves the element iteration order of the original array.\n */\npublic fun DoubleArray.toSet(): Set<Double>
{\n  return when (size) {\n    0 -> emptySet()\n    1 -> setOf(this[0])\n    else ->
toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n *
The returned set preserves the element iteration order of the original array.\n */\npublic fun
BooleanArray.toSet(): Set<Boolean> {\n  return when (size) {\n    0 -> emptySet()\n    1 -> setOf(this[0])\n    else
-> toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n  }\n}\n\n/**\n * Returns a [Set] of all

```



```

flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.flatMapIndexed(transform: (index: Int, Byte) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element\n
* and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ShortArray.flatMapIndexed(transform: (index: Int, Short) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.flatMapIndexed(transform: (index: Int, Int) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> LongArray.flatMapIndexed(transform: (index: Int, Long) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.flatMapIndexed(transform: (index: Int, Float) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.flatMapIndexed(transform: (index: Int, Double)
-> Iterable<R>): List<R> {\n    return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a
single list of all elements yielded from results of [transform] function being invoked on each element\n * and its
index in the original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.flatMapIndexed(transform: (index: Int, Boolean) -> Iterable<R>): List<R> {\n
return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded
from results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic

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inline fun <R> CharArray.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {
    return flatMapIndexedTo(ArrayList<R>(), transform)
}

/**
 * Returns a single list of all elements yielded from
 * results of [transform] function being invoked on each element
 * and its index in the original array.
 */
@sample samples.collections.Collections.Transformations.flatMapIndexed

*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.jvm.JvmName("flatMapIndexedSequence")n@kotlin.internal.InlineOnlynpublic
inline fun <T, R> Array<out T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): List<R> {
    return flatMapIndexedTo(ArrayList<R>(), transform)
}

/**
 * Appends all elements yielded from results of
 * [transform] function being invoked on each element
 * and its index in the original array, to the given
 * [destination].
 */
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.jvm.JvmName("flatMapIndexedIterableTo")n@kotlin.internal.InlineOnlynpublic
inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Iterable<R>): C {
    var index = 0
    for (element in this) {
        val list = transform(index++,
element)
        destination.addAll(list)
    }
    return destination
}

/**
 * Appends all elements yielded from
 * results of [transform] function being invoked on each element
 * and its index in the original array, to the given
 * [destination].
 */
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.jvm.JvmName("flatMapIndexedIterableTo")n@kotlin.internal.InlineOnlynpublic
c
inline fun <R, C : MutableCollection<in R>> ByteArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Byte) -> Iterable<R>): C {
    var index = 0
    for (element in this) {
        val list = transform(index++,
element)
        destination.addAll(list)
    }
    return destination
}

/**
 * Appends all elements yielded from
 * results of [transform] function being invoked on each element
 * and its index in the original array, to the given
 * [destination].
 */
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.jvm.JvmName("flatMapIndexedIterableTo")n@kotlin.internal.InlineOnlynpublic
c
inline fun <R, C : MutableCollection<in R>> ShortArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Short) -> Iterable<R>): C {
    var index = 0
    for (element in this) {
        val list = transform(index++,
element)
        destination.addAll(list)
    }
    return destination
}

/**
 * Appends all elements yielded from results of [transform] function being
 * invoked on each element
 * and its index in the original array, to the given [destination].
 */
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.jvm.JvmName("flatMapIndexedIterableTo")n@kotlin.internal.InlineOnlynpublic
c
inline fun <R, C : MutableCollection<in R>> IntArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Int) -> Iterable<R>): C {
    var index = 0
    for (element in this) {
        val list = transform(index++, element)
        destination.addAll(list)
    }
    return destination
}

/**
 * Appends all elements yielded from results of
 * [transform] function being invoked on each element
 * and its index in the original array, to the given
 * [destination].
 */
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.jvm.JvmName("flatMapIndexedIterableTo")n@kotlin.internal.InlineOnlynpublic
c
inline fun <R, C : MutableCollection<in R>> LongArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Long) -> Iterable<R>): C {
    var index = 0
    for (element in this) {
        val list = transform(index++,
element)
        destination.addAll(list)
    }
    return destination
}

/**
 * Appends all elements yielded from
 * results of [transform] function being invoked on each element
 * and its index in the original array, to the given
 * [destination].
 */
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> FloatArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Float) -> Iterable<R>): C {\n    var index = 0\n    for (element in this)
{\n        val list = transform(index++, element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each element\n * and its index
in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> DoubleArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Double) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <R, C : MutableCollection<in R>> BooleanArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Boolean) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> CharArray.flatMapIndexedTo(destination: C, transform:
(index: Int, Char) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(index++, element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npu
blic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(index++, element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked
on each element of original array, to the given [destination].\n
*\npublic inline fun <T, R, C :
MutableCollection<in R>> Array<out T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n
*\npublic inline fun <R, C : MutableCollection<in R>>
ByteArray.flatMapTo(destination: C, transform: (Byte) -> Iterable<R>): C {\n    for (element in this) {\n        val list
= transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements
yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n
*\npublic inline fun <R, C : MutableCollection<in R>> ShortArray.flatMapTo(destination:
C, transform: (Short) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n
*\npublic inline
fun <R, C : MutableCollection<in R>> IntArray.flatMapTo(destination: C, transform: (Int) -> Iterable<R>): C {\n
for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return

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destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
LongArray.flatMapTo(destination: C, transform: (Long) -> Iterable<R>): C {\n    for (element in this) {\n        val
list = transform(element)\n        destination.addAll(list)\n    }\n}
return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked
on each element of original array, to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in
R>> FloatArray.flatMapTo(destination: C, transform: (Float) -> Iterable<R>): C {\n    for (element in this) {\n
val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> DoubleArray.flatMapTo(destination: C,
transform: (Double) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array,
to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
BooleanArray.flatMapTo(destination: C, transform: (Boolean) -> Iterable<R>): C {\n    for (element in this) {\n
val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> CharArray.flatMapTo(destination: C,
transform: (Char) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequenceTo")\npublic
inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapTo(destination: C, transform: (T) ->
Sequence<R>): C {\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n
    }\n    return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given
[keySelector] function\n * applied to each element and returns a map where each group key is associated with a list
of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from
the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline
fun <T, K> Array<out T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {\n    return
groupByTo(LinkedHashMap<K, MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups elements of the original
array by the key returned by the given [keySelector] function\n *
applied to each element and returns a map where each group key is associated with a list of corresponding
elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original
array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
ByteArray.groupBy(keySelector: (Byte) -> K): Map<K, List<Byte>> {\n    return groupByTo(LinkedHashMap<K,
MutableList<Byte>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic
inline fun <K> ShortArray.groupBy(keySelector: (Short) -> K): Map<K, List<Short>> {\n    return
groupByTo(LinkedHashMap<K,
MutableList<Short>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic
inline fun <K> IntArray.groupBy(keySelector: (Int) -> K): Map<K, List<Int>> {\n    return
groupByTo(LinkedHashMap<K, MutableList<Int>>(), keySelector)\n}\n\n/**\n * Groups elements of the original

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array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample

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samples.collections.Collections.Transformations.groupBy\n
*\npublic inline fun <K> LongArray.groupBy(keySelector: (Long) -> K): Map<K, List<Long>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<Long>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n
*\npublic inline fun <K>
FloatArray.groupBy(keySelector: (Float) -> K): Map<K, List<Float>> {\n  return groupByTo(LinkedHashMap<K,
MutableList<Float>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n
*\n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n *
@sample samples.collections.Collections.Transformations.groupBy\n
*\npublic inline fun <K>
DoubleArray.groupBy(keySelector: (Double) -> K): Map<K, List<Double>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<Double>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n
*\npublic inline fun <K>
BooleanArray.groupBy(keySelector: (Boolean) -> K): Map<K, List<Boolean>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<Boolean>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array
by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each
group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration
order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n
*\npublic inline fun <K>
CharArray.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {\n  return groupByTo(LinkedHashMap<K,
MutableList<Char>>(), keySelector)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied
to each element of the original array\n * by the key returned by the given [keySelector] function applied to the
element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The
returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\npublic inline fun <T, K, V> Array<out T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K,
List<V>> {\n  return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns
a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\npublic inline fun <K, V>
ByteArray.groupBy(keySelector: (Byte) -> K, valueTransform: (Byte) -> V): Map<K, List<V>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied
to each element of the original array\n * by the key returned by the given [keySelector] function applied to the
element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The
returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
```

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samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
ShortArray.groupBy(keySelector: (Short) -> K, valueTransform: (Short) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n * and returns a map where each group key is associated
with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys
produced from
the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\npublic inline fun <K, V> IntArray.groupBy(keySelector: (Int) -> K, valueTransform: (Int) -> V): Map<K,
List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and
returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned map
preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
LongArray.groupBy(keySelector: (Long) -> K, valueTransform: (Long) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n
* Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the
key returned by the given [keySelector] function applied to the element\n * and returns a map where each group key
is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of
the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
FloatArray.groupBy(keySelector: (Float) -> K, valueTransform: (Float) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n * and returns a map where each group key is associated
with a list of corresponding values.\n
* \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n *
@sample samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
DoubleArray.groupBy(keySelector: (Double) -> K, valueTransform: (Double) -> V): Map<K, List<V>> {\n
return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups
values returned by the [valueTransform] function applied to each element of the original array\n * by the key
returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is
associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of
the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
BooleanArray.groupBy(keySelector: (Boolean) -> K, valueTransform:
(Boolean) -> V): Map<K, List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(),
keySelector, valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to
each element of the original array\n * by the key returned by the given [keySelector] function applied to the
element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The
returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
CharArray.groupBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups elements
of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts
to the [destination] map each group

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key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline fun <T, K, M : MutableMap<in K,
MutableList<T>>> Array<out T>.groupByTo(destination: M, keySelector: (T) -> K): M {\n  for (element in this)
{\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<T>() }\n
list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned
by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key
associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline fun <K, M : MutableMap<in K,
MutableList<Byte>>> ByteArray.groupByTo(destination: M, keySelector: (Byte) -> K): M {\n  for (element in
this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Byte>() }\n
list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned
by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key
associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline fun <K, M : MutableMap<in K,
MutableList<Short>>> ShortArray.groupByTo(destination: M, keySelector: (Short) -> K): M {\n  for (element in
this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Short>() }\n
list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned
by the given [keySelector] function\n * applied to each element and puts
to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline
fun <K, M : MutableMap<in K, MutableList<Int>>> IntArray.groupByTo(destination: M, keySelector: (Int) -> K):
M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) {
ArrayList<Int>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original
array by the key returned by the given [keySelector] function\n * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline
fun <K, M : MutableMap<in K, MutableList<Long>>> LongArray.groupByTo(destination: M, keySelector: (Long)
-> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list =
destination.getOrPut(key) { ArrayList<Long>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n *
Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n *
@return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * \n\n
public inline fun <K, M : MutableMap<in K, MutableList<Float>>> FloatArray.groupByTo(destination: M,
keySelector: (Float) -> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list =
destination.getOrPut(key) { ArrayList<Float>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n *
Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding
elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline fun <K, M : MutableMap<in K,
MutableList<Double>>> DoubleArray.groupByTo(destination: M, keySelector: (Double) -> K): M {\n  for
(element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) {
ArrayList<Double>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * \n\npublic inline
fun <K, M : MutableMap<in K, MutableList<Boolean>>>
BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K): M {\n  for (element in this) {\n    val
key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Boolean>() }\n

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list.add(element)\n } \n return destination\n}\n\n/**\n * Groups elements of the original array by the key returned
by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key
associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K, M : MutableMap<in K,
MutableList<Char>>> CharArray.groupByTo(destination: M, keySelector: (Char) -> K): M {\n for (element in
this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<Char>() }\n
list.add(element)\n } \n return destination\n}\n\n/**\n * Groups values returned by the [valueTransform]
function applied to each element of the original array\n * by the key returned by the given [keySelector] function
applied to the element\n * and puts to the [destination] map each group key associated with a list of corresponding
values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <T, K, V, M :
MutableMap<in K, MutableList<V>>> Array<out T>.groupByTo(destination: M, keySelector: (T) -> K,
valueTransform: (T) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n } \n return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key
associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> ByteArray.groupByTo(destination: M, keySelector: (Byte) -> K,
valueTransform: (Byte) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n } \n return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic
inline fun
<K, V, M : MutableMap<in K, MutableList<V>>> ShortArray.groupByTo(destination: M, keySelector: (Short) ->
K, valueTransform: (Short) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val
list = destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n } \n return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic
inline fun <K, V, M : MutableMap<in K, MutableList<V>>> IntArray.groupByTo(destination: M, keySelector:
(Int) -> K, valueTransform: (Int) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n
val list = destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n } \n
return destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to
the [destination] map each group key associated with a list of corresponding values.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n
*/\npublic inline fun <K, V, M : MutableMap<in K, MutableList<V>>> LongArray.groupByTo(destination: M,
keySelector: (Long) -> K, valueTransform: (Long) -> V): M {\n for (element in this) {\n val key =
keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n } \n return destination\n}\n\n/**\n * Groups values returned by the
[valueTransform]
function applied to each element of the original array\n * by the key returned by the given [keySelector] function
applied to the element\n * and puts to the [destination] map each group key associated with a list of corresponding

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values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n * \n\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> FloatArray.groupByTo(destination: M, keySelector: (Float) -> K,
valueTransform: (Float) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key
associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n * \n\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> DoubleArray.groupByTo(destination: M, keySelector: (Double) -> K,
valueTransform: (Double) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list
= destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n * \n\npublic
inline
fun <K, V, M : MutableMap<in K, MutableList<V>>> BooleanArray.groupByTo(destination: M, keySelector:
(Boolean) -> K, valueTransform: (Boolean) -> V): M {\n for (element in this) {\n val key =
keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n }\n return destination}\n}\n\n/**\n * Groups values returned by the
[valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a
list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n * \n\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> CharArray.groupByTo(destination: M, keySelector: (Char) -> K,
valueTransform: (Char) -> V): M {\n for (element in this) {\n val key =
keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n }\n return destination}\n}\n\n/**\n * Creates a [Grouping] source from an
array to be used later with one of group-and-fold operations\n * using the specified [keySelector] function to extract
a key from each element.\n * \n * @sample samples.collections.Grouping.groupingByEachCount\n
*\n\n@SinceKotlin("1.1")\n\npublic inline fun <T, K> Array<out T>.groupingBy(crossinline keySelector: (T) -> K):
Grouping<T, K> {\n return object : Grouping<T, K> {\n override fun sourceIterator(): Iterator<T> =
this@groupingBy.iterator()\n override fun keyOf(element: T): K = keySelector(element)\n }\n}\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.map\n * \n\npublic inline fun <T, R>
Array<out T>.map(transform:
(T) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n\npublic inline fun <R> ByteArray.map(transform: (Byte)
-> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n\npublic inline fun <R> ShortArray.map(transform:
(Short) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n\npublic inline fun <R> IntArray.map(transform:

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(Int) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n */\npublic inline fun <R> LongArray.map(transform: (Long) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n */\npublic inline fun <R> FloatArray.map(transform: (Float) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n */\npublic inline fun <R> DoubleArray.map(transform: (Double) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n */\npublic inline fun <R> BooleanArray.map(transform: (Boolean) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n */\npublic inline fun <R> CharArray.map(transform: (Char) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <T, R> Array<out T>.mapIndexed(transform: (index: Int, T) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <R> ByteArray.mapIndexed(transform: (index: Int, Byte) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <R> ShortArray.mapIndexed(transform: (index: Int, Short) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <R> IntArray.mapIndexed(transform: (index: Int, Int) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <R> LongArray.mapIndexed(transform: (index: Int, Long) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <R> FloatArray.mapIndexed(transform: (index: Int, Float) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <R> DoubleArray.mapIndexed(transform: (index: Int, Double) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * \n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n */\n

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returns the result of the transform applied to the element.\n *\npublic inline fun <R>
BooleanArray.mapIndexed(transform: (index: Int, Boolean) -> R): List<R> {\n  return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *\npublic inline fun <R> CharArray.mapIndexed(transform: (index: Int, Char) -> R): List<R> {\n
return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing only the non-null
results of applying
the given [transform] function\n * to each element and its index in the original array.\n * @param [transform]
function that takes the index of an element and the element itself\n * and returns the result of the transform applied
to the element.\n *\npublic inline fun <T, R : Any> Array<out T>.mapIndexedNotNull(transform: (index: Int, T) ->
R?): List<R> {\n  return mapIndexedNotNullTo(ArrayList<R>(), transform)\n}\n\n/**\n * Applies the given
[transform] function to each element and its index in the original array\n * and appends only the non-null results to
the given [destination].\n * @param [transform] function that takes the index of an element and the element itself\n
* and returns the result of the transform applied to the element.\n *\npublic inline fun <T, R : Any, C :
MutableCollection<in R>> Array<out T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?):
C {\n  forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it)
} }\n  return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the
original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the
index of an element and the element itself\n * and returns the result of the transform applied to the element.\n\n*\npublic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.mapIndexedTo(destination: C, transform:
(index: Int, T) -> R): C {\n  var index = 0\n  for (item in this)\n    destination.add(transform(index++, item))\n
return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original
array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of
an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic
inline fun <R, C : MutableCollection<in R>> ByteArray.mapIndexedTo(destination:
C, transform: (index: Int, Byte) -> R): C {\n  var index = 0\n  for (item in this)\n
destination.add(transform(index++, item))\n  return destination\n}\n\n/**\n * Applies the given [transform]
function to each element and its index in the original array\n * and appends the results to the given [destination].\n
*\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of
the transform applied to the element.\n *\npublic inline fun <R, C : MutableCollection<in R>>
ShortArray.mapIndexedTo(destination: C, transform: (index: Int, Short) -> R): C {\n  var index = 0\n  for (item in
this)\n    destination.add(transform(index++, item))\n  return destination\n}\n\n/**\n * Applies the given
[transform] function to each element and its index in the original array\n * and appends the results to the given
[destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R, C :
MutableCollection<in R>> IntArray.mapIndexedTo(destination: C, transform: (index: Int, Int) -> R): C {\n  var
index = 0\n  for (item in this)\n    destination.add(transform(index++, item))\n  return destination\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original array\n * and appends the results
to the given [destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R, C :
MutableCollection<in R>> LongArray.mapIndexedTo(destination: C, transform: (index: Int, Long) -> R): C {\n
var index = 0\n  for (item in this)\n    destination.add(transform(index++, item))\n  return
destination\n}\n\n/**\n * Applies the given [transform] function\n * to each element and its index in the original
array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of
an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic
inline fun <R, C : MutableCollection<in R>> FloatArray.mapIndexedTo(destination: C, transform: (index: Int,
Float) -> R): C {\n  var index = 0\n  for (item in this)\n    destination.add(transform(index++, item))\n  return

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destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n
 * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n */\npublic inline
fun <R, C : MutableCollection<in R>> DoubleArray.mapIndexedTo(destination: C, transform: (index: Int, Double)
-> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++,
item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in
the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes
the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n
*/\npublic inline fun <R, C : MutableCollection<in R>> BooleanArray.mapIndexedTo(destination: C, transform:
(index: Int, Boolean) -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++,
item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in
the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes
the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n
*/\npublic inline fun <R, C : MutableCollection<in
R>> CharArray.mapIndexedTo(destination: C, transform: (index: Int, Char) -> R): C {\n    var index = 0\n    for
(item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n * Returns a list
containing only the non-null results of applying the given [transform] function\n * to each element in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.mapNotNull\n */\npublic inline fun <T, R
: Any> Array<out T>.mapNotNull(transform: (T) -> R?): List<R> {\n    return mapNotNullTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Applies the given [transform] function to each element in the original array\n * and
appends only the non-null results to the given [destination].\n */\npublic inline fun <T, R : Any, C :
MutableCollection<in R>> Array<out T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {\n    forEach {
element -> transform(element)?.let { destination.add(it) } }\n    return destination\n}\n\n/**\n * Applies
the given [transform] function to each element of the original array\n * and appends the results to the given
[destination].\n */\npublic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.mapTo(destination: C,
transform: (T) -> R): C {\n    for (item in this)\n        destination.add(transform(item))\n    return
destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and
appends the results to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
ByteArray.mapTo(destination: C, transform: (Byte) -> R): C {\n    for (item in this)\n
destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> ShortArray.mapTo(destination: C, transform: (Short) -> R): C {\n    for (item in this)\n
destination.add(transform(item))\n
return destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n *
and appends the results to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
IntArray.mapTo(destination: C, transform: (Int) -> R): C {\n    for (item in this)\n
destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> LongArray.mapTo(destination: C, transform: (Long) -> R): C {\n    for (item in this)\n
destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to
each element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R,
C : MutableCollection<in R>> FloatArray.mapTo(destination: C, transform:
(Float) -> R): C {\n    for (item in this)\n        destination.add(transform(item))\n    return destination\n}\n\n
/**\n * Applies the given [transform] function to each element of the original array\n * and appends the results to the
given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> DoubleArray.mapTo(destination: C,
transform: (Double) -> R): C {\n    for (item in this)\n        destination.add(transform(item))\n    return
destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and
appends the results to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>

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BooleanArray.mapTo(destination: C, transform: (Boolean) -> R): C {\n  for (item in this)\n
destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> CharArray.mapTo(destination: C, transform: (Char) -> R): C {\n  for (item
in this)\n    destination.add(transform(item))\n  return destination\n}\n\n/**\n * Returns a lazy [Iterable] that
wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n */\npublic fun <T> Array<out T>.withIndex(): Iterable<IndexedValue<T>> {\n  return
IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n
* into an [IndexedValue] containing the index of that element and the element itself.\n */\npublic fun
ByteArray.withIndex(): Iterable<IndexedValue<Byte>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n *
Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the
index of that element and the element itself.\n */\npublic fun ShortArray.withIndex():
Iterable<IndexedValue<Short>>
{\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the
original array\n * into an [IndexedValue] containing the index of that element and the element itself.\n */\npublic
fun IntArray.withIndex(): Iterable<IndexedValue<Int>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n *
Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the
index of that element and the element itself.\n */\npublic fun LongArray.withIndex():
Iterable<IndexedValue<Long>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n */\npublic fun FloatArray.withIndex(): Iterable<IndexedValue<Float>> {\n  return
IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of
the original array\n * into an [IndexedValue] containing the index of that element and the element itself.\n */\n
public fun DoubleArray.withIndex(): Iterable<IndexedValue<Double>> {\n  return IndexingIterable {
iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an
[IndexedValue] containing the index of that element and the element itself.\n */\npublic fun
BooleanArray.withIndex(): Iterable<IndexedValue<Boolean>> {\n  return IndexingIterable { iterator()
}\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue]
containing the index of that element and the element itself.\n */\npublic fun CharArray.withIndex():
Iterable<IndexedValue<Char>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a list containing
only distinct elements from the given array.\n * \n * Among equal elements of the given array, only the first one will
be present in the resulting list.\n
* The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun <T> Array<out
T>.distinct(): List<T> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct
elements from the given array.\n * \n * The elements in the resulting list are in the same order as they were in the
source array.\n * \n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic
fun ByteArray.distinct(): List<Byte> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing
only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun ShortArray.distinct():
List<Short> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements from
the given array.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n
* \n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun
IntArray.distinct(): List<Int> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only
distinct elements from
the given array.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n
* \n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun

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LongArray.distinct(): List<Long> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing
only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic fun FloatArray.distinct(): List<Float> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a
list containing only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same
order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic fun DoubleArray.distinct():
List<Double> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements
from the given array.\n * \n * The elements in the resulting list are in the same order as they were in the source
array.\n * \n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic fun
BooleanArray.distinct(): List<Boolean> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list
containing only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same
order
as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic fun CharArray.distinct():
List<Char> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only elements from the
given array\n * having distinct keys returned by the given [selector] function.\n * \n * Among elements of the given
array with equal keys, only the first one will be present in the resulting list.\n * The elements in the resulting list are
in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic inline fun <T, K> Array<out
T>.distinctBy(selector: (T) -> K): List<T> {\n  val set = HashSet<K>()\n  val list = ArrayList<T>()\n  for (e in
this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**\n *
Returns a list containing only elements from the given
array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list
are in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic inline fun <K>
ByteArray.distinctBy(selector: (Byte) -> K): List<Byte> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Byte>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic inline fun <K>
ShortArray.distinctBy(selector: (Short) -> K): List<Short> {\n  val set = HashSet<K>()\n  val list
= ArrayList<Short>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n
}\n  return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic inline fun <K>
IntArray.distinctBy(selector: (Int) -> K): List<Int> {\n  val set = HashSet<K>()\n  val list = ArrayList<Int>()\n
for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**
 * Returns a list containing only elements from the given array\n * having distinct keys returned by the given
[selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source
array.\n
*\n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n
*\npublic inline fun <K>
LongArray.distinctBy(selector: (Long) -> K): List<Long> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Long>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys

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returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample

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samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \n public inline fun <K>
FloatArray.distinctBy(selector: (Float) -> K): List<Float> {\n    val set = HashSet<K>()\n    val list =
ArrayList<Float>()\n    for (e in this) {\n        val key = selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n/**\n * Returns a
list containing only elements from the given array\n * having distinct keys returned by the given [selector]
function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n *
@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \n public inline fun <K>
DoubleArray.distinctBy(selector: (Double) -> K): List<Double> {\n    val set = HashSet<K>()\n    val list =
ArrayList<Double>()\n    for (e in this) {\n        val key = selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \n public inline fun <K>
BooleanArray.distinctBy(selector: (Boolean) -> K):
List<Boolean> {\n    val set = HashSet<K>()\n    val list = ArrayList<Boolean>()\n    for (e in this) {\n        val key
= selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n/**\n * Returns a list containing
only elements from the given array\n * having distinct keys returned by the given [selector] function.\n * \n * The
elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \n public inline fun <K>
CharArray.distinctBy(selector: (Char) -> K): List<Char> {\n    val set = HashSet<K>()\n    val list =
ArrayList<Char>()\n    for (e in this) {\n        val key = selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified
collection.\n * \n * The returned set preserves the element iteration order
of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these
collections use [union].\n * \n public infix fun <T> Array<out T>.intersect(other: Iterable<T>): Set<T> {\n    val set
= this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that
are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration
order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these
collections use [union].\n * \n public infix fun ByteArray.intersect(other: Iterable<Byte>): Set<Byte> {\n    val set
= this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are
contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration
order of the original array.\n * \n * To get
a set containing all elements that are contained at least in one of these collections use [union].\n * \n public infix fun ShortArray.intersect(other: Iterable<Short>): Set<Short> {\n    val set
= this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this
array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original
array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use
[union].\n * \n public infix fun IntArray.intersect(other: Iterable<Int>): Set<Int> {\n    val set
= this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this
array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original
array.\n * \n * To get a set containing all elements that are contained
at least in one of these collections use [union].\n * \n public infix fun LongArray.intersect(other: Iterable<Long>):
Set<Long> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n/**\n * Returns a set
containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set
preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are
contained at least in one of these collections use [union].\n * \n public infix fun FloatArray.intersect(other:

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Iterable<Float>): Set<Float> {\n  val set = this.toMutableSet()\n  set.retainAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\n\npublic infix fun DoubleArray.intersect(other: Iterable<Double>): Set<Double> {\n  val set = this.toMutableSet()\n  set.retainAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\n\npublic infix fun BooleanArray.intersect(other: Iterable<Boolean>): Set<Boolean> {\n  val set = this.toMutableSet()\n  set.retainAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\n\npublic infix fun CharArray.intersect(other: Iterable<Char>): Set<Char> {\n  val set = this.toMutableSet()\n  set.retainAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun <T> Array<out T>.subtract(other: Iterable<T>): Set<T> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun ByteArray.subtract(other: Iterable<Byte>): Set<Byte> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun ShortArray.subtract(other: Iterable<Short>): Set<Short> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun IntArray.subtract(other: Iterable<Int>): Set<Int> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun LongArray.subtract(other: Iterable<Long>): Set<Long> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun FloatArray.subtract(other: Iterable<Float>): Set<Float> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun DoubleArray.subtract(other: Iterable<Double>): Set<Double> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun BooleanArray.subtract(other: Iterable<Boolean>): Set<Boolean> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic infix fun CharArray.subtract(other: Iterable<Char>): Set<Char> {\n  val set = this.toMutableSet()\n  set.removeAll(other)\n  return set\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\n\npublic fun <T> Array<out T>.toMutableSet(): MutableSet<T> {\n  return toCollection(LinkedHashSet<T>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all

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distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun ByteArray.toMutableSet(): MutableSet<Byte> {\n return toCollection(LinkedHashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun ShortArray.toMutableSet(): MutableSet<Short> {\n return toCollection(LinkedHashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun IntArray.toMutableSet(): MutableSet<Int> {\n return toCollection(LinkedHashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun LongArray.toMutableSet(): MutableSet<Long> {\n return toCollection(LinkedHashSet<Long>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun FloatArray.toMutableSet(): MutableSet<Float> {\n return toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun DoubleArray.toMutableSet(): MutableSet<Double> {\n return toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun BooleanArray.toMutableSet(): MutableSet<Boolean> {\n return toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun CharArray.toMutableSet(): MutableSet<Char> {\n return toCollection(LinkedHashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun <T> Array<out T>.union(other: Iterable<T>): Set<T> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun ByteArray.union(other: Iterable<Byte>): Set<Byte> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun ShortArray.union(other: Iterable<Short>): Set<Short> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun IntArray.union(other: Iterable<Int>): Set<Int> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun LongArray.union(other: Iterable<Long>): Set<Long> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun FloatArray.union(other: Iterable<Float>): Set<Float> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun DoubleArray.union(other: Iterable<Double>): Set<Double> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun BooleanArray.union(other: Iterable<Boolean>): Set<Boolean> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun CharArray.union(other: Iterable<Char>): Set<Char> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n

```

[intersect].\n *\npublic infix fun LongArray.union(other:
Iterable<Long>): Set<Long> {\n  val set = this.toMutableSet()\n  set.addAll(other)\n  return set}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element
iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the
end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both
collections use [intersect].\n *\npublic infix fun FloatArray.union(other: Iterable<Float>): Set<Float> {\n  val set
= this.toMutableSet()\n  set.addAll(other)\n  return set}\n\n/**\n * Returns a set containing all distinct elements
from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those
elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n *
\n * To get a set containing all
elements that are contained in both collections use [intersect].\n *\npublic infix fun DoubleArray.union(other:
Iterable<Double>): Set<Double> {\n  val set = this.toMutableSet()\n  set.addAll(other)\n  return set}\n\n/**\n *
Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element
iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the
end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both
collections use [intersect].\n *\npublic infix fun BooleanArray.union(other: Iterable<Boolean>): Set<Boolean> {\n
val set = this.toMutableSet()\n  set.addAll(other)\n  return set}\n\n/**\n * Returns a set containing all distinct
elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n
\n * Those elements of the [other] collection that
are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all
elements that are contained in both collections use [intersect].\n *\npublic infix fun CharArray.union(other:
Iterable<Char>): Set<Char> {\n  val set = this.toMutableSet()\n  set.addAll(other)\n  return set}\n\n/**\n *
Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun <T> Array<out T>.all(predicate: (T) ->
Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true}\n\n/**\n *
Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun ByteArray.all(predicate: (Byte) -> Boolean):
Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true}\n\n/**\n * Returns `true` if
all elements match the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n *\npublic
inline fun ShortArray.all(predicate:
(Short) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return
true}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun IntArray.all(predicate: (Int) -> Boolean):
Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true}\n\n/**\n * Returns `true`
if all elements match the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n
\npublic inline fun LongArray.all(predicate: (Long) -> Boolean): Boolean {\n  for (element in this) if
(!predicate(element)) return false\n  return true}\n\n/**\n * Returns `true` if all elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n *\npublic inline fun
FloatArray.all(predicate:
(Float) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return
true}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun DoubleArray.all(predicate: (Double) ->
Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true}\n\n/**\n *
Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun BooleanArray.all(predicate: (Boolean) ->
Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true}\n\n/**\n *
Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun CharArray.all(predicate: (Char) -> Boolean):

```

```

Boolean {
    for (element in this) if (!predicate(element))
        return false
    return true
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun <T> Array<out T>.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun ByteArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun ShortArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun IntArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun LongArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun FloatArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun DoubleArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun BooleanArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if array has at least one element.

@sample
samples.collections.Collections.Aggregates.any
public fun CharArray.any(): Boolean {
    return
    isEmpty()
}

Returns `true` if at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun <T> Array<out
T>.any(predicate: (T) -> Boolean): Boolean {
    for (element in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun ByteArray.any(predicate:
(Byte) -> Boolean): Boolean {
    for (element in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun ShortArray.any(predicate:
(Short) -> Boolean): Boolean {
    for (element in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun IntArray.any(predicate: (Int) -
> Boolean):
Boolean {
    for (element in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if
at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun LongArray.any(predicate:
(Long) -> Boolean): Boolean {
    for (element in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun FloatArray.any(predicate:
(Float) -> Boolean): Boolean {
    for (element in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if at least one element matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun DoubleArray.any(predicate:
(Double) -> Boolean): Boolean {
    for (element
in this) if (predicate(element)) return true
    return
    false
}

Returns `true` if at least one element
matches the given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun BooleanArray.any(predicate: (Boolean) -> Boolean): Boolean {
    for (element in this) if
(predicate(element)) return true
    return
    false
}

Returns `true` if at least one element matches the
given [predicate].

@sample
samples.collections.Collections.Aggregates.anyWithPredicate
public inline fun CharArray.any(predicate: (Char) -> Boolean): Boolean {
    for (element in this) if (predicate(element))
return true
    return
    false
}

Returns the number of elements in this array.

```

```

*@\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.count(): Int {\n  return size\n}\n\n/**\n * Returns the number of elements in this array.\n *@\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.count():
  Int {\n  return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*@\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the
number of elements in this array.\n *@\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.count(): Int {\n
return size\n}\n\n/**\n * Returns the number of elements in this array.\n *@\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*@\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the
number of elements in this array.\n *@\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.count(): Int {\n
return size\n}\n\n/**\n * Returns the number of elements in this array.\n *@\n@kotlin.internal.InlineOnly\npublic
inline fun BooleanArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the number of
elements in this array.\n *@\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.count(): Int {\n  return
size\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *@\npublic inline fun <T>
Array<out T>.count(predicate: (T) -> Boolean): Int {\n  var count = 0\n  for (element in this) if
(predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *@\npublic inline fun ByteArray.count(predicate: (Byte) -> Boolean): Int {\n  var count = 0\n  for
(element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n *@\npublic inline fun ShortArray.count(predicate: (Short) -> Boolean): Int {\n  var
count = 0\n  for (element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *@\npublic inline fun IntArray.count(predicate:
(Int) -> Boolean): Int {\n  var count = 0\n  for (element in this) if (predicate(element)) ++count\n  return
count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *@\npublic inline fun
LongArray.count(predicate: (Long) -> Boolean): Int {\n  var count = 0\n  for (element in this) if
(predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *@\npublic inline fun FloatArray.count(predicate: (Float) -> Boolean): Int {\n  var count = 0\n  for
(element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n *@\npublic inline fun DoubleArray.count(predicate: (Double) -> Boolean): Int {\n
var count = 0\n  for (element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *@\npublic inline fun BooleanArray.count(predicate:
(Boolean) -> Boolean): Int {\n  var count = 0\n  for (element in this) if (predicate(element)) ++count\n  return
count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *@\npublic inline fun
CharArray.count(predicate: (Char) -> Boolean): Int {\n  var count = 0\n  for (element in this) if
(predicate(element)) ++count\n  return count\n}\n\n/**\n * Accumulates value starting with [initial] value and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator
value and an element, and calculates the next accumulator value.\n *@\npublic inline fun <T, R> Array<out
T>.fold(initial: R, operation: (acc: R, T) -> R): R {\n  var accumulator = initial\n  for (element in this)
accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n *@\npublic inline fun
<R> ByteArray.fold(initial: R, operation: (acc: R, Byte) -> R): R {\n  var accumulator = initial\n  for (element in
this) accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n *@\npublic inline fun
<R> ShortArray.fold(initial: R, operation: (acc: R, Short) -> R): R

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    {\n  var accumulator = initial\n  for (element in this) accumulator = operation(accumulator, element)\n  return
    accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
    right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is
    empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the
    next accumulator value.\n */\npublic inline fun <R> IntArray.fold(initial: R, operation: (acc: R, Int) -> R): R {\n
    var accumulator = initial\n  for (element in this) accumulator = operation(accumulator, element)\n  return
    accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
    right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is
    empty.\n * \n * @param [operation] function that takes current accumulator
    value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R>
    LongArray.fold(initial: R, operation: (acc: R, Long) -> R): R {\n  var accumulator = initial\n  for (element in this)
    accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting
    with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *
    \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes
    current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R>
    FloatArray.fold(initial: R, operation: (acc: R, Float) -> R): R {\n  var accumulator = initial\n  for (element in this)
    accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting
    with [initial] value and applying [operation] from left to right\n * to current accumulator
    value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
    [operation] function that takes current accumulator value and an element, and calculates the next accumulator
    value.\n */\npublic inline fun <R> DoubleArray.fold(initial: R, operation: (acc: R, Double) -> R): R {\n  var
    accumulator = initial\n  for (element in this) accumulator = operation(accumulator, element)\n  return
    accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
    right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is
    empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the
    next accumulator value.\n */\npublic inline fun <R> BooleanArray.fold(initial: R, operation: (acc: R, Boolean) ->
    R): R {\n  var accumulator = initial\n  for (element in this) accumulator = operation(accumulator,
    element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
    [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified
    [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
    an element, and calculates the next accumulator value.\n */\npublic inline fun <R> CharArray.fold(initial: R,
    operation: (acc: R, Char) -> R): R {\n  var accumulator = initial\n  for (element in this) accumulator =
    operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
    value and applying [operation] from left to right\n * to current accumulator value and each element with its index in
    the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
    function that takes the index of an element, current accumulator value\n * and the element
    itself, and calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out T>.foldIndexed(initial:
    R, operation: (index: Int, acc: R, T) -> R): R {\n  var index = 0\n  var accumulator = initial\n  for (element in
    this) accumulator = operation(index++, accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates
    value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and
    each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is
    empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
    element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> ByteArray.foldIndexed(initial:
    R, operation: (index: Int, acc: R, Byte) -> R): R {\n  var index = 0\n  var accumulator = initial\n  for (element in
    this) accumulator = operation(index++, accumulator, element)\n
    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from
    left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns
    the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
  
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element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n
*/\npublic inline fun <R> ShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): R {\n  var
index = 0\n  var accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator,
element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n
*\n * Returns the specified [initial] value if the array is empty.\n *\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n */\npublic inline fun <R> IntArray.foldIndexed(initial: R,
operation: (index: Int, acc: R, Int) -> R): R {\n  var index = 0\n  var accumulator = initial\n  for (element in this)
accumulator = operation(index++, accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each
element with its index in the original array.\n *\n * Returns the specified [initial] value if the array is empty.\n *\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n */\npublic inline fun <R> LongArray.foldIndexed(initial: R,
operation: (index: Int, acc: R, Long) -> R): R {\n  var index = 0\n  var
accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator, element)\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n *\n * Returns the
specified [initial] value if the array is empty.\n *\n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\n
public inline fun <R> FloatArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): R {\n  var
index = 0\n  var accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator,
element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from left to right\n * to current accumulator value and each element with its index
in the original array.\n *\n * Returns the specified [initial] value if the array is empty.\n *\n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n */\npublic inline fun <R> DoubleArray.foldIndexed(initial: R, operation: (index: Int, acc:
R, Double) -> R): R {\n  var index = 0\n  var accumulator = initial\n  for (element in this) accumulator =
operation(index++, accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its
index in the original array.\n *\n * Returns the specified [initial] value if the array is empty.\n *\n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n */\npublic inline fun <R> BooleanArray.foldIndexed(initial:
R, operation: (index: Int, acc: R, Boolean) -> R): R {\n  var index = 0\n  var accumulator = initial\n  for
(element in this) accumulator = operation(index++, accumulator, element)\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator
value and each element with its index in the original array.\n *\n * Returns the specified [initial] value if the array is
empty.\n *\n * @param [operation] function that takes the index of an element, current accumulator value\n * and
the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R>
CharArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): R {\n  var index = 0\n  var
accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator, element)\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation] from right to left\n * to each element and current accumulator value.\n *\n * Returns
the specified [initial] value if the array is empty.\n *\n * @param [operation] function that takes an element
and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out
T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {\n  var index = lastIndex\n  var accumulator = initial\n
while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to

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* and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <T, R>
Array<out T>.foldRightIndexed(initial: R, operation: (index: Int, T, acc: R) -> R): R {\n  var index = lastIndex\n
var accumulator = initial\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n
--index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n
*\n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator
value.\n */\npublic inline fun <R> ByteArray.foldRightIndexed(initial: R, operation: (index: Int, Byte, acc: R) -> R):
R {\n  var index = lastIndex\n  var accumulator = initial\n
while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right
to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n
*/\npublic inline fun <R> ShortArray.foldRightIndexed(initial: R, operation: (index: Int, Short, acc: R) -> R): R {\n
var index = lastIndex\n  var accumulator = initial\n  while (index >= 0) {\n    accumulator = operation(index,
get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element with its index in the original array
and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, the element itself\n * and current accumulator value, and
calculates the next accumulator value.\n */\npublic inline fun
<R> IntArray.foldRightIndexed(initial: R, operation: (index: Int, Int, acc: R) -> R): R {\n  var index = lastIndex\n
var accumulator = initial\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n
--index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n
*\n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and
current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>
LongArray.foldRightIndexed(initial: R, operation: (index: Int, Long, acc: R) -> R): R {\n  var index = lastIndex\n
var accumulator = initial\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n
--index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n
*\n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator
value.\n */\npublic inline fun <R> FloatArray.foldRightIndexed(initial: R, operation: (index: Int, Float, acc: R) ->
R): R {\n  var index = lastIndex\n  var accumulator = initial\n
while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right
to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n
*/\npublic inline fun <R> DoubleArray.foldRightIndexed(initial: R, operation: (index: Int, Double, acc: R) -> R): R
{\n  var index = lastIndex\n  var accumulator = initial\n  while (index >= 0) {\n    accumulator =
operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from right to left\n * to each element with its index
in the original array and current accumulator value.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes the index of an element, the element
itself\n * and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>

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BooleanArray.foldRightIndexed(initial: R, operation: (index: Int, Boolean, acc: R) -> R): R {
  var index = lastIndex
  var accumulator = initial
  while (index >= 0) {
    accumulator = operation(index, get(index), accumulator)
    --index
  }
  return accumulator
}
  * Accumulates value starting with [initial] value and applying [operation] from right to left
  * to each element with its index in the original array and current accumulator value.
  * Returns the specified [initial] value if the array is empty.
  * @param [operation] function that takes the index of an element, the element itself
  * and current accumulator value, and calculates the next accumulator value.
  * public inline fun <R>
CharArray.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {
  var index = lastIndex
  var accumulator = initial
  while (index >= 0) {
    accumulator = operation(index, get(index), accumulator)
    --index
  }
  return accumulator
}
  * Performs the given [action] on each element.
  * public inline fun <T> Array<out T>.forEach(action: (T) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun ByteArray.forEach(action: (Byte) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun ShortArray.forEach(action: (Short) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun IntArray.forEach(action: (Int) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun LongArray.forEach(action: (Long) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun FloatArray.forEach(action: (Float) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun DoubleArray.forEach(action: (Double) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun BooleanArray.forEach(action: (Boolean) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element.
  * public inline fun CharArray.forEach(action: (Char) -> Unit): Unit {
  for (element in this)
    action(element)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs the action on the element.
  * public inline fun <T> Array<out T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {
  var index = 0
  for (item in this)
    action(index++, item)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs the action on the element.
  * public inline fun ByteArray.forEachIndexed(action: (index: Int, Byte) -> Unit): Unit {
  var index = 0
  for (item in this)
    action(index++, item)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs the action on the element.
  * public inline fun ShortArray.forEachIndexed(action: (index: Int, Short) -> Unit): Unit {
  var index = 0
  for (item in this)
    action(index++, item)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs the action on the element.
  * public inline fun IntArray.forEachIndexed(action: (index: Int, Int) -> Unit): Unit {
  var index = 0
  for (item in this)
    action(index++, item)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs the action on the element.
  * public inline fun LongArray.forEachIndexed(action: (index: Int, Long) -> Unit): Unit {
  var index = 0
  for (item in this)
    action(index++, item)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs the action on the element.
  * public inline fun FloatArray.forEachIndexed(action: (index: Int, Float) -> Unit): Unit {
  var index = 0
  for (item in this)
    action(index++, item)
}
  * Performs the given [action] on each element, providing sequential index with the element.
  * @param [action] function that takes the index of an element and the element itself
  * and performs

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the action on the element.\n */\npublic inline fun DoubleArray.forEachIndexed(action: (index: Int, Double) -> Unit):
Unit {\n  var index = 0\n  for (item in this) action(index++, item)\n}\n\n/**\n * Performs the given [action] on
each element, providing sequential index with the element.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n */\npublic inline
fun BooleanArray.forEachIndexed(action: (index: Int, Boolean) -> Unit): Unit {\n  var index = 0\n  for (item in
this) action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element.\n * @param [action] function that takes the index of an element and the element itself\n * and
performs the action on the element.\n */\npublic inline fun CharArray.forEachIndexed(action: (index: Int, Char) ->
Unit): Unit {\n  var index = 0\n  for (item in this) action(index++, item)\n}\n\n/**\n * Returns the largest
element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the array
is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Double>.max(): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var
max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    max = maxOf(max,
e)\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * If any of elements is `NaN` returns
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Float>.max(): Float {\n  if (isEmpty()) throw NoSuchElementException()\n  var
max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    max = maxOf(max, e)\n  }\n  return
max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Array<out T>.max(): T {\n  if (isEmpty()) throw
NoSuchElementException()\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e)
max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun ByteArray.max(): Byte {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun ShortArray.max(): Short {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic
fun IntArray.max(): Int {\n  if (isEmpty()) throw NoSuchElementException()\n  var max = this[0]\n  for (i in
1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun LongArray.max(): Long {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun FloatArray.max(): Float {\n  if (isEmpty()) throw
NoSuchElementException()\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    max =
maxOf(max, e)\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * If any of elements is `NaN`
returns `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n\n*/

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*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun DoubleArray.max(): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharArray.max(): Char {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val\n        e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element yielding the\n * largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@sample samples.collections.Collections.Aggregates.maxBy\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <T, R : Comparable<R>> Array<out T>.maxBy(selector: (T) -> R): T {\n    if\n    (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if\n    (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e =\n        this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException\n * if the array is empty.\n */\n\n@sample samples.collections.Collections.Aggregates.maxBy\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> ByteArray.maxBy(selector: (Byte) -> R): Byte {\n    if\n    (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if\n    (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e =\n        this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@sample\nsamples.collections.Collections.Aggregates.maxBy\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic\n    inline fun <R : Comparable<R>> ShortArray.maxBy(selector: (Short) -> R): Short {\n        if (isEmpty()) throw\n        NoSuchElementException()\n        var maxElem = this[0]\n        val lastIndex = this.lastIndex\n        if (lastIndex == 0)\n        return maxElem\n        var maxValue = selector(maxElem)\n        for (i in 1..lastIndex) {\n            val e = this[i]\n            val v\n            = selector(e)\n            if (maxValue < v) {\n                maxElem = e\n                maxValue = v\n            }\n        }\n        return\n        maxElem\n    }\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n */\n\n@sample\nsamples.collections.Collections.Aggregates.maxBy\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> IntArray.maxBy(selector: (Int) -> R): Int {\n    if (isEmpty())\n    throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e\n        = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n */\n\n@sample\nsamples.collections.Collections.Aggregates.maxBy\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> LongArray.maxBy(selector: (Long) -> R): Long {\n    if\n    (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if\n    (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e =\n        this[i]\n        val v = selector(e)\n        if (maxValue < v)

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    {
        maxElem = e
        maxValue = v
    }
    return maxElem
}
}
Returns the first element yielding the largest value of the given function.
* @throws NoSuchElementException if the array is empty.
* @sample samples.collections.Collections.Aggregates.maxBy

* \n @SinceKotlin("1.7") \n @kotlin.jvm.JvmName("maxByOrThrow") \n @Suppress("CONFLICTING_OVERLOADS") \n public inline fun <R : Comparable<R>> FloatArray.maxBy(selector: (Float) -> R): Float {
    if (isEmpty()) throw NoSuchElementException()
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}
Returns the first element yielding the largest value of the given function.
* @throws NoSuchElementException if the array is empty.
* @sample samples.collections.Collections.Aggregates.maxBy

* \n @SinceKotlin("1.7") \n @kotlin.jvm.JvmName("maxByOrThrow") \n @Suppress("CONFLICTING_OVERLOADS") \n public inline fun <R : Comparable<R>> DoubleArray.maxBy(selector: (Double) -> R): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}
Returns the first element yielding the largest value of the given function.
* @throws NoSuchElementException if the array is empty.
* @sample samples.collections.Collections.Aggregates.maxBy

* \n @SinceKotlin("1.7") \n @kotlin.jvm.JvmName("maxByOrThrow") \n @Suppress("CONFLICTING_OVERLOADS") \n public inline fun <R : Comparable<R>> BooleanArray.maxBy(selector: (Boolean) -> R): Boolean {
    if (isEmpty()) throw NoSuchElementException()
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}
Returns the first element yielding the largest value of the given function.
* @throws NoSuchElementException if the array is empty.
* @sample samples.collections.Collections.Aggregates.maxBy

* \n @SinceKotlin("1.7") \n @kotlin.jvm.JvmName("maxByOrThrow") \n @Suppress("CONFLICTING_OVERLOADS") \n public inline fun <R : Comparable<R>> CharArray.maxBy(selector: (Char) -> R): Char {
    if (isEmpty()) throw NoSuchElementException()
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}
Returns the first element yielding the largest value of the given function or `null` if there are no elements.
* @sample samples.collections.Collections.Aggregates.maxByOrNull

* \n @SinceKotlin("1.4") \n public inline fun <T, R : Comparable<R>> Array<out T>.maxByOrNull(selector: (T) -> R): T? {
    if (isEmpty()) return null
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}
Returns the first element yielding the largest value of the given function or `null` if there are no elements.
* @sample samples.collections.Collections.Aggregates.maxByOrNull

* \n @SinceKotlin("1.4") \n public inline fun <R : Comparable<R>> ByteArray.maxByOrNull(selector: (Byte) -> R): Byte? {
    if (isEmpty()) return null
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}
Returns the first element yielding the largest value of the given function or

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`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ShortArray.maxByOrNull(selector:\n
(Short) -> R): Short? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n
if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =\n
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or\n
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> IntArray.maxByOrNull(selector: (Int) -> R):\n
Int? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex ==\n
0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val\n
v = selector(e)\n if\n
(maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> LongArray.maxByOrNull(selector: (Long) -> R): Long? {\n if (isEmpty()) return null\n
var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =\n
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)\n
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample\n
samples.collections.Collections.Aggregates.maxByOrNull\n *\n@SinceKotlin("1.4")\npublic\n
inline fun <R : Comparable<R>> FloatArray.maxByOrNull(selector: (Float) -> R): Float? {\n if (isEmpty())\n
return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n
var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if\n
(maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample\n
samples.collections.Collections.Aggregates.maxByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun\n
<R : Comparable<R>> DoubleArray.maxByOrNull(selector: (Double) -> R): Double? {\n if (isEmpty()) return\n
null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var\n
maxValue = selector(maxElem)\n for\n
(i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n\n
maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample\n
samples.collections.Collections.Aggregates.maxByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :\n
Comparable<R>> BooleanArray.maxByOrNull(selector: (Boolean) -> R): Boolean? {\n if (isEmpty()) return\n
null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var\n
maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if\n
(maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if\n
there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> CharArray.maxByOrNull(selector: (Char) ->\n
R): Char? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if\n
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =\n
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n }\n return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n
*\n applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\n
result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic

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inline fun <T> Array<out T>.maxOf(selector: (T) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun ByteArray.maxOf(selector: (Byte) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun ShortArray.maxOf(selector: (Short) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun IntArray.maxOf(selector: (Int) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun LongArray.maxOf(selector: (Long) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun FloatArray.maxOf(selector: (Float) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun DoubleArray.maxOf(selector: (Double) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

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(i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n } \n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOf(selector: (Boolean) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.maxOf(selector: (Char) -> Double): Double {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOf(selector: (T) ->
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i
in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOf(selector: (Byte) -> Float):
Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`,
the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOf(selector: (Short) ->
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i
in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.maxOf(selector: (Int) -> Float): Float {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue,
v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`,
the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOf(selector: (Float) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOf(selector: (Double) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOf(selector:
(Boolean) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
}\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOf(selector: (Char) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n
return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
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T>.maxOf(selector: (T) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> ByteArray.maxOf(selector: (Byte) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ShortArray.maxOf(selector: (Short) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue
< v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.maxOf(selector: (Int) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException
if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> LongArray.maxOf(selector: (Long) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.maxOf(selector: (Float) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
DoubleArray.maxOf(selector: (Double) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.maxOf(selector: (Boolean) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.maxOf(selector: (Char) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values

```

produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOfOrNull(selector: (T) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOfOrNull(selector: (Byte) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOfOrNull(selector: (Short) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOfOrNull(selector: (Int) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOfOrNull(selector: (Long) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOfOrNull(selector: (Float) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOfOrNull(selector: (Double) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n
```

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    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOfOrNull(selector:
(Boolean) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no
elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOfOrNull(selector: (Char) ->
Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.maxOfOrNull(selector: (T) -> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n
    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOfOrNull(selector: (Byte) ->
Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value
among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no
elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOfOrNull(selector: (Short) -
> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.maxOfOrNull(selector: (Int) -> Float): Float? {\n    if (isEmpty()) return null\n    var
maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOfOrNull(selector: (Long) -

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> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOfOrNull(selector: (Float) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOfOrNull(selector: (Double) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOfOrNull(selector: (Boolean) -> Float): Float? {\n  if (isEmpty())\n    return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOfOrNull(selector: (Char) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out T>.maxOfOrNull(selector: (T) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> ByteArray.maxOfOrNull(selector: (Byte) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> ShortArray.maxOfOrNull(selector: (Short) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n

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maxValue = v\n    }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> IntArray.maxOrNull(selector: (Int) -> R): R? {\n    if (isEmpty()) return null\n
var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v)
{\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
LongArray.maxOrNull(selector: (Long) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val
v = selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.maxOrNull(selector: (Float) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> DoubleArray.maxOrNull(selector: (Double) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no
elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.maxOrNull(selector: (Boolean) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.maxOrNull(selector: (Char) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Array<out T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    if
(isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n
    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all
values produced by [selector] function applied to each element in the array.\n * \n * @throws

```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.maxOfWith(comparator:\nComparator<in R>, selector: (Byte) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var max\nValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n(comparator.compare(max\nValue, v) < 0) {\n            max\nValue = v\n        }\n    }\n    return max\nValue\n}\n\n/**\n
```

Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.maxOfWith(comparator:\nComparator<in R>, selector: (Short) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\nmax\nValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n(comparator.compare(max\nValue, v) < 0) {\n            max\nValue = v\n        }\n    }\n    return max\nValue\n}\n\n/**\n
```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.maxOfWith(comparator:\nComparator<in R>, selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var max\nValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n(comparator.compare(max\nValue, v) < 0) {\n            max\nValue = v\n        }\n    }\n    return max\nValue\n}\n\n/**\n
```

Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun <R> LongArray.maxOfWith(comparator: Comparator<in R>, selector: (Long) -> R): R {\n    if\n(isEmpty()) throw NoSuchElementException()\n    var max\nValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n(comparator.compare(max\nValue, v) < 0) {\n            max\nValue = v\n        }\n    }\n    return max\nValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator] among all\nvalues produced by [selector] function applied to each element in the array.\n * \n * @throws\n
```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.maxOfWith(comparator:\nComparator<in R>, selector:\n
```

```
(Float) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var max\nValue = selector(this[0])\n    for\n(i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n(comparator.compare(max\nValue, v) < 0) {\n            max\nValue = v\n        }\n    }\n    return max\nValue\n}\n\n/**\n * Returns the largest value according to the provided\n[comparator] among all values produced by [selector] function applied to each element in the array.\n * \n * @throws\n
```

```
NoSuchElementException if the array is empty.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.maxOfWith(comparator:\nComparator<in R>, selector: (Double) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\nmax\nValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n(comparator.compare(max\nValue, v) < 0) {\n
```

```
            max\nValue = v\n        }\n    }\n    return max\nValue\n}\n\n/**\n * Returns the largest value according to the\nprovided [comparator] among all values produced by [selector] function applied to each element in the array.\n * \n * @throws\n
```

```
NoSuchElementException if the array is empty.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.maxOfWith(comparator:\n
```



```

Comparator<in R>, selector: (Boolean) -> R): R { \n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n
* \n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.maxOfWith(comparator:
Comparator<in R>, selector: (Char) -> R): R { \n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.maxOfWithOrNull(comparator:
Comparator<in R>, selector: (T) -> R): R? { \n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n
for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if
there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? { \n  if (isEmpty()) return
null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue
= v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if
there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? { \n  if (isEmpty())
return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Int) -> R): R? { \n  if
(isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
LongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? { \n  if (isEmpty())
return null\n

```

```

    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.

*/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
FloatArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {
    if (isEmpty())
        return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value according to the
provided [comparator] * among all values produced by [selector] function applied to each element in the array or
`null` if there are no elements.

*/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
DoubleArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {
    if (isEmpty())
        return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.

*/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
        selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return
    maxValue
}

Returns the largest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.

*/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
CharArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {
    if (isEmpty()) return
    null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return
    maxValue
}

Returns the largest element or `null` if there are no elements.
* `NaN` returns `NaN`.
*/@SinceKotlin("1.4")\npublic fun Array<out Double>.maxOrNull(): Double? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        max =
        maxOf(max, e)
    }
    return max
}

Returns the largest element or `null` if there are no elements.
* `NaN` returns `NaN`.
*/@SinceKotlin("1.4")\npublic fun Array<out
Float>.maxOrNull(): Float? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        max = maxOf(max, e)
    }
    return max
}

Returns the largest element or `null` if
there are no elements.
*/@SinceKotlin("1.4")\npublic fun <T : Comparable<T>>
Array<out T>.maxOrNull(): T? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

Returns the largest element or `null` if
there are no elements.
*/@SinceKotlin("1.4")\npublic fun ByteArray.maxOrNull(): Byte? {
    if (isEmpty())
        return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

Returns the largest element or `null` if there are no elements.

*/@SinceKotlin("1.4")\npublic fun ShortArray.maxOrNull(): Short? {
    if (isEmpty()) return null
    var max
    = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

Returns the largest element or `null` if there are no elements.
*/@SinceKotlin("1.4")\npublic fun
IntArray.maxOrNull(): Int? {
    if (isEmpty())

```

```

return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\nreturn max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\npublic fun LongArray.maxOrNull(): Long? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n\n@SinceKotlin("1.4")\npublic fun FloatArray.maxOrNull(): Float? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n\n@SinceKotlin("1.4")\npublic fun DoubleArray.maxOrNull(): Double? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\npublic fun CharArray.maxOrNull(): Char? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T> Array<out T>.maxWith(comparator: Comparator<in T>): T {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun ByteArray.maxWith(comparator: Comparator<in Byte>): Byte {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun ShortArray.maxWith(comparator: Comparator<in Short>): Short {\n    if (isEmpty()) throw NoSuchElementException()\n\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun IntArray.maxWith(comparator: Comparator<in Int>): Int {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun LongArray.maxWith(comparator: Comparator<in Long>): Long {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun FloatArray.maxWith(comparator: Comparator<in Float>): Float {\n    if (isEmpty()) throw

```

```

NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun DoubleArray.maxWith(comparator: Comparator<in Double>): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun BooleanArray.maxWith(comparator: Comparator<in Boolean>): Boolean {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharArray.maxWith(comparator: Comparator<in Char>): Char {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun <T> Array<out T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun ByteArray.maxWithOrNull(comparator: Comparator<in Byte>): Byte? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun ShortArray.maxWithOrNull(comparator: Comparator<in Short>): Short? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun IntArray.maxWithOrNull(comparator: Comparator<in Int>): Int? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun LongArray.maxWithOrNull(comparator: Comparator<in Long>): Long? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.maxWithOrNull(comparator: Comparator<in Float>): Float? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.maxWithOrNull(comparator: Comparator<in Double>): Double? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n
```

```

if (comparator.compare(max, e) < 0) max = e\n  }\n  return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun BooleanArray.maxOrNull(comparator: Comparator<in Boolean>):
Boolean? {\n  if (isEmpty()) return null\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n  }\n  return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun CharArray.maxOrNull(comparator: Comparator<in Char>): Char? {\n
if (isEmpty()) return null\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if
(comparator.compare(max, e) < 0) max = e\n  }\n  return max\n}\n\n/**\n * Returns the smallest element.\n * \n *
If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Double>.min(): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var
min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    min = minOf(min, e)\n  }\n  return
min\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Float>.min(): Float {\n  if (isEmpty()) throw NoSuchElementException()\n  var min
= this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    min = minOf(min, e)\n  }\n  return min\n}\n\n/**\n *
Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Array<out T>.min(): T {\n  if (isEmpty()) throw
NoSuchElementException()\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e)
min = e\n  }\n  return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic
fun ByteArray.min(): Byte {\n  if (isEmpty()) throw NoSuchElementException()\n  var min = this[0]\n  for (i in
1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n/**\n * Returns the smallest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun ShortArray.min(): Short {\n  if (isEmpty()) throw NoSuchElementException()\n  var min =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n/**\n *
Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun IntArray.min(): Int {\n  if (isEmpty()) throw NoSuchElementException()\n  var min
= this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n/**\n *
Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun LongArray.min(): Long {\n  if (isEmpty()) throw NoSuchElementException()\n  var min =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n/**\n *
Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun FloatArray.min(): Float {\n  if (isEmpty()) throw NoSuchElementException()\n  var min =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    min = minOf(min,
e)\n  }\n  return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA

```

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DS\)\npublic fun DoubleArray.min(): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    min = minOf(min, e)\n  }\n  return min\n}\n\nReturns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * \n\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharArray.min(): Char {\n  if (isEmpty()) throw NoSuchElementException()\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\nReturns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <T, R : Comparable<R>> Array<out T>.minBy(selector: (T) -> R): T {\n  if (isEmpty()) throw NoSuchElementException()\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\nReturns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> ByteArray.minBy(selector: (Byte) -> R): Byte {\n  if (isEmpty()) throw NoSuchElementException()\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\nReturns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> ShortArray.minBy(selector: (Short) -> R): Short {\n  if (isEmpty()) throw NoSuchElementException()\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\nReturns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> IntArray.minBy(selector: (Int) -> R): Int {\n  if (isEmpty()) throw NoSuchElementException()\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\nReturns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> LongArray.minBy(selector: (Long) -> R): Long {\n  if (isEmpty()) throw NoSuchElementException()\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\nReturns the

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first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <R : Comparable<R>> FloatArray.minBy(selector: (Float) -> R): Float {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <R : Comparable<R>> DoubleArray.minBy(selector: (Double) -> R): Double {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <R : Comparable<R>> BooleanArray.minBy(selector: (Boolean) ->
R): Boolean {\n if (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex =
this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n
minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value
of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <R : Comparable<R>> CharArray.minBy(selector: (Char) -> R): Char {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n
for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem
= e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the
smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Array<out T>.minByOrNull(selector: (T) -> R): T? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function
or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ByteArray.minByOrNull(selector: (Byte) ->
R): Byte? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ShortArray.minByOrNull(selector: (Short) ->
R): Short? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex

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= this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in
1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the first element yielding the smallest value
of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n @SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> IntArray.minByOrNull(selector: (Int) -> R): Int? {\n  if (isEmpty()) return null\n  var minElem
= this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue =
selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v)
{\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n @SinceKotlin("1.4")\npublic inline
fun <R : Comparable<R>> LongArray.minByOrNull(selector: (Long) -> R): Long? {\n  if (isEmpty()) return
null\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var
minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if
(minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n @SinceKotlin("1.4")\npublic inline fun
<R : Comparable<R>> FloatArray.minByOrNull(selector: (Float) ->
R): Float? {\n  if (isEmpty()) return null\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if
(lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e =
this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n @SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> DoubleArray.minByOrNull(selector: (Double)
-> R): Double? {\n  if (isEmpty()) return null\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if
(lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e =
this[i]\n    val v = selector(e)\n    if (minValue > v)
{\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n @SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> BooleanArray.minByOrNull(selector: (Boolean) -> R): Boolean? {\n  if (isEmpty()) return
null\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var
minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if
(minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n @SinceKotlin("1.4")\npublic
inline fun <R : Comparable<R>> CharArray.minByOrNull(selector: (Char) -> R): Char? {\n  if (isEmpty()) return
null\n  var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var
minValue = selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if
(minValue > v) {\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T> Array<out T>.minOf(selector: (T) ->
Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for
(i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return
minValue\n}\n\n * Returns the smallest value among all values produced by [selector] function\n * applied to

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each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOf(selector: (Byte) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n *

```

Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector: (Short) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n *

```

Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOf(selector: (Int) -> Double):
Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n *

```

Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) ->
Double): Double

```

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{\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n *

```

Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOf(selector: (Float) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n *

```

Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOf(selector: (Double) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n *

```

Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array

is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOf(selector: (Boolean) ->\nDouble): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n    minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n * `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOf(selector: (Char) ->\nDouble): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex)\n    {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOf(selector: (T) ->\nFloat): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n    minValue\n}\n\n/**\n * Returns the smallest\n * value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of\n * values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOf(selector: (Byte) -> Float):\nFloat {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n    minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n * `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector: (Short) ->\nFloat): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n    minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n * `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOf(selector: (Int) -> Float):\nFloat {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest\n * value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of\n * values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) ->
```

```

Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

/**
 * Returns the smallest value among all values
 * produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by
 * [selector] function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the array is
 * empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun FloatArray.minOf(selector: (Float) -> Float):
Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

/**
 * Returns the smallest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is
 * `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun DoubleArray.minOf(selector: (Double) -> Float): Float {
    if (isEmpty()) throw
NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

/**
 * Returns the smallest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws
NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun BooleanArray.minOf(selector: (Boolean) ->
Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue =
minOf(minValue, v)
    }
    return minValue
}

/**
 * Returns the smallest value among all values produced
 * by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector]
 * function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharArray.minOf(selector: (Char) -> Float):
Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return
minValue
}

/**
 * Returns the smallest value among all values produced by
 * [selector] function
 * applied to each element in the array.
 * @throws NoSuchElementException if the array
 * is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R : Comparable<R>> Array<out
T>.minOf(selector: (T) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var minValue =
selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

/**
 * Returns the smallest value among all values produced
 * by [selector] function
 * applied to each element in the array.
 * @throws NoSuchElementException if the
 * array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>>
ByteArray.minOf(selector: (Byte) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var
minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

/**
 * Returns the smallest value among all values
 * produced by [selector] function
 * applied to each element in the array.
 * @throws
 */

```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nShortArray.minOf(selector: (Short) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n
```

* Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n
```

```
IntArray.minOf(selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue =\n    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n * by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the\n * array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n
```

```
inline fun <R : Comparable<R>> LongArray.minOf(selector: (Long) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the\n * array.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n
```

```
FloatArray.minOf(selector: (Float) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n            minValue\n            = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by\n * [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array\n * is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n
```

```
DoubleArray.minOf(selector: (Double) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values\n * produced by [selector] function\n * applied to each element in the array.\n * \n * @throws\n
```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n
```

```
inline fun <R : Comparable<R>> BooleanArray.minOf(selector: (Boolean) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the\n * array.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n
```

```
CharArray.minOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue\n    = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n
```

```

selector(this[i])\n    if (minValue > v) {\n        minValue = v\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\n result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOrNull(selector:\n (T) -> Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in\n 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array or `null` if there are no elements.\n * \n * If\n any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOrNull(selector: (Byte) ->\n Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns\n the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null`\n if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOrNull(selector:\n (Short) -> Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in\n 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOrNull(selector: (Int) ->\n Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns\n the smallest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of\n values produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOrNull(selector: (Long) -\n > Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns\n the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null`\n if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun FloatArray.minOrNull(selector: (Float) -> Double): Double? {\n    if (isEmpty()) return null\n    var\nminValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue =\nminOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of\n values produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOrNull(selector:

```

```

(Double) -> Double): Double? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOfOrNull(selector: (Boolean) -> Double): Double? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOfOrNull(selector: (Char) -> Double): Double? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOfOrNull(selector: (T) -> Float): Float? {\n  if (isEmpty())\n    return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOfOrNull(selector: (Byte) -> Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOfOrNull(selector: (Short) -> Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOfOrNull(selector: (Int) -> Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```

```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOrNull(selector: (Long) -
> Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOrNull(selector: (Float) ->
Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result
is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.minOrNull(selector: (Double) -> Float): Float? {\n  if (isEmpty()) return null\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =
minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n *
If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOrNull(selector:
(Boolean) -> Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n
for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOrNull(selector: (Char) ->
Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out
T>.minOrNull(selector: (T) -> R): R? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n
for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n      minValue = v\n    }\n
}\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ByteArray.minOrNull(selector: (Byte) -> R): R? {\n  if (isEmpty()) return null\n  var minValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
minValue = v\n    }\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

```

```

ShortArray.minOrNull(selector: (Short) -> R): R? {\n  if (isEmpty()) return null\n  var minValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> IntArray.minOrNull(selector: (Int) -> R): R? {\n  if (isEmpty()) return null\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v)
{\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
LongArray.minOrNull(selector: (Long) -> R): R? {\n  if (isEmpty()) return null\n  var minValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.minOrNull(selector: (Float) -> R): R? {\n  if (isEmpty()) return null\n  var minValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> DoubleArray.minOrNull(selector: (Double) -> R): R? {\n  if (isEmpty())
return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(minValue > v) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value
among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no
elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.minOrNull(selector: (Boolean) -> R): R? {\n  if (isEmpty()) return null\n  var minValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
minValue = v\n    }\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.minOrNull(selector: (Char) -> R): R? {\n  if (isEmpty()) return null\n  var minValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Array<out T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n  if
(isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n
}

```



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return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.minOfWith(comparator: Comparator<in R>, selector: (Byte) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.minOfWith(comparator: Comparator<in R>, selector: (Short) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.minOfWith(comparator: Comparator<in R>, selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.minOfWith(comparator: Comparator<in R>, selector: (Long) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.minOfWith(comparator: Comparator<in R>, selector: (Float) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.minOfWith(comparator: Comparator<in R>, selector: (Double) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n}

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    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all
values produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.minOfWith(comparator:
Comparator<in R>, selector: (Boolean) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException
if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.minOfWith(comparator:
Comparator<in R>, selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.minOfWithOrNull(comparator: Comparator<in R>,
selector: (T) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex)
{\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among
all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {\n    if (isEmpty()) return
null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {\n    if (isEmpty())
return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Int) -> R): R? {\n    if
(isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>

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LongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\n  if (isEmpty()) return\n  null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/* Returns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nFloatArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {\n  if (isEmpty()) return\n  null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/* Returns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nDoubleArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\n  if (isEmpty())\n  return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/* Returns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun <R> BooleanArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n  selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue\n}\n\n/* Returns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nCharArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n  if (isEmpty()) return\n  null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue,\n  v) > 0) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/* Returns the smallest element or `null` if there are no elements.\n\n*/\n\n/* If any of elements is `NaN` returns `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\npublic fun Array<out Double>.minOrNull(): Double? {\n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    min = minOf(min, e)\n  }\n  return\n  min\n}\n\n/* Returns the smallest element or `null` if there are no elements.\n\n*/\n\n/* If any of elements is `NaN` returns `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\npublic fun Array<out Float>.minOrNull(): Float? {\n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    min = minOf(min,\n  e)\n  }\n  return min\n}\n\n/* Returns the smallest element or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Array<out T>.minOrNull():\n  T? {\n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n/* Returns the smallest element or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\npublic fun ByteArray.minOrNull(): Byte? {\n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return\n  min\n}\n\n/* Returns the smallest element or `null` if there are no elements.\n\n*/\n\n@SinceKotlin("1.4")\npublic fun ShortArray.minOrNull(): Short? {\n  if (isEmpty()) return null\n  var min =\n  this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n/* Returns the smallest element or `null` if there are no elements.\n\n*/

```

```

Returns the smallest element or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
IntArray.minOrNull(): Int? {
    if (isEmpty()) return null
    var min =
    this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}
Returns the smallest element or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
LongArray.minOrNull(): Long? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}
Returns the smallest element or `null` if
there are no elements.
* If any of elements is `NaN` returns `NaN`.
* Since Kotlin("1.4")
public fun
FloatArray.minOrNull(): Float? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        min = minOf(min, e)
    }
    return min
}
Returns the smallest element or `null`
if there are no elements.
* If any of elements is `NaN` returns `NaN`.
* Since Kotlin("1.4")
public fun
DoubleArray.minOrNull(): Double?
{
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        min =
        minOf(min, e)
    }
    return min
}
Returns the smallest element or `null` if there are no elements.
* Since Kotlin("1.4")
public fun CharArray.minOrNull(): Char? {
    if (isEmpty()) return null
    var min =
    this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}
Returns the first element having the smallest value according to the provided [comparator].
* @throws
NoSuchElementException if the array is empty.
* Since Kotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVER
LOADS")
public fun <T> Array<out T>.minWith(comparator: Comparator<in T>): T {
    if (isEmpty()) throw
    NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if
        (comparator.compare(min, e)
        > 0) min = e
    }
    return min
}
Returns the first element having the smallest value according to the
provided [comparator].
* @throws NoSuchElementException if the array is empty.
* Since Kotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVER
LOADS")
public fun ByteArray.minWith(comparator: Comparator<in Byte>): Byte {
    if (isEmpty()) throw
    NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if
        (comparator.compare(min, e) > 0) min = e
    }
    return min
}
Returns the first element having the
smallest value according to the provided [comparator].
* @throws NoSuchElementException if the array is
empty.
* Since Kotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVER
LOADS")
public fun ShortArray.minWith(comparator: Comparator<in Short>): Short {
    if (isEmpty()) throw
    NoSuchElementException()
    var min
    = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
Returns the first element having the smallest value according to the provided
[comparator].
* @throws NoSuchElementException if the array is empty.
* Since Kotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVER
LOADS")
public fun IntArray.minWith(comparator: Comparator<in Int>): Int {
    if (isEmpty()) throw
    NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if
        (comparator.compare(min, e) > 0) min = e
    }
    return min
}
Returns the first element having the
smallest value according to the provided [comparator].
* @throws NoSuchElementException if the array is
empty.
* Since Kotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVER
LOADS")
public fun LongArray.minWith(comparator:
    Comparator<in Long>): Long {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i
    in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return
    min
}
Returns the first element having the smallest value according to the provided [comparator].
* @throws
NoSuchElementException if the array is empty.
* Since Kotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVER

```

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LOADS`)
public fun FloatArray.minWith(comparator: Comparator<in Float>): Float {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator].
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun DoubleArray.minWith(comparator: Comparator<in Double>): Double {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator].
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun BooleanArray.minWith(comparator: Comparator<in Boolean>): Boolean {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator].
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun CharArray.minWith(comparator: Comparator<in Char>): Char {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun <T> Array<out T>.minWithOrNull(comparator: Comparator<in T>): T? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun ByteArray.minWithOrNull(comparator: Comparator<in Byte>): Byte? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun ShortArray.minWithOrNull(comparator: Comparator<in Short>): Short? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun IntArray.minWithOrNull(comparator: Comparator<in Int>): Int? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun LongArray.minWithOrNull(comparator: Comparator<in Long>): Long? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun FloatArray.minWithOrNull(comparator: Comparator<in Float>): Float? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
public fun DoubleArray.minWithOrNull(comparator: Comparator<in Double>):

```



```

true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun
BooleanArray.none(predicate: (Boolean) -> Boolean): Boolean {\n    for (element in this) if (predicate(element))
return false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun CharArray.none(predicate:
(Char) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return false\n    return
true\n}\n\n/**\n * Performs the given [action]
on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.onEach(action: (T) ->
Unit): Array<out T> {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.onEach(action: (Byte) ->
Unit): ByteArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.onEach(action: (Short) ->
Unit): ShortArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.onEach(action: (Int) -> Unit): IntArray {\n    return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.onEach(action: (Long) ->
Unit): LongArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.onEach(action: (Float) ->
Unit): FloatArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.onEach(action: (Double) ->
Unit): DoubleArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.onEach(action: (Boolean)
-> Unit): BooleanArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.onEach(action: (Char) ->
Unit): CharArray {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element, providing sequential index with the element,\n * and returns the array itself afterwards.\n *
@param [action] function that takes the index of an element and the element itself\n * and performs the action on
the element.\n *\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.onEachIndexed(action: (index: Int, T) -> Unit):
Array<out T> {\n    return apply { forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each
element, providing sequential index with the element,\n * and returns the array itself afterwards.\n *
@param [action] function that takes the index of an element and the element itself\n * and performs the action on the
element.\n *\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.onEachIndexed(action: (index: Int, Byte) -> Unit): ByteArray {\n    return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n *
@param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.onEachIndexed(action:
(index: Int, Short) -> Unit): ShortArray {\n    return apply { forEachIndexed(action)
}

```


* \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun ShortArray.reduce(operation: (acc: Short, Short) -> Short): Short {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun IntArray.reduce(operation: (acc: Int, Int) -> Int): Int {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun LongArray.reduce(operation: (acc: Long, Long) -> Long): Long {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun FloatArray.reduce(operation: (acc: Float, Float) -> Float): Float {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun DoubleArray.reduce(operation: (acc: Double, Double) -> Double): Double {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun BooleanArray.reduce(operation: (acc: Boolean, Boolean) -> Boolean): Boolean {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.

receiver is empty.

```

    @param [operation] function that takes current accumulator value and an element,
    and calculates the next accumulator value.
    @sample samples.collections.Collections.Aggregates.reduce
    ^\npublic inline fun CharArray.reduce(operation: (acc: Char, Char) -> Char): Char {
    \n if (isEmpty())
    \n throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n var accumulator = this[0]
    \n for (index in
    1..lastIndex) {
    \n accumulator = operation(accumulator, this[index])
    \n }
    \n return accumulator
    \n}
    \n
```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

    @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    and calculates the next accumulator value.
    @sample samples.collections.Collections.Aggregates.reduce
    ^\npublic inline fun <S, T : S> Array<out T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {
    \n if (isEmpty())
    \n throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n var accumulator: S = this[0]
    \n for (index
    in 1..lastIndex) {
    \n accumulator = operation(index, accumulator, this[index])
    \n }
    \n return
    accumulator
    \n}
    \n
```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

    @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    and calculates the next accumulator value.
    @sample samples.collections.Collections.Aggregates.reduce
    ^\npublic inline fun ByteArray.reduceIndexed(operation: (index: Int, acc: Byte, Byte) -> Byte): Byte {
    \n if (isEmpty())
    \n throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n var accumulator = this[0]
    \n for (index in
    1..lastIndex) {
    \n accumulator = operation(index, accumulator, this[index])
    \n }
    \n return
    accumulator
    \n}
    \n
```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

    @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    and calculates the next accumulator value.
    @sample samples.collections.Collections.Aggregates.reduce
    ^\npublic inline fun ShortArray.reduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): Short {
    \n if (isEmpty())
    \n throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n var accumulator = this[0]
    \n for (index in
    1..lastIndex) {
    \n accumulator = operation(index, accumulator, this[index])
    \n }
    \n return
    accumulator
    \n}
    \n
```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

    @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    and calculates the next accumulator value.
    @sample samples.collections.Collections.Aggregates.reduce
    ^\npublic inline fun IntArray.reduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): Int {
    \n if (isEmpty())
    \n throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n var accumulator = this[0]
    \n for (index in
    1..lastIndex) {
    \n accumulator = operation(index, accumulator, this[index])
    \n }
    \n return
    accumulator
    \n}
    \n
```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

    @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    and calculates the next accumulator value.
    @sample samples.collections.Collections.Aggregates.reduce
    ^\npublic inline fun LongArray.reduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): Long {
    \n if (isEmpty())
    \n throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n var accumulator = this[0]
    \n for (index in
    1..lastIndex) {
    \n accumulator = operation(index, accumulator, this[index])
    \n }
    \n return
    accumulator
    \n}
    \n
```

```

UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\n\npublic inline fun FloatArray.reduceIndexed(operation: (index: Int, acc: Float, Float) -> Float): Float {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\n\npublic inline fun DoubleArray.reduceIndexed(operation: (index: Int, acc: Double, Double) -> Double): Double {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\n\npublic inline fun BooleanArray.reduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): Boolean {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\n\npublic inline fun CharArray.reduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): Char {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n */\n\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Array<out T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {\n    if (isEmpty())\n        return

```

```

null\n  var accumulator: S = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index,
accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first
element and applying [operation] from left to right\n * to current accumulator value and each element with its index
in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun ByteArray.reduceIndexedOrNull(operation: (index: Int, acc: Byte,
Byte) -> Byte): Byte? {\n  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for (index in
1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun ShortArray.reduceIndexedOrNull(operation: (index: Int, acc: Short,
Short) -> Short): Short? {\n  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for (index in
1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun IntArray.reduceIndexedOrNull(operation: (index: Int, acc: Int, Int) -> Int): Int? {\n
  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator =
operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun LongArray.reduceIndexedOrNull(operation: (index: Int, acc: Long,
Long) -> Long): Long? {\n  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for (index in
1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun FloatArray.reduceIndexedOrNull(operation: (index: Int, acc: Float, Float) -> Float): Float? {\n  if (isEmpty())\n
return null\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index,
accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first
element and applying [operation] from left to right\n * to current accumulator value
and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value and the element itself,\n * and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun DoubleArray.reduceIndexedOrNull(operation: (index: Int, acc:
Double, Double) -> Double): Double? {\n  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for
(index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to

```

```

right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun
BooleanArray.reduceIndexedOrNull(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): Boolean? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\npublic inline fun CharArray.reduceIndexedOrNull(operation: (index: Int, acc: Char,
Char) -> Char): Char? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n if (isEmpty())\n return null\n var
accumulator:
S = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ByteArray.reduceOrNull(operation: (acc: Byte, Byte) -> Byte): Byte? {\n if (isEmpty())\n return null\n var
accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying
[operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array
is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ShortArray.reduceOrNull(operation: (acc: Short, Short) -> Short): Short? {\n if (isEmpty())\n return null\n
var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n
*\n * @param [operation] function that takes current accumulator value and an element,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
IntArray.reduceOrNull(operation: (acc: Int, Int) -> Int): Int? {\n if (isEmpty())\n return null\n var
accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n
*\n * @param [operation] function that takes current accumulator value and an element,\n
* and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n

```

```

*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun
LongArray.reduceOrNull(operation:
    (acc: Long, Long) -> Long): Long? {^n    if (isEmpty())^n        return null^n    var accumulator = this[0]^n    for
    (index in 1..lastIndex) {^n        accumulator = operation(accumulator, this[index])^n    }^n    return
    accumulator^n}^n/n/**^n * Accumulates value starting with the first element and applying [operation] from left to
    right^n * to current accumulator value and each element.^n * ^n * Returns `null` if the array is empty.^n * ^n *
    @param [operation] function that takes current accumulator value and an element,^n * and calculates the next
    accumulator value.^n * ^n * @sample samples.collections.Collections.Aggregates.reduceOrNull^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun
FloatArray.reduceOrNull(operation: (acc: Float, Float) -> Float): Float? {^n    if (isEmpty())^n        return null^n    var
    accumulator = this[0]^n    for (index in 1..lastIndex) {^n        accumulator = operation(accumulator, this[index])^n
    }^n    return accumulator^n}^n/n/**^n * Accumulates value starting with the first element and applying [operation]
    from left to right^n * to current accumulator value and each element.^n * ^n * Returns `null` if the array is empty.^n *
    ^n * @param [operation] function that takes current accumulator value and an element,^n * and calculates the next
    accumulator value.^n * ^n * @sample samples.collections.Collections.Aggregates.reduceOrNull^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun
DoubleArray.reduceOrNull(operation: (acc: Double, Double) -> Double): Double? {^n    if (isEmpty())^n        return
    null^n    var accumulator = this[0]^n    for (index in 1..lastIndex) {^n        accumulator = operation(accumulator,
    this[index])^n    }^n    return accumulator^n}^n/n/**^n * Accumulates value starting with the first element and
    applying [operation] from left to right^n * to current accumulator value and each element.^n * ^n * Returns
    `null` if the array is empty.^n * ^n * @param [operation] function that takes current accumulator value and an
    element,^n * and calculates the next accumulator value.^n * ^n * @sample
    samples.collections.Collections.Aggregates.reduceOrNull^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun
BooleanArray.reduceOrNull(operation: (acc: Boolean, Boolean) -> Boolean): Boolean? {^n    if (isEmpty())^n        return
    null^n    var accumulator = this[0]^n    for (index in 1..lastIndex) {^n        accumulator =
    operation(accumulator, this[index])^n    }^n    return accumulator^n}^n/n/**^n * Accumulates value starting with the
    first element and applying [operation] from left to right^n * to current accumulator value and each element.^n * ^n *
    Returns `null` if the array is empty.^n * ^n * @param [operation] function that takes current accumulator value and
    an element,^n * and calculates the next accumulator value.^n * ^n * @sample
    samples.collections.Collections.Aggregates.reduceOrNull^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun
CharArray.reduceOrNull(operation: (acc: Char, Char) -> Char): Char? {^n    if (isEmpty())^n        return null^n    var
    accumulator = this[0]^n    for (index in 1..lastIndex) {^n        accumulator = operation(accumulator, this[index])^n
    }^n    return accumulator^n}^n/n/**^n * Accumulates value starting with the last element and applying [operation]
    from right to left^n * to each element and current accumulator value.^n * ^n * Throws an exception if this array is
    empty. If the array can be empty in an expected way,^n * please use [reduceRightOrNull] instead. It returns `null`
    when its receiver is empty.^n * ^n * @param [operation] function that takes an element and current accumulator
    value,^n * and calculates the next accumulator value.^n * ^n * @sample
    samples.collections.Collections.Aggregates.reduceRight^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun <S, T : S> Array<out
    T>.reduceRight(operation: (T, acc: S) -> S): S {^n    var index = lastIndex^n    if (index < 0) throw
    UnsupportedOperationException("Empty array can't be reduced.")^n    var accumulator: S = get(index--)^n    while
    (index >= 0) {^n        accumulator = operation(get(index--), accumulator)^n    }^n    return accumulator^n}^n/n/**^n *
    Accumulates value starting with the last element and applying [operation] from right to left^n * to each element and
    current accumulator value.^n * ^n * Throws an exception if this array is empty. If the array can be empty in an
    expected way,^n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.^n * ^n *
    @param [operation] function that takes an element and current accumulator value,^n * and calculates the next
    accumulator value.^n * ^n * @sample samples.collections.Collections.Aggregates.reduceRight^n
*^@npublic inline

```

```

fun ByteArray.reduceRight(operation: (Byte, acc: Byte) -> Byte): Byte {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduceRight

```

```

public inline fun ShortArray.reduceRight(operation: (Short, acc: Short) -> Short): Short {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduceRight

```

```

public inline fun IntArray.reduceRight(operation: (Int, acc: Int) -> Int): Int {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduceRight

```

```

public inline fun LongArray.reduceRight(operation: (Long, acc: Long) -> Long): Long {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduceRight

```

```

public inline fun FloatArray.reduceRight(operation: (Float, acc: Float) -> Float): Float {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduceRight

```

```

public inline fun DoubleArray.reduceRight(operation: (Double, acc: Double) -> Double): Double {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and

current accumulator

value.
* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.

@sample samples.collections.Collections.Aggregates.reduceRight

```
BooleanArray.reduceRight(operation: (Boolean, acc: Boolean) -> Boolean): Boolean {  
    var index = lastIndex  
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")  
    var accumulator = get(index--)  
    while (index >= 0) {  
        accumulator = operation(get(index--), accumulator)  
    }  
    return accumulator  
}
```

* Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.
* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
* @sample

```
samples.collections.Collections.Aggregates.reduceRight  
public inline fun CharArray.reduceRight(operation: (Char, acc: Char) -> Char): Char {  
    var index = lastIndex  
    if (index < 0) throw
```

```
UnsupportedOperationException("Empty array can't be reduced.")  
    var accumulator = get(index--)  
    while (index >= 0) {  
        accumulator = operation(get(index--), accumulator)  
    }  
    return accumulator  
}
```

* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
* Throws an exception if this array is empty. If the array can be empty in an expected way,

* please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
* @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
* @sample samples.collections.Collections.Aggregates.reduceRight
* public inline fun <S, T : S> Array<out T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {
 var index = lastIndex
 if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
 var accumulator: S = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
* Throws an exception if this array is empty. If the

array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
* @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
* @sample

samples.collections.Collections.Aggregates.reduceRight

```
public inline fun ByteArray.reduceRightIndexed(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte {  
    var index = lastIndex  
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")  
    var accumulator = get(index--)  
    while (index >= 0) {  
        accumulator = operation(index, get(index), accumulator)  
        --index  
    }  
    return accumulator  
}
```

* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
* Throws an exception

if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
* @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

@sample samples.collections.Collections.Aggregates.reduceRight

```
public inline fun ShortArray.reduceRightIndexed(operation: (index: Int, Short, acc: Short) -> Short): Short {  
    var index = lastIndex  
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")  
    var accumulator = get(index--)  
    while (index >= 0) {  
        accumulator = operation(index, get(index), accumulator)  
        --index  
    }  
    return accumulator  
}
```

* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and

current

accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample

samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun

```
IntArray.reduceRightIndexed(operation: (index: Int, Int, acc: Int) -> Int): Int {\n    var index = lastIndex\n    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with its index
```

in the original array and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample

samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun

```
LongArray.reduceRightIndexed(operation: (index: Int, Long, acc: Long) -> Long): Long {\n    var index = lastIndex\n    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n
```

* to each element with its index in the original array and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun

```
FloatArray.reduceRightIndexed(operation: (index: Int, Float, acc: Float) -> Float): Float {\n    var index = lastIndex\n    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element
```

and applying [operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample

samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun

```
DoubleArray.reduceRightIndexed(operation: (index: Int, Double, acc: Double) -> Double): Double {\n    var index = lastIndex\n    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates
```

value starting with the last element and applying [operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample

samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun

```
BooleanArray.reduceRightIndexed(operation: (index: Int, Boolean, acc: Boolean) -> Boolean): Boolean {\n    var
```

```

index = lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n
var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),\n
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]\n
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use\n
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]\n
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the\n
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic\n
inline fun CharArray.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {\n  var index =\n
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var\n
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index,\n
get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with\n
the last element and applying [operation] from right to left\n * to each element with its index in the original\n
array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation]\n
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the\n
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Array<out T>.reduceRightIndexedOrNull(operation:\n
(index: Int, T, acc: S) -> S): S? {\n  var index = lastIndex\n  if (index < 0) return null\n  var accumulator: S =\n
get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n
  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element\n
and applying [operation] from right to left\n * to each element with its index in the original array and current\n
accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation]\n
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the\n
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun ByteArray.reduceRightIndexedOrNull(operation: (index: Int, Byte,\n
acc: Byte) -> Byte): Byte? {\n  var index = lastIndex\n  if (index < 0) return null\n  var accumulator = get(index-\n
-)\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from\n
right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation]\n
function that takes the index of an element,\n
the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample\n
samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\npublic inline fun\n
ShortArray.reduceRightIndexedOrNull(operation: (index: Int, Short, acc: Short) -> Short): Short? {\n  var index =\n
lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n\n
accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with\n
its index in the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation]\n
function that takes the index of an element, the element\n
itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample\n
samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\npublic inline fun\n
IntArray.reduceRightIndexedOrNull(operation: (index: Int, Int, acc: Int) -> Int): Int? {\n  var index = lastIndex\n
if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =\n
operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates\n
value starting with the last element and applying [operation] from right to left\n * to each element with its index in\n
the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param\n
[operation]\n
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the\n
next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun LongArray.reduceRightIndexedOrNull(operation: (index: Int, Long,
acc: Long) -> Long): Long? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator =
get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the
element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
FloatArray.reduceRightIndexedOrNull(operation: (index: Int,
Float, acc: Float) -> Float): Float? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator =
get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the
element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
DoubleArray.reduceRightIndexedOrNull(operation: (index: Int, Double, acc: Double) -> Double): Double? {\n    var
index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from
right to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns
`null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element
itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
BooleanArray.reduceRightIndexedOrNull(operation: (index: Int, Boolean, acc: Boolean) -> Boolean): Boolean? {\n    var
index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the
element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
CharArray.reduceRightIndexedOrNull(operation: (index: Int, Char, acc: Char) -> Char): Char? {\n    var index =
lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n *
to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n    var index = lastIndex\n    if (index < 0)
return null\n    var accumulator: S = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and

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calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ByteArray.reduceRightOrNull(operation: (Byte, acc: Byte) -> Byte): Byte? {\n  var index = lastIndex\n  if (index
< 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun ShortArray.reduceRightOrNull(operation: (Short, acc: Short) -> Short): Short? {\n  var index =
lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
IntArray.reduceRightOrNull(operation: (Int, acc: Int) -> Int): Int? {\n  var index = lastIndex\n  if (index < 0)
return null\n  var accumulator = get(index--)\n  while
(index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and
current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
LongArray.reduceRightOrNull(operation: (Long, acc: Long) -> Long): Long? {\n  var index = lastIndex\n  if
(index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from
right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
FloatArray.reduceRightOrNull(operation: (Float, acc: Float) -> Float): Float? {\n  var index = lastIndex\n  if
(index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
DoubleArray.reduceRightOrNull(operation: (Double, acc: Double) -> Double): Double? {\n  var index =
lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator

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value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun BooleanArray.reduceRightOrNull(operation: (Boolean, acc: Boolean) -> Boolean): Boolean? {\n var
index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharArray.reduceRightOrNull(operation: (Char, acc: Char) -> Char): Char? {\n var index = lastIndex\n if (index
< 0) return null\n var
accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n
}\n return accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R>
Array<out T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for
(element in
this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n } \n return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc`
value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.runningFold(initial: R,
operation: (acc: R, Byte) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n for (element
in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n } \n return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc`
value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.runningFold(initial: R,
operation: (acc: R, Short) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n } \n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.runningFold(initial: R,
operation: (acc: R, Int) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size +
1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.runningFold(initial: R,
operation: (acc: R, Long) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n
for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.runningFold(initial: R,
operation: (acc: R, Float) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n
for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n
}\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.runningFold(initial: R,
operation: (acc: R, Double) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator
= initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n
result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.runningFold(initial:
R, operation: (acc: R, Boolean) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator
= initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n
result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *

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otherwise it would affect the previous value in resulting list.

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\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.
\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold
\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.runningFold(initial: R,
operation: (acc: R, Char) -> R): List<R> {
\n if (isEmpty()) return listOf(initial)
\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }
\n var
accumulator = initial
\n for (element in this) {
\n accumulator = operation(accumulator, element)
\n
result.add(accumulator)
\n }
\n return result
\n}
\n\n/**
\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right
\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.
\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;
\n * otherwise it would affect the previous value in resulting list.
\n * \n * @param [operation]
function that takes the index of an element, current accumulator value
\n * and the element itself, and calculates the
next accumulator value.
\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold
\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R> Array<out T>.runningFoldIndexed(initial: R, operation:
(index: Int, acc: R, T) -> R): List<R> {
\n if (isEmpty()) return listOf(initial)
\n
val result = ArrayList<R>(size + 1).apply { add(initial) }
\n var accumulator = initial
\n for (index in indices)
{
\n accumulator = operation(index, accumulator, this[index])
\n result.add(accumulator)
\n }
\n return
result
\n}
\n\n/**
\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right
\n * to each element, its index in the original array and current accumulator value that starts with [initial]
value.
\n * \n * Note that `acc` value passed to [operation] function should not be mutated;
\n * otherwise it would
affect the previous value in resulting list.
\n * \n * @param [operation] function that takes the index of an element,
current accumulator value
\n * and the element itself, and calculates the next accumulator value.
\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold
\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.runningFoldIndexed(initial:
R, operation: (index: Int, acc: R, Byte) -> R): List<R> {
\n if (isEmpty()) return listOf(initial)
\n val result =
ArrayList<R>(size + 1).apply { add(initial) }
\n var accumulator = initial
\n for (index in indices) {
\n
accumulator = operation(index, accumulator, this[index])
\n result.add(accumulator)
\n }
\n return
result
\n}
\n\n/**
\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right
\n * to each element, its index in the original array and current accumulator value that starts with [initial]
value.
\n * \n * Note that `acc` value passed to [operation] function should not be mutated;
\n * otherwise it would
affect the previous value in resulting list.
\n * \n * @param [operation] function that takes the index of an element,
current accumulator value
\n * and the element itself, and calculates the next accumulator value.
\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold
\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ShortArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {
\n
if (isEmpty()) return listOf(initial)
\n val result = ArrayList<R>(size + 1).apply { add(initial) }
\n var accumulator
= initial
\n for (index in indices) {
\n accumulator = operation(index, accumulator, this[index])
\n
result.add(accumulator)
\n }
\n return result
\n}
\n\n/**
\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right
\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.
\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;
\n * otherwise it would affect the previous value in resulting list.
\n * \n * @param [operation]
function that takes the index of an element, current accumulator value
\n * and the element itself, and calculates the
next
accumulator value.
\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold
\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
IntArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): List<R> {
\n if (isEmpty()) return
listOf(initial)
\n val result = ArrayList<R>(size + 1).apply { add(initial) }
\n var accumulator = initial
\n for

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(index in indices) {
    accumulator = operation(index, accumulator, this[index])
    result.add(accumulator)
}
return result
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

* @sample samples.collections.Collections.Aggregates.runningFold

```

*
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <R>
LongArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {
    if (isEmpty())
        return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    var accumulator = initial
    for (index in indices) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

* @sample samples.collections.Collections.Aggregates.runningFold

```

*
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <R>
FloatArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): List<R> {
    if (isEmpty())
        return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    var accumulator = initial
    for (index in indices) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

* @sample samples.collections.Collections.Aggregates.runningFold

```

*
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <R>
DoubleArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {
    if (isEmpty())
        return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    var accumulator = initial
    for (index in indices) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

* @sample samples.collections.Collections.Aggregates.runningFold

```

*
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <R>
BooleanArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {
    if (isEmpty())
        return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    var accumulator = initial
    for (index in indices) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the

previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n * \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun <R>
CharArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index,
accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes current accumulator value and the element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public inline fun <S, T : S>
Array<out T>.runningReduce(operation: (acc: S, T) -> S): List<S> {\n if (isEmpty()) return emptyList()\n var
accumulator: S = this[0]\n val result = ArrayList<S>(size).apply { add(accumulator) }\n for
(index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n
}\n return result\n }\n\n\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n * \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun ByteArray.runningReduce(operation:
(acc: Byte, Byte) -> Byte): List<Byte> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val
result = ArrayList<Byte>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n
return result\n }\n\n\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n * \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun ShortArray.runningReduce(operation:
(acc: Short, Short) -> Short): List<Short> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n
val result = ArrayList<Short>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n\n * Returns a list
containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n *
\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n * \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun IntArray.runningReduce(operation: (acc:
Int, Int) -> Int): List<Int> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result =
ArrayList<Int>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n * \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun LongArray.runningReduce(operation:
(acc: Long, Long) -> Long): List<Long> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n
val result = ArrayList<Long>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =

```

operation(accumulator, this[index])\n    result.add(accumulator)\n } \n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n *
\n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.runningReduce(operation:
(acc: Float, Float) -> Float): List<Float> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val
result = ArrayList<Float>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.runningReduce(operation: (acc: Double, Double) -> Double): List<Double> {\n    if
(isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Double>(size).apply {
add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n
result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.runningReduce(operation:
(acc: Boolean, Boolean) -> Boolean): List<Boolean> {\n
    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Boolean>(size).apply {
add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n
result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.runningReduce(operation:
(acc: Char, Char) -> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val
result = ArrayList<Char>(size).apply { add(accumulator)
}\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n
result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n@SinceKotlin("1.4")\npublic inline fun <S, T :
S> Array<out T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n    if (isEmpty()) return
emptyList()\n
    var accumulator: S = this[0]\n    val result = ArrayList<S>(size).apply { add(accumulator) }\n    for (index in 1
until size) {\n        accumulator = operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that

```

starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n

```

*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.runningReduceIndexed(operation: (index: Int, acc: Byte, Byte) -> Byte): List<Byte> {\n  if (isEmpty())
return emptyList()\n  var accumulator = this[0]\n
    val result = ArrayList<Byte>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator
= operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each element, its index in the original array and current accumulator value that starts with the first element of this
array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and
the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.runningReduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): List<Short> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<Short>(size).apply
{ add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator,
this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.runningReduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): List<Int> {\n  if (isEmpty()) return
emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<Int>(size).apply { add(accumulator)
}\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that
takes the index of an element, current accumulator value\n * and the element itself, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.runningReduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): List<Long> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<Long>(size).apply {
add(accumulator) }\n  for (index in 1 until
size) {\n    accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.runningReduceIndexed(operation: (index: Int, acc: Float, Float) -> Float): List<Float> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<Float>(size).apply {
add(accumulator) }\n  for (index in 1 until size) {\n    accumulator
= operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each element, its index in the original array and current accumulator value that starts with the first element of this

```

```

array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and
the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.runningReduceIndexed(operation: (index: Int, acc: Double, Double) -> Double): List<Double> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Double>(size).apply {
add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index,
accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element,
its index in the original array and current accumulator value that starts with the first element of this array.\n * \n *
@param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.runningReduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): List<Boolean>
{\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result =
ArrayList<Boolean>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(index, accumulator,
this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.runningReduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): List<Char> {\n if (isEmpty())
return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Char>(size).apply { add(accumulator)
}\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Array<out T>.scan(initial: R, operation: (acc: R, T) -> R): List<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.scan(initial: R, operation: (acc: R, Byte) -> R): List<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param

```

[operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly
public inline fun <R> ShortArray.scan(initial: R, operation: (acc: R, Short) -> R): List<R> {
    return runningFold(initial, operation)
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly
public inline fun <R> IntArray.scan(initial: R, operation: (acc: R, Int) -> R): List<R> {
    return runningFold(initial, operation)
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly
public inline fun <R> LongArray.scan(initial: R, operation: (acc: R, Long) -> R): List<R> {
    return runningFold(initial, operation)
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly
public inline fun <R> FloatArray.scan(initial: R, operation: (acc: R, Float) -> R): List<R> {
    return runningFold(initial, operation)
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly
public inline fun <R> DoubleArray.scan(initial: R, operation: (acc: R, Double) -> R): List<R> {
    return runningFold(initial, operation)
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly
public inline fun <R> BooleanArray.scan(initial: R, operation: (acc: R, Boolean) -> R): List<R> {
    return runningFold(initial, operation)
}

```

* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.

* @param [operation] function that takes current accumulator value

and an element, and calculates the next accumulator value.

`samples.collections.Collections.Aggregates.scan`

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.scan(initial: R, operation: (acc: R, Char) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.scan
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R> Array<out T>.scanIndexed(initial:
```

```
R, operation: (index: Int, acc: R, T) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.scan
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): List<R> {\n    return runningFoldIndexed(initial,
```

```
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.scan
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
```

```
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.scan
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator
```

```
value that starts with [initial] value.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.scan
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {\n    return
```

```

runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): List<R> {\n
return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {\n
return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
\n * @param [operation]
function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {\n
return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
\n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n
return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n * \n@Deprecated("Use sumOf instead.")\n
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Array<out T>.sumBy(selector: (T) -> Int): Int {\n
var sum: Int = 0\n
for (element in this) {\n
sum +=
selector(element)\n
}\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n * \n@Deprecated("Use sumOf instead.")\n
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
ByteArray.sumBy(selector:
(Byte) -> Int): Int {\n
var sum: Int = 0\n
for (element in this) {\n
sum += selector(element)\n
}\n
return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n * \n@Deprecated("Use sumOf instead.")\n
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
ShortArray.sumBy(selector: (Short) -> Int): Int {\n
var sum: Int = 0\n
for (element in this) {\n
sum +=
selector(element)\n
}\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function

```

applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
IntArray.sumBy(selector: (Int) -> Int): Int {
    var sum: Int = 0
    for (element in this) {
        sum +=
selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince =
"1.5")
public inline fun LongArray.sumBy(selector: (Long) -> Int): Int {
    var sum: Int = 0
    for (element in
this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
FloatArray.sumBy(selector: (Float) -> Int): Int {
    var sum: Int = 0
    for (element in this) {
        sum +=
selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince
= "1.5")
public inline fun DoubleArray.sumBy(selector: (Double) -> Int): Int {
    var sum: Int = 0
    for
(element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
BooleanArray.sumBy(selector: (Boolean) -> Int): Int {
    var sum: Int = 0
    for (element in this) {
        sum +=
selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
CharArray.sumBy(selector: (Char) -> Int): Int {
    var sum: Int = 0
    for
(element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf
instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
<T> Array<out T>.sumByDouble(selector: (T) -> Double): Double {
    var sum: Double = 0.0
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
ByteArray.sumByDouble(selector: (Byte) -> Double): Double {
    var sum: Double = 0.0
    for (element in this)
{
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
ShortArray.sumByDouble(selector: (Short) -> Double): Double {
    var sum: Double = 0.0
    for (element in this)
{
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
IntArray.sumByDouble(selector: (Int) -> Double): Double {
    var sum: Double = 0.0
    for (element in this) {
        sum +=
selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince
= "1.5")
public inline fun LongArray.sumByDouble(selector: (Long) -> Double): Double {
    var sum: Double
= 0.0
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

@Deprecated("Use sumOf
instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
FloatArray.sumByDouble(selector: (Float) -> Double): Double {
    var sum: Double = 0.0
    for (element in
this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by


```

[selector] function applied to each element in the array.\n *\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
DoubleArray.sumByDouble(selector: (Double)
-> Double): Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n *\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
BooleanArray.sumByDouble(selector: (Boolean) -> Double): Double {\n    var sum: Double = 0.0\n    for (element
in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n *\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharArray.sumByDouble(selector: (Char) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Array<out T>.sumOf(selector: (T) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element
in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sumOf(selector: (Byte) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each
element in the array.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sumOf(selector: (Short) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each
element in the array.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.sumOf(selector: (Long) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n

```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun\nDoubleArray.sumOf(selector: (Double) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element\nin this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced\nby [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun\nBooleanArray.sumOf(selector: (Boolean) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for\n(element\nin this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced\nby [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun\nCharArray.sumOf(selector: (Char) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in\nthis) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by\n[selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>\nArray<out T>.sumOf(selector: (T) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element\nin this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced\nby [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun\nByteArray.sumOf(selector: (Byte) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=\nselector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\napplied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun\nShortArray.sumOf(selector: (Short) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=\nselector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]\nfunction applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun\nIntArray.sumOf(selector: (Int) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=\nselector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\napplied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun\nLongArray.sumOf(selector: (Long) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=\nselector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each\nelement in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun\nFloatArray.sumOf(selector: (Float) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=\nselector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\napplied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
```

```

ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sumOf(selector: (Double) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n
sum += selector(element)\n  }\n
  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector: (Boolean) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sumOf(selector: (Char) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n
sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Array<out T>.sumOf(selector: (T) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this)
{\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sumOf(selector: (Byte) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sumOf(selector: (Short) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns
the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.sumOf(selector: (Long) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the
sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sumOf(selector: (Double) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this)

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{\n    sum += selector(element)\n } \n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector: (Boolean) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the
sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sumOf(selector: (Char) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n
sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n
    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each
element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.sumOf(selector: (Byte) -> UInt): UInt {\n    var
sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.sumOf(selector: (Short) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sumOf(selector: (Int) -> UInt): UInt {\n    var
sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.sumOf(selector: (Long) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.sumOf(selector: (Float) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic

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inline fun DoubleArray.sumOf(selector: (Double) -> UInt): UInt {
    var sum: UInt = 0.toUInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfUInt")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun BooleanArray.sumOf(selector: (Boolean) -> UInt): UInt {
    var sum: UInt = 0.toUInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.sumOf(selector: (T) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun ByteArray.sumOf(selector: (Byte) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun ShortArray.sumOf(selector: (Short) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun IntArray.sumOf(selector: (Int) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun LongArray.sumOf(selector: (Long) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun FloatArray.sumOf(selector: (Float) -> ULong): ULong

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{\n var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.sumOf(selector: (Double) -> ULong): ULong {\n var sum: ULong = 0.toULong()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.sumOf(selector: (Boolean) -> ULong):
ULong {\n var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.sumOf(selector: (Char) -> ULong): ULong {\n var sum: ULong = 0.toULong()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns an original collection
containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.\n
*\npublic fun <T : Any> Array<T?>.requireNonNulls(): Array<T> {\n for (element in this) {\n if (element ==
null) {\n throw IllegalArgumentException("null element found in $this.")\n }\n }\n
}\n\n@Suppress("UNCHECKED_CAST")\n return this as Array<T>\n}\n\n/**\n * Splits the original array into pair
of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list
contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun <T> Array<out
T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {\n val first = ArrayList<T>()\n val second =
ArrayList<T>()\n for (element in this) {\n if (predicate(element)) {\n first.add(element)\n } else {\n
second.add(element)\n }\n }\n return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair
of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains
elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
ByteArray.partition(predicate: (Byte) -> Boolean): Pair<List<Byte>, List<Byte>> {\n val first =
ArrayList<Byte>()\n val second = ArrayList<Byte>()\n
for (element in this) {\n if (predicate(element)) {\n first.add(element)\n } else {\n
second.add(element)\n }\n }\n return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of
lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains
elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
ShortArray.partition(predicate: (Short) -> Boolean): Pair<List<Short>, List<Short>> {\n val first =
ArrayList<Short>()\n val second = ArrayList<Short>()\n for (element in this) {\n if (predicate(element)) {\n
first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate]
yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
IntArray.partition(predicate: (Int) -> Boolean): Pair<List<Int>, List<Int>> {\n val first = ArrayList<Int>()\n val

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second = ArrayList<Int>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
LongArray.partition(predicate: (Long) -> Boolean): Pair<List<Long>, List<Long>> {\n  val first =
ArrayList<Long>()\n  val second = ArrayList<Long>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
FloatArray.partition(predicate: (Float) -> Boolean): Pair<List<Float>, List<Float>> {\n  val first =
ArrayList<Float>()\n  val second = ArrayList<Float>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
DoubleArray.partition(predicate: (Double) -> Boolean): Pair<List<Double>, List<Double>> {\n  val first =
ArrayList<Double>()\n  val second = ArrayList<Double>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
BooleanArray.partition(predicate: (Boolean) -> Boolean):
Pair<List<Boolean>, List<Boolean>> {\n  val first = ArrayList<Boolean>()\n  val second =
ArrayList<Boolean>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    }
else {\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
CharArray.partition(predicate: (Char) -> Boolean): Pair<List<Char>, List<Char>> {\n  val first =
ArrayList<Char>()\n  val second = ArrayList<Char>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <T, R> Array<out T>.zip(other:
Array<out R>): List<Pair<T, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun
<R> ByteArray.zip(other: Array<out R>): List<Pair<Byte, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> ShortArray.zip(other: Array<out R>): List<Pair<Short, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the

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same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <R> IntArray.zip(other: Array<out R>): List<Pair<Int, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <R> LongArray.zip(other: Array<out R>): List<Pair<Long, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <R> FloatArray.zip(other: Array<out R>): List<Pair<Float, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <R> DoubleArray.zip(other: Array<out R>): List<Pair<Double, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <R> BooleanArray.zip(other: Array<out R>): List<Pair<Boolean, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <R> CharArray.zip(other: Array<out R>): List<Pair<Char, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterableWithTransform\n *^\npublic inline fun <T, R, V> Array<out T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterableWithTransform\n *^\npublic inline fun <R, V> ByteArray.zip(other: Array<out R>, transform: (a: Byte, b: R) -> V): List<V> {\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterableWithTransform\n *^\npublic inline fun <R, V> ShortArray.zip(other: Array<out R>, transform: (a: Short, b: R) -> V): List<V> {\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterableWithTransform\n *^\npublic inline fun <R, V> IntArray.zip(other: Array<out R>, transform: (a: Int, b: R) -> V): List<V> {\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample

samples.collections.Iterables.Operations.zipIterableWithTransform\n *^\npublic inline


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fun <R, V> LongArray.zip(other: Array<out R>, transform: (a: Long, b: R) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

Returns a list of values built from the elements of `this` array and the
[other] array with the same index
using the provided [transform] function applied to each pair of elements.
The returned list has length of the shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
FloatArray.zip(other:
Array<out R>, transform: (a: Float, b: R) -> V): List<V> {
    val size = minOf(size, other.size)
    val list =
ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return
list
}

Returns a list of values built from the elements of `this` array and the
[other] array with the same
index
using the provided [transform] function applied to each pair of elements.
The returned list has length
of the shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V> DoubleArray.zip(other: Array<out R>, transform: (a: Double, b: R) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

Returns a list of values built from the elements
of `this` array and the [other] array with the same index
using the provided [transform] function applied to each pair of elements.
The returned list has length of the
shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V> BooleanArray.zip(other: Array<out R>, transform: (a: Boolean, b: R) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

Returns a list of values built from the elements
of `this` array and the [other] array with the same index
using the provided [transform] function applied to each
pair of elements.
The returned list has length of the shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
CharArray.zip(other: Array<out R>, transform: (a: Char, b: R) -> V): List<V> {
    val size = minOf(size,
other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

Returns a list of pairs built from the elements of `this` collection and [other] array with
the same index.
The returned list has length of the shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <T, R> Array<out T>.zip(other:
Iterable<R>): List<Pair<T, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built
from the elements of `this` collection and [other] array with the same index.
The returned list has length of the
shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R>
ByteArray.zip(other: Iterable<R>): List<Pair<Byte, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection
and [other] array with the same index.
The returned list has length of the shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> ShortArray.zip(other: Iterable<R>):
List<Pair<Short, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the
elements of `this` collection and [other] array with the same index.
The returned list has length of the shortest
collection.
@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R>
IntArray.zip(other: Iterable<R>): List<Pair<Int, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.
The
returned list has length of the shortest collection.
@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> LongArray.zip(other: Iterable<R>):
List<Pair<Long, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the
elements of `this` collection and [other] array with the same index.
The returned list has length of the shortest
collection.
@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R>
FloatArray.zip(other: Iterable<R>): List<Pair<Float, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.
The

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returned list has length of the shortest collection.

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\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \npublic infix fun <R> DoubleArray.zip(other:
Iterable<R>): List<Pair<Double, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \npublic infix fun
<R> BooleanArray.zip(other: Iterable<R>): List<Pair<Boolean, R>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \npublic infix fun <R> CharArray.zip(other: Iterable<R>):
List<Pair<Char, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the
elements of `this` array and the [other] collection with the same index\n * using the provided [transform] function
applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <T, R, V> Array<out
T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n
if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline
fun <R, V> ByteArray.zip(other: Iterable<R>, transform: (a: Byte, b: R) -> V): List<V> {\n    val arraySize = size\n
val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in
other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++],
element))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the
[other] collection with the same index\n * using the provided [transform] function applied to each pair of
elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
ShortArray.zip(other: Iterable<R>, transform: (a: Short, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n
if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has
length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
IntArray.zip(other: Iterable<R>, transform: (a: Int, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n
if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline
fun <R, V> LongArray.zip(other: Iterable<R>, transform: (a: Long, b: R) -> V): List<V> {\n    val arraySize =
size\n    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10),
arraySize))\n    var i = 0\n    for (element in other) {\n        if (i >= arraySize) break\n
list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the
elements of `this` array and the [other] collection with the same index\n * using the provided [transform] function
applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
FloatArray.zip(other: Iterable<R>, transform: (a: Float, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n

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if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this`
array and the [other] collection with the same index\n * using the provided [transform] function applied to each pair
of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <R, V>
DoubleArray.zip(other: Iterable<R>, transform: (a: Double, b: R) -> V): List<V> {\n    val arraySize = size\n    val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other)
{\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n *
Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n *
using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic
inline fun <R, V> BooleanArray.zip(other: Iterable<R>, transform: (a: Boolean, b: R) -> V): List<V> {\n    val
arraySize = size\n    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n
for (element in other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n
return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the
same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has
length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <R, V>
CharArray.zip(other: Iterable<R>, transform: (a: Char, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n
if (i >=
arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a list of
pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic
infix fun ByteArray.zip(other: ByteArray): List<Pair<Byte, Byte>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun ShortArray.zip(other: ShortArray):
List<Pair<Short, Short>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic
infix fun IntArray.zip(other: IntArray): List<Pair<Int, Int>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun LongArray.zip(other: LongArray):
List<Pair<Long, Long>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun
FloatArray.zip(other: FloatArray): List<Pair<Float, Float>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun DoubleArray.zip(other: DoubleArray):
List<Pair<Double, Double>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun
BooleanArray.zip(other: BooleanArray): List<Pair<Boolean, Boolean>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same

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index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\npublic infix fun CharArray.zip(other: CharArray): List<Pair<Char, Char>> {\n  return zip(other) { t1, t2 -> t1
to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the
same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has
length of the shortest array.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V> ByteArray.zip(other: ByteArray, transform: (a: Byte, b: Byte) -> V): List<V> {\n  val
size = minOf(size, other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length
of the shortest array.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V> ShortArray.zip(other: ShortArray, transform: (a: Short, b: Short) -> V): List<V> {\n  val
size = minOf(size, other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V> IntArray.zip(other:
IntArray, transform: (a: Int, b: Int) -> V): List<V> {\n  val size = minOf(size, other.size)\n  val list =
ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n  }\n
return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with
the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list
has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V>
LongArray.zip(other: LongArray, transform: (a: Long, b: Long) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n
}\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun
<V> FloatArray.zip(other: FloatArray, transform: (a: Float, b: Float) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n
}\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V>
DoubleArray.zip(other: DoubleArray, transform: (a: Double, b: Double) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n
}\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with
the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list
has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V>
BooleanArray.zip(other: BooleanArray, transform: (a: Boolean, b: Boolean) -> V): List<V> {\n  val size =
minOf(size, other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i],
other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the
[other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n *
The returned list has length of the shortest array.\n * \n * @sample

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samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <V>
CharArray.zip(other: CharArray, transform: (a: Char, b: Char) -> V): List<V> {\n    val size = minOf(size,
    other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun
<T, A : Appendable> Array<out T>.joinTo(buffer: A, separator: CharSequence = "\", \"", prefix: CharSequence = "\"",
postfix: CharSequence = "\"", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? =
null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1)
buffer.append(separator)\n        if (limit < 0 ||
count <= limit) {\n            buffer.appendElement(element, transform)\n        } else break\n    }\n    if (limit >= 0 &&
count > limit) buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the
string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n
* If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first
[limit]\n * elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable>
ByteArray.joinTo(buffer: A, separator: CharSequence = "\", \"", prefix: CharSequence = "\"", postfix: CharSequence =
\"", limit: Int = -1, truncated: CharSequence = "...", transform: ((Byte) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count >
1) buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n
buffer.append(transform(element))\n        } else\n            buffer.append(element.toString())\n        } else break\n
}\n    if (limit >= 0 && count > limit) buffer.append(truncated)\n    buffer.append(postfix)\n    return
buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of
[limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which
defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A :
Appendable> ShortArray.joinTo(buffer: A, separator: CharSequence = "\", \"", prefix: CharSequence = "\"", postfix:
CharSequence = "\"", limit: Int = -1, truncated: CharSequence =
"...", transform: ((Short) -> CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n    for
(element in this) {\n        if (++count > 1) buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n
            if (transform != null)\n                buffer.append(transform(element))\n            else\n
buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)
buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable> IntArray.joinTo(buffer:
A, separator: CharSequence = "\", \"", prefix: CharSequence = "\"", postfix: CharSequence = "\"", limit: Int = -1,
truncated: CharSequence = "...", transform: ((Int) -> CharSequence)? = null): A {\n    buffer.append(prefix)\n    var
count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n        if (limit < 0 || count <=
limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n
buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)
buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated]

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string (which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n
*\npublic fun <A : Appendable> LongArray.joinTo(buffer: A, separator: CharSequence = "\", "\", prefix:
CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform:
((Long) -> CharSequence)? = null): A {\n  buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n
if (++count > 1) buffer.append(separator)\n    if (limit < 0 || count <= limit) {\n      if (transform != null)\n        buffer.append(transform(element))\n      else\n        buffer.append(element.toString())\n    } else
break\n  }\n  if (limit >= 0 && count > limit) buffer.append(truncated)\n  buffer.append(postfix)\n  return
buffer}\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n
*\npublic fun <A : Appendable>
FloatArray.joinTo(buffer: A, separator: CharSequence = "\", "\", prefix: CharSequence = "\", postfix: CharSequence =
\"", limit: Int = -1, truncated: CharSequence = "...", transform: ((Float) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count > 1) buffer.append(separator)\n
if (limit < 0 || count <= limit) {\n      if (transform != null)\n        buffer.append(transform(element))\n      else\n
buffer.append(element.toString())\n    } else break\n  }\n  if (limit >= 0 && count > limit)
buffer.append(truncated)\n  buffer.append(postfix)\n  return buffer}\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if
supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only
the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n *
@sample samples.collections.Collections.Transformations.joinTo\n
*\npublic fun <A : Appendable>
DoubleArray.joinTo(buffer: A, separator: CharSequence = "\", "\", prefix: CharSequence = "\", postfix:
CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((Double) -> CharSequence)? =
null): A {\n  buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count > 1)
buffer.append(separator)\n    if (limit < 0 || count <= limit) {\n      if (transform != null)\n
buffer.append(transform(element))\n      else\n        buffer.append(element.toString())\n    } else break\n  }\n  if (limit >= 0 && count > limit) buffer.append(truncated)\n  buffer.append(postfix)\n  return
buffer}\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of
[limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which
defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n
*\npublic fun <A :
Appendable> BooleanArray.joinTo(buffer: A, separator: CharSequence = "\", "\", prefix: CharSequence = "\",
postfix: CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((Boolean) ->
CharSequence)? = null): A {\n  buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count
> 1) buffer.append(separator)\n    if (limit < 0
|| count <= limit) {\n      if (transform != null)\n        buffer.append(transform(element))\n      else\n
buffer.append(element.toString())\n    } else break\n  }\n  if (limit >= 0 && count > limit)
buffer.append(truncated)\n  buffer.append(postfix)\n  return buffer}\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n
*\npublic fun <A : Appendable>
CharArray.joinTo(buffer: A, separator: CharSequence = "\", "\", prefix: CharSequence = "\", postfix: CharSequence =
\"", limit: Int = -1, truncated: CharSequence = "...", transform: ((Char) -> CharSequence)? = null):
A {\n  buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count > 1)
buffer.append(separator)\n    if (limit < 0 || count <= limit) {\n      if (transform != null)\n
buffer.append(transform(element))\n      else\n        buffer.append(element)\n    } else break\n  }\n  if

```

```

(limit >= 0 && count > limit) buffer.append(truncated)\n  buffer.append(postfix)\n  return buffer\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if
supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only
the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n *
@sample samples.collections.Collections.Transformations.joinToString\n * \n\npublic fun <T> Array<out
T>.joinToString(separator: CharSequence = "\", \", prefix: CharSequence
= "\", postfix: CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) ->
CharSequence)? = null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \n\npublic fun
ByteArray.joinToString(separator: CharSequence = "\", \", prefix: CharSequence = "\", postfix:
CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((Byte) -> CharSequence)? =
null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \n\npublic fun
ShortArray.joinToString(separator: CharSequence = "\", \", prefix: CharSequence = "\", postfix:
CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((Short) -> CharSequence)? =
null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can
specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed
by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n * \n\npublic fun IntArray.joinToString(separator:
CharSequence = "\", \", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = "...", transform: ((Int) -> CharSequence)? = null): String {\n  return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n *
Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be
appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n * \n\npublic fun LongArray.joinToString(separator:
CharSequence = "\", \", prefix: CharSequence = "\", postfix:
CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((Long) -> CharSequence)? =
null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \n\npublic fun
FloatArray.joinToString(separator: CharSequence = "\", \", prefix: CharSequence = "\", postfix:
CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform:
((Float) -> CharSequence)? = null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit,
truncated, transform).toString()\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and
using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-
negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the
[truncated] string (which defaults to "...").\n * \n * @sample

```

samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun DoubleArray.joinToString(separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Double) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated

using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample

samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun BooleanArray.joinToString(separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Boolean) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n

[limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample\n samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun CharArray.joinToString(separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Char) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun <T> Array<out T>.asIterable(): Iterable<T> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun

ByteArray.asIterable(): Iterable<Byte> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun ShortArray.asIterable(): Iterable<Short> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun IntArray.asIterable(): Iterable<Int> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun LongArray.asIterable(): Iterable<Long> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun FloatArray.asIterable(): Iterable<Float> {\n if (isEmpty())

return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun DoubleArray.asIterable(): Iterable<Double> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun BooleanArray.asIterable(): Iterable<Boolean> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original array returning its elements when being iterated.\n *^\\npublic fun CharArray.asIterable(): Iterable<Char> {\n if (isEmpty()) return emptyList()\n return Iterable { this.iterator() }\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n * \n * @sample samples.collections.Sequences.Building.sequenceFromArray\n *^\\npublic fun <T> Array<out T>.asSequence(): Sequence<T> {\n if (isEmpty()) return emptySequence()\n return Sequence { this.iterator() }\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n * \n * @sample samples.collections.Sequences.Building.sequenceFromArray\n *^\\npublic fun ByteArray.asSequence(): Sequence<Byte> {\n if (isEmpty()) return emptySequence()\n return Sequence { this.iterator() }\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n * \n * @sample samples.collections.Sequences.Building.sequenceFromArray\n


```

*^public fun ShortArray.asSequence(): Sequence<Short> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.
*^ @sample samples.collections.Sequences.Building.sequenceFromArray

*^public fun IntArray.asSequence(): Sequence<Int> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.
*^ @sample samples.collections.Sequences.Building.sequenceFromArray

*^public fun LongArray.asSequence(): Sequence<Long> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.
*^ @sample samples.collections.Sequences.Building.sequenceFromArray

*^public fun FloatArray.asSequence(): Sequence<Float> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.
*^ @sample samples.collections.Sequences.Building.sequenceFromArray

*^public fun DoubleArray.asSequence(): Sequence<Double> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.
*^ @sample samples.collections.Sequences.Building.sequenceFromArray

*^public fun BooleanArray.asSequence(): Sequence<Boolean> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.
*^ @sample samples.collections.Sequences.Building.sequenceFromArray

*^public fun CharArray.asSequence(): Sequence<Char> {
    if (isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

*^ Returns an average value of elements in the array.

*^@kotlin.jvm.JvmName("averageOfByte")
public fun Array<out Byte>.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^@kotlin.jvm.JvmName("averageOfShort")
public fun Array<out Short>.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^@kotlin.jvm.JvmName("averageOfInt")
public fun Array<out Int>.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^@kotlin.jvm.JvmName("averageOfLong")
public fun Array<out Long>.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^@kotlin.jvm.JvmName("averageOfFloat")
public fun Array<out Float>.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^@kotlin.jvm.JvmName("averageOfDouble")
public fun Array<out Double>.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^public fun ByteArray.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^public fun ShortArray.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^public fun IntArray.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this) {
        sum += element
        ++count
    }
    return if (count == 0) Double.NaN else sum / count
}

*^ Returns an average value of elements in the array.

*^public fun LongArray.average(): Double {
    var sum: Double = 0.0
    var count: Int = 0
    for (element in this)

```



```

or `null` if the progression is empty.\n *^@SinceKotlin("1.7")\npublic fun LongProgression.firstOrNull(): Long?
{\n    return if (isEmpty()) null else this.first\n}\n\n/**\n * Returns the first element, or `null` if the progression is
empty.\n *^@SinceKotlin("1.7")\npublic fun CharProgression.firstOrNull(): Char? {\n    return if (isEmpty())
null else this.first\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the
progression is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*^@SinceKotlin("1.7")\npublic fun IntProgression.last(): Int {\n    if (isEmpty())\n        throw
NoSuchElementException("Progression $this is empty.")\n    return this.last\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the progression is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^@SinceKotlin("1.7")\npublic fun LongProgression.last(): Long
{\n    if (isEmpty())\n        throw NoSuchElementException("Progression $this is empty.")\n    return this.last\n}\n\n/**\n * Returns the
last element.\n * \n * @throws NoSuchElementException if the progression is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^@SinceKotlin("1.7")\npublic fun CharProgression.last(): Char
{\n    if (isEmpty())\n        throw NoSuchElementException("Progression $this is empty.")\n    return
this.last\n}\n\n/**\n * Returns the last element, or `null` if the progression is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^@SinceKotlin("1.7")\npublic fun IntProgression.lastOrNull():
Int? {\n    return if (isEmpty()) null else this.last\n}\n\n/**\n * Returns the last element, or `null` if the progression is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n *^@SinceKotlin("1.7")\npublic fun
LongProgression.lastOrNull(): Long? {\n    return if (isEmpty()) null else this.last\n}\n\n/**\n * Returns
the last element, or `null` if the progression is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^@SinceKotlin("1.7")\npublic fun
CharProgression.lastOrNull(): Char? {\n    return if (isEmpty()) null else this.last\n}\n\n/**\n * Returns a random
element from this range.\n * \n * @throws IllegalArgumentException if this range is empty.\n
*^@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun IntRange.random(): Int {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this range.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *^@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun LongRange.random(): Long {\n    return random(Random)\n}\n\n/**\n * Returns a random element from
this range.\n * \n * @throws IllegalArgumentException if this range is empty.\n
*^@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharRange.random(): Char {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *^@SinceKotlin("1.3")\npublic fun
IntRange.random(random: Random): Int {\n    try {\n        return random.nextInt(this)\n    } catch(e:
IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *^@SinceKotlin("1.3")\npublic fun
LongRange.random(random: Random): Long {\n    try {\n        return random.nextLong(this)\n    } catch(e:
IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *^@SinceKotlin("1.3")\npublic fun
CharRange.random(random:
Random): Char {\n    try {\n        return random.nextInt(first.code, last.code + 1).toChar()\n    } catch(e:
IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a
random element from this range, or `null` if this range is empty.\n
*^@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun IntRange.randomOrNull(): Int? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random
element from this range, or `null` if this range is empty.\n
*^@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli

```

```

c inline fun LongRange.randomOrNull(): Long? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this range, or `null` if this range is empty.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun CharRange.randomOrNull():
Char? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range using the
specified source of randomness, or `null` if this range is empty.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
IntRange.randomOrNull(random: Random): Int? {\n    if (isEmpty())\n        return null\n    return
random.nextInt(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
LongRange.randomOrNull(random: Random): Long? {\n    if (isEmpty())\n        return null\n    return
random.nextLong(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharRange.randomOrNull(random: Random): Char? {\n    if
(isEmpty())\n        return null\n    return random.nextInt(first.code, last.code + 1).toChar()\n}\n\n/**\n * Returns
`true` if this range contains the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n
*\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator fun IntRange.contains(element:
Int?): Boolean {\n    return element != null && contains(element)\n}\n\n/**\n * Returns `true` if this range contains
the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n
*\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator fun LongRange.contains(element:
Long?): Boolean {\n    return element != null && contains(element)\n}\n\n/**\n * Returns `true` if this range
contains the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n
*\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator fun CharRange.contains(element:
Char?): Boolean {\n
    return element != null && contains(element)\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n\n@kotlin.jvm.JvmName("intRangeContains")\npublic operator fun ClosedRange<Int>.contains(value: Byte):
Boolean {\n    return contains(value.toInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n\n@kotlin.jvm.JvmName("longRangeContains")\npublic operator fun ClosedRange<Long>.contains(value:
Byte): Boolean {\n    return contains(value.toLong())\n}\n\n/**\n * Checks if the specified [value] belongs to this
range.\n *\n\n@kotlin.jvm.JvmName("shortRangeContains")\npublic operator fun
ClosedRange<Short>.contains(value: Byte): Boolean {\n    return contains(value.toShort())\n}\n\n/**\n * Checks if
the specified [value] belongs to this range.\n *\n\n@Deprecated("This `contains` operation mixing integer and
floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince
= "1.4", hiddenSince = "1.5")\n@kotlin.jvm.JvmName("doubleRangeContains")\npublic operator fun
ClosedRange<Double>.contains(value: Byte): Boolean {\n    return contains(value.toDouble())\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n *\n\n@Deprecated("This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince =
"1.5")\n@kotlin.jvm.JvmName("floatRangeContains")\npublic operator fun ClosedRange<Float>.contains(value:
Byte): Boolean {\n    return contains(value.toFloat())\n}\n\n/**\n * Checks if the specified [value] belongs to this
range.\n *\n\n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous
semantics and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4",
hiddenSince = "1.5")\n@kotlin.jvm.JvmName("intRangeContains")\npublic
operator fun ClosedRange<Int>.contains(value: Double): Boolean {\n    return value.toIntExactOrNull().let { if (it
!= null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n

```

```

*\n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince
= "1.5")\n@kotlin.jvm.JvmName("longRangeContains")\npublic operator fun
ClosedRange<Long>.contains(value: Double): Boolean {\n    return value.toLongExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince
= "1.5")\n@kotlin.jvm.JvmName("byteRangeContains")\npublic
operator fun ClosedRange<Byte>.contains(value: Double): Boolean {\n    return value.toByteExactOrNull().let { if
(it != null) contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince
= "1.5")\n@kotlin.jvm.JvmName("shortRangeContains")\npublic operator fun
ClosedRange<Short>.contains(value: Double): Boolean {\n    return value.toShortExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("floatRangeContains")\npublic operator fun ClosedRange<Float>.contains(value:
Double): Boolean {\n    return contains(value.toFloat())\n}\n\n**\n * Checks if the specified [value] belongs to this
range.\n
*\n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince
= "1.5")\n@kotlin.jvm.JvmName("intRangeContains")\npublic operator fun ClosedRange<Int>.contains(value:
Float): Boolean {\n    return value.toIntExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n**\n *
Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince =
"1.5")\n@kotlin.jvm.JvmName("longRangeContains")\npublic operator fun ClosedRange<Long>.contains(value:
Float): Boolean {\n    return value.toLongExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n**\n *
Checks if the specified [value] belongs
to this range.\n
*\n@Deprecated("This `contains` operation mixing integer and floating point arguments has
ambiguous semantics and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince
= "1.4", hiddenSince = "1.5")\n@kotlin.jvm.JvmName("byteRangeContains")\npublic operator fun
ClosedRange<Byte>.contains(value: Float): Boolean {\n    return value.toByteExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince
= "1.5")\n@kotlin.jvm.JvmName("shortRangeContains")\npublic operator fun
ClosedRange<Short>.contains(value: Float): Boolean {\n    return value.toShortExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the
specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("doubleRangeContains")\npublic operator
fun ClosedRange<Double>.contains(value: Float): Boolean {\n    return contains(value.toDouble())\n}\n\n**\n *
Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("longRangeContains")\npublic
operator fun ClosedRange<Long>.contains(value: Int): Boolean {\n    return contains(value.toLong())\n}\n\n**\n *
Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("byteRangeContains")\npublic
operator fun ClosedRange<Byte>.contains(value: Int): Boolean {\n    return value.toByteExactOrNull().let { if (it !=
null) contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("shortRangeContains")\npublic operator fun ClosedRange<Short>.contains(value: Int):
Boolean {\n    return value.toShortExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n**\n * Checks

```

if the specified [value] belongs to this range.\n *^@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`doubleRangeContains`)\npublic operator fun ClosedRange<Double>.contains(value: Int): Boolean {\n return contains(value.toDouble())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`floatRangeContains`)\npublic operator fun ClosedRange<Float>.contains(value: Int): Boolean {\n return contains(value.toFloat())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@kotlin.jvm.JvmName(`intRangeContains`)\npublic operator fun ClosedRange<Int>.contains(value: Long): Boolean {\n return value.toIntExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@kotlin.jvm.JvmName(`byteRangeContains`)\npublic operator fun ClosedRange<Byte>.contains(value: Long): Boolean {\n return value.toByteExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@kotlin.jvm.JvmName(`shortRangeContains`)\npublic operator fun ClosedRange<Short>.contains(value: Long): Boolean {\n return value.toShortExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`doubleRangeContains`)\npublic operator fun ClosedRange<Double>.contains(value: Long): Boolean {\n return contains(value.toDouble())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`floatRangeContains`)\npublic operator fun ClosedRange<Float>.contains(value: Long): Boolean {\n return contains(value.toFloat())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@kotlin.jvm.JvmName(`intRangeContains`)\npublic operator fun ClosedRange<Int>.contains(value: Short): Boolean {\n return contains(value.toInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@kotlin.jvm.JvmName(`longRangeContains`)\npublic operator fun ClosedRange<Long>.contains(value: Short): Boolean {\n return contains(value.toLong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@kotlin.jvm.JvmName(`byteRangeContains`)\npublic operator fun ClosedRange<Byte>.contains(value: Short): Boolean {\n return value.toByteExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`doubleRangeContains`)\npublic operator fun ClosedRange<Double>.contains(value: Short): Boolean {\n return contains(value.toDouble())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n *^@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`floatRangeContains`)\npublic operator fun ClosedRange<Float>.contains(value: Short): Boolean {\n return contains(value.toFloat())\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n *^@public infix fun Int.downTo(to: Byte): IntProgression {\n return IntProgression.fromClosedRange(this, to.toInt(), -1)\n}\n\n/**\n * Returns a progression

from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Long.downTo(to: Byte): LongProgression {\n return LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Byte.downTo(to: Byte): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Short.downTo(to: Byte): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Char.downTo(to: Char): CharProgression {\n return CharProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Int.downTo(to: Int): IntProgression {\n return IntProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Long.downTo(to: Int): LongProgression {\n return LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Byte.downTo(to: Int): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to, -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Short.downTo(to: Int): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to, -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Int.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Long.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this, to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Byte.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Short.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Int.downTo(to: Short): IntProgression {\n return IntProgression.fromClosedRange(this, to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression

```

is empty.\n */\npublic infix fun Long.downTo(to: Short): LongProgression {\n    return
LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/**\n * Returns a progression from this value
down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n
* If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun
Byte.downTo(to: Short): IntProgression {\n    return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -
1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The
[to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned
progression is empty.\n */\npublic infix fun Short.downTo(to: Short): IntProgression {\n    return
IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/**\n * Returns a progression that goes over the
same range in the opposite direction with the same step.\n */\npublic fun IntProgression.reversed(): IntProgression
{\n    return IntProgression.fromClosedRange(last, first, -step)\n}\n\n/**\n * Returns a progression that goes over the
same range in the opposite direction with the same step.\n */\npublic fun LongProgression.reversed():
LongProgression {\n    return LongProgression.fromClosedRange(last, first, -step)\n}\n\n/**\n * Returns a
progression that goes over the same range in the opposite direction with the same step.\n */\npublic fun
CharProgression.reversed(): CharProgression {\n    return CharProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n */\npublic infix fun
IntProgression.step(step: Int): IntProgression {\n    checkStepIsPositive(step > 0, step)\n    return
IntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a progression that
goes over
the same range with the given step.\n */\npublic infix fun LongProgression.step(step: Long): LongProgression {\n
checkStepIsPositive(step > 0, step)\n    return LongProgression.fromClosedRange(first, last, if (this.step > 0) step
else -step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n */\npublic infix
fun CharProgression.step(step: Int): CharProgression {\n    checkStepIsPositive(step > 0, step)\n    return
CharProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\ninternal fun
Int.toByteExactOrNull(): Byte? {\n    return if (this in Byte.MIN_VALUE.toInt()..Byte.MAX_VALUE.toInt())
this.toByte() else null\n}\n\ninternal fun Long.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toLong()..Byte.MAX_VALUE.toLong()) this.toByte() else null\n}\n\ninternal fun
Short.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toShort()..Byte.MAX_VALUE.toShort()) this.toByte() else null\n}\n\ninternal
fun Double.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toDouble()..Byte.MAX_VALUE.toDouble()) this.toInt().toByte() else null\n}\n\ninternal fun
Float.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toFloat()..Byte.MAX_VALUE.toFloat()) this.toInt().toByte() else null\n}\n\ninternal fun
Long.toIntExactOrNull(): Int? {\n    return if (this in Int.MIN_VALUE.toLong()..Int.MAX_VALUE.toLong())
this.toInt() else null\n}\n\ninternal fun Double.toIntExactOrNull(): Int? {\n    return if (this in
Int.MIN_VALUE.toDouble()..Int.MAX_VALUE.toDouble()) this.toInt() else null\n}\n\ninternal fun
Float.toIntExactOrNull(): Int? {\n    return if (this in Int.MIN_VALUE.toFloat()..Int.MAX_VALUE.toFloat())
this.toInt() else null\n}\n\ninternal fun Double.toLongExactOrNull(): Long? {\n    return if (this in
Long.MIN_VALUE.toDouble()..Long.MAX_VALUE.toDouble()) this.toLong() else null\n}\n\ninternal fun
Float.toLongExactOrNull(): Long? {\n    return if (this
in Long.MIN_VALUE.toFloat()..Long.MAX_VALUE.toFloat()) this.toLong() else null\n}\n\ninternal fun
Int.toShortExactOrNull(): Short? {\n    return if (this in Short.MIN_VALUE.toInt()..Short.MAX_VALUE.toInt())
this.toShort() else null\n}\n\ninternal fun Long.toShortExactOrNull(): Short? {\n    return if (this in
Short.MIN_VALUE.toLong()..Short.MAX_VALUE.toLong()) this.toShort() else null\n}\n\ninternal fun
Double.toShortExactOrNull(): Short? {\n    return if (this in
Short.MIN_VALUE.toDouble()..Short.MAX_VALUE.toDouble()) this.toInt().toShort() else null\n}\n\ninternal fun
Float.toShortExactOrNull(): Short? {\n    return if (this in
Short.MIN_VALUE.toFloat()..Short.MAX_VALUE.toFloat()) this.toInt().toShort() else null\n}\n\n/**\n * Returns

```


a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Int.until(to: Byte): IntRange {
    return this .. (to.toInt() - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Long.until(to: Byte): LongRange {
    return this .. (to.toLong() - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Byte.until(to: Byte): IntRange {
    return this.toInt() .. (to.toInt() - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Short.until(to: Byte): IntRange {
    return this.toInt() .. (to.toInt() - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Char.until(to: Char): CharRange {
    if (to <= '\u0000') return CharRange.EMPTY
    return this .. (to - 1).toChar()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Int.until(to: Int): IntRange {
    if (to <= Int.MIN_VALUE) return IntRange.EMPTY
    return this .. (to - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Long.until(to: Int): LongRange {
    return this .. (to.toLong() - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Byte.until(to: Int): IntRange {
    if (to <= Int.MIN_VALUE) return IntRange.EMPTY
    return this.toInt() .. (to - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Short.until(to: Int): IntRange {
    if (to <= Int.MIN_VALUE) return IntRange.EMPTY
    return this.toInt() .. (to - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Int.until(to: Long): LongRange {
    if (to <= Long.MIN_VALUE) return LongRange.EMPTY
    return this.toLong() .. (to - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Long.until(to: Long): LongRange {
    if (to <= Long.MIN_VALUE) return LongRange.EMPTY
    return this .. (to - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Byte.until(to: Long): LongRange {
    if (to <= Long.MIN_VALUE) return LongRange.EMPTY
    return this.toLong() .. (to - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Short.until(to: Long): LongRange {
    if (to <= Long.MIN_VALUE) return LongRange.EMPTY
    return this.toLong() .. (to - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Int.until(to: Short): IntRange {
    return this .. (to.toInt() - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Long.until(to: Short): LongRange {
    return this .. (to.toLong() - 1).toLong()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

  public infix fun Byte.until(to: Short): IntRange {
    return this.toInt() .. (to.toInt() - 1).toInt()
  }
  
```

Returns a range from this value up to but excluding the specified [to] value.
 If the [to] value is less than or equal to this value, then the returned range is empty.

```

`this` value, then the returned range is empty.\n */\npublic infix fun Short.until(to: Short): IntRange {\n    return
this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n/**\n * Ensures that this value is not less than the specified
[minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue] or the
[minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeastComparable\n
*/\npublic fun <T : Comparable<T>> T.coerceAtLeast(minimumValue: T): T {\n    return if (this < minimumValue)
minimumValue else this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n
* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n
* @sample samples.comparisons.ComparableOps.coerceAtLeast\n */\npublic fun
Byte.coerceAtLeast(minimumValue: Byte): Byte {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less
than the specified [minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue]
or the [minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeast\n
*/\npublic fun Short.coerceAtLeast(minimumValue: Short): Short {\n    return if (this < minimumValue)
minimumValue else this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n
* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n
* @sample samples.comparisons.ComparableOps.coerceAtLeast\n */\npublic fun Int.coerceAtLeast(minimumValue:
Int): Int {\n    return if (this < minimumValue) minimumValue else this\n}\n\n/**\n * Ensures that this value is not
less than the specified [minimumValue].\n * \n * @return this value if it's greater than or equal to the
[minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeast\n */\npublic
fun Long.coerceAtLeast(minimumValue: Long): Long {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeast\n */\npublic fun Float.coerceAtLeast(minimumValue: Float):
Float {\n    return if (this < minimumValue) minimumValue else this\n}\n\n/**\n * Ensures that this value is not less
than the specified [minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue]
or the [minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeast\n
*/\npublic fun Double.coerceAtLeast(minimumValue: Double): Double {\n    return if (this < minimumValue)
minimumValue else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n *
\n * @return
this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostComparable\n */\npublic fun <T : Comparable<T>>
T.coerceAtMost(maximumValue: T): T {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n
* Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this value if it's less
than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Byte.coerceAtMost(maximumValue: Byte):
Byte {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Short.coerceAtMost(maximumValue:
Short): Short {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value
is not greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Int.coerceAtMost(maximumValue: Int): Int
{\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not greater
than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the [maximumValue] or
the [maximumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtMost\n
*/\npublic fun Long.coerceAtMost(maximumValue: Long): Long {\n    return if (this > maximumValue)

```

```

maximumValue else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n *
\n * @return this value if it's less than or equal to the [maximumValue]
or the [maximumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtMost\n
*/\npublic fun Float.coerceAtMost(maximumValue: Float): Float {\n    return if (this > maximumValue)
maximumValue else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n *
\n * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n *
\n * @sample samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun
Double.coerceAtMost(maximumValue: Double): Double {\n    return if (this > maximumValue) maximumValue
else this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n
\n * @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceInComparable\n */\npublic fun <T : Comparable<T>>
T.coerceIn(minimumValue: T?, maximumValue: T?): T {\n    if (minimumValue !== null && maximumValue !==
null) {\n        if (minimumValue > maximumValue) throw IllegalArgumentException("\n        if (this <
minimumValue) return minimumValue\n        if (this > maximumValue) return maximumValue\n    }\n    else {\n
if (minimumValue !== null && this < minimumValue) return minimumValue\n        if (maximumValue !== null
&& this > maximumValue) return maximumValue\n    }\n    return this\n}\n\n/**\n * Ensures that this value lies in
the specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or
[minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceIn\n */\npublic fun
Byte.coerceIn(minimumValue: Byte, maximumValue: Byte):
Byte {\n    if (minimumValue > maximumValue) throw IllegalArgumentException("\n    if (this < minimumValue)
return minimumValue\n    if (this > maximumValue) return maximumValue\n    return this\n}\n\n/**\n * Ensures
that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in
the range, or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater
than [maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceIn\n */\npublic fun
Short.coerceIn(minimumValue: Short, maximumValue: Short): Short {\n    if (minimumValue > maximumValue)
throw IllegalArgumentException("\n    if (this < minimumValue) return minimumValue\n    if (this > maximumValue)
return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n * @return this value
if it's in the range, or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value
is greater than [maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceIn\n */\npublic fun
Int.coerceIn(minimumValue: Int, maximumValue: Int): Int {\n    if (minimumValue > maximumValue) throw
IllegalArgumentException("\n    if (this < minimumValue) return minimumValue\n    if (this > maximumValue)
return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n
\n */\npublic fun Long.coerceIn(minimumValue: Long, maximumValue: Long): Long {\n    if (minimumValue >
maximumValue) throw IllegalArgumentException("\n    if (this < minimumValue) return minimumValue\n    if (this >
maximumValue) return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the
specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or
[minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than

```



```

Comparable<UByte> {
    companion object {
        /**
         * A constant holding the minimum value an
         instance of UByte can have.
        */
        public const val MIN_VALUE: UByte = UByte(0)
        /**
         * A constant holding the maximum value an instance of UByte can have.
        */
        public const val MAX_VALUE: UByte = UByte(-1)
        /**
         * The number of bytes used to represent an instance of
         UByte in a binary form.
        */
        public const val SIZE_BYTES: Int = 1
        /**
         * The number of bits used to represent an
         instance of UByte in a binary form.
        */
        public const val SIZE_BITS: Int = 8
    }

    /**
     * Compares this value with the specified value for order.
     * Returns zero if this value is equal to the specified other
     value, a negative number if it's less than other,
     * or a positive number if it's greater than other.
    */
    @kotlin.internal.InlineOnly
    @Suppress("OVERRIDE_BY_INLINE")
    public override inline operator fun
    compareTo(other: UByte): Int = this.toInt().compareTo(other.toInt())
    /**
     * Compares this value with the
     specified value for order.
     * Returns zero if this value is equal to the specified other value, a negative number if
     it's less than other,
     * or a positive number if it's greater than other.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun compareTo(other:
    UShort): Int = this.toInt().compareTo(other.toInt())
    /**
     * Compares this value with the specified value for
     order.
     * Returns zero if this value is equal to the specified other value, a negative number if
     it's less than other,
     * or a positive number if it's greater than other.
    */
    @kotlin.internal.InlineOnly
    public inline operator
    fun compareTo(other: UInt): Int = this.toUInt().compareTo(other)
    /**
     * Compares this value with the
     specified value for order.
     * Returns zero if this value is equal to the specified other value, a negative number if
     it's less than other,
     * or a positive number if it's greater than other.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun compareTo(other: ULong): Int = this.toULong().compareTo(other)
    /**
     * Adds the
     other value to this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other: UByte): UInt =
    this.toUInt().plus(other.toUInt())
    /**
     * Adds the other value to this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other: UShort): UInt =
    this.toUInt().plus(other)
    /**
     * Adds the other value to this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other:
    ULong): ULong = this.toULong().plus(other)
    /**
     * Subtracts the other value from this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun minus(other: UByte): UInt =
    this.toUInt().minus(other.toUInt())
    /**
     * Subtracts the other value from this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun minus(other: UShort): UInt =
    this.toUInt().minus(other.toUInt())
    /**
     * Subtracts the other value from this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator
    fun minus(other: UInt): UInt = this.toUInt().minus(other)
    /**
     * Subtracts the other value from this value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun minus(other: ULong): ULong =
    this.toULong().minus(other)
    /**
     * Multiplies this value by the other value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())
    /**
     * Multiplies this
     value by the other value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun times(other: UShort): UInt
    = this.toUInt().times(other.toUInt())
    /**
     * Multiplies this value by the other value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)
    /**
     * Multiplies this value by the other value.
    */
    @kotlin.internal.InlineOnly
    public inline operator fun
    times(other: ULong): ULong = this.toULong().times(other)
    /**
     * Divides this value by the other value,
     truncating the result to an integer that is closer to zero.
    */
    @kotlin.internal.InlineOnly
    public inline operator
    fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())
    /**
     * Divides this value by the other value,
     truncating the result to an integer that is closer to zero.
    */
    @kotlin.internal.InlineOnly
    public inline operator
    fun div(other: UShort): UInt = this.toUInt().div(other.toUInt())
    /**
     * Divides this value by the other value,
     truncating the result to an integer that is closer to zero.
    */
    @kotlin.internal.InlineOnly
    public inline operator
    fun div(other: UInt): UInt = this.toUInt().div(other)
    /**
     * Divides this value by the other value, truncating the

```

```

result to an integer that is closer to zero. */
@kotlin.internal.InlineOnly
public inline operator fun div(other:
ULong): ULong = this.toULong().div(other)
/**
 * Calculates the remainder of truncating division of this
value by the other value.
 */
 * The result is always less than the divisor.
@kotlin.internal.InlineOnly
public inline operator fun
rem(other: UByte): UInt = this.toUInt().rem(other.toUInt())
/**
 * Calculates the remainder of truncating
division of this value by the other value.
 */
 * The result is always less than the divisor.
@kotlin.internal.InlineOnly
public inline operator fun rem(other: UShort): UInt =
this.toUInt().rem(other.toUInt())
/**
 * Calculates the remainder of truncating division of this value by the
other value.
 */
 * The result is always less than the divisor.
@kotlin.internal.InlineOnly
public
inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)
/**
 * Calculates the remainder of
truncating division of this value by the other value.
 */
 * The result is always less than the divisor.
@kotlin.internal.InlineOnly
public inline operator fun rem(
other:
ULong): ULong = this.toULong().rem(other)
/**
 * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
 */
 * For unsigned types, the results of flooring division
and truncating division are the same.
@kotlin.internal.InlineOnly
public inline fun floorDiv(other:
UByte): UInt = this.toUInt().floorDiv(other.toUInt())
/**
 * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.
 */
 * For unsigned types, the results of flooring
division and truncating division are the same.
@kotlin.internal.InlineOnly
public inline fun
floorDiv(other: UShort): UInt = this.toUInt().floorDiv(other.toUInt())
/**
 * Divides this value by the other
value, flooring the result to an integer that is closer to negative infinity.
 */
 * For unsigned types, the results
of flooring division and truncating
division are the same.
@kotlin.internal.InlineOnly
public inline fun floorDiv(other: UInt): UInt =
this.toUInt().floorDiv(other)
/**
 * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.
 */
 * For unsigned types, the results of flooring division and truncating division
are the same.
@kotlin.internal.InlineOnly
public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)
/**
 * Calculates the remainder of flooring division of this value by the
other value.
 */
 * The result is always less than the divisor.
 */
 * For unsigned types, the remainders
of flooring division and truncating division are the same.
@kotlin.internal.InlineOnly
public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()
/**
 * Calculates the remainder
of flooring division of this value by
the other value.
 */
 * The result is always less than the divisor.
 */
 * For unsigned types, the
remainders of flooring division and truncating division are the same.
@kotlin.internal.InlineOnly
public inline fun mod(other: UShort): UShort = this.toUInt().mod(other.toUInt()).toUShort()
/**
 *
Calculates the remainder of flooring division of this value by the other value.
 */
 * The result is always less
than the divisor.
 */
 * For unsigned types, the remainders of flooring division and truncating division are the
same.
@kotlin.internal.InlineOnly
public inline fun mod(other: UInt): UInt =
this.toUInt().mod(other)
/**
 * Calculates the remainder of flooring division of this value by the other
value.
 */
 * The result is always less than the divisor.
 */
 * For unsigned types, the remainders of
flooring division and truncating division are the same.
@kotlin.internal.InlineOnly
public inline fun mod(other: ULong): ULong = this.toULong().mod(other)
/**
 * Returns this value
incremented by one.
 */
 * @sample samples.misc.Builtins.inc
@kotlin.internal.InlineOnly
public inline operator fun inc(): UByte = UByte(data.inc())
/**
 * Returns this value decremented by one.
 */
 * @sample samples.misc.Builtins.dec
@kotlin.internal.InlineOnly
public inline operator fun
dec(): UByte = UByte(data.dec())
/**
 * Creates a range from this value to the specified [other] value.
 */
@kotlin.internal.InlineOnly
public inline operator fun rangeTo(other: UByte): UIntRange =
UIntRange(this.toUInt(), other.toUInt())
/**
 * Performs a bitwise AND operation between the two values.
 */
@kotlin.internal.InlineOnly
public inline infix fun and(other: UByte): UByte = UByte(this.data and other.data)
/**
 * Performs a bitwise OR operation between the two values.
 */

```

```

*^n @kotlin.internal.InlineOnly^n public inline infix fun or(other: UByte): UByte = UByte(this.data or
other.data)^n /** Performs a bitwise XOR operation between the two values. */^n @kotlin.internal.InlineOnly^n
public inline infix fun xor(other: UByte): UByte = UByte(this.data xor other.data)^n /** Inverts the bits in this
value. */^n @kotlin.internal.InlineOnly^n public inline fun inv(): UByte = UByte(data.inv())^n /**^n *
Converts this [UByte] value to [Byte].^n *^n * If this value is less than or equals to [Byte.MAX_VALUE], the
resulting `Byte` value represents^n * the same numerical value as this `UByte`. Otherwise the result is negative.^n
*^n * The resulting `Byte` value has the same binary representation as this `UByte` value.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toByte(): Byte = data^n /**^n * Converts this [UByte] value to
[Short].^n *^n * The resulting `Short` value represents
the same numerical value as this `UByte`.^n *^n * The least significant 8 bits of the resulting `Short` value are
the same as the bits of this `UByte` value,^n * whereas the most significant 8 bits are filled with zeros.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toShort(): Short = data.toShort() and 0xFF^n /**^n * Converts
this [UByte] value to [Int].^n *^n * The resulting `Int` value represents the same numerical value as this
`UByte`.^n *^n * The least significant 8 bits of the resulting `Int` value are the same as the bits of this `UByte`
value,^n * whereas the most significant 24 bits are filled with zeros.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toInt(): Int = data.toInt() and 0xFF^n /**^n * Converts this [UByte] value to [Long].^n *^n
* The resulting `Long` value represents the same numerical value as this `UByte`.^n *^n * The least significant
8 bits of the resulting
`Long` value are the same as the bits of this `UByte` value,^n * whereas the most significant 56 bits are filled
with zeros.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toLong(): Long = data.toLong() and
0xFF^n /** Returns this value. */^n @kotlin.internal.InlineOnly^n public inline fun toUByte(): UByte = this^n
/**^n * Converts this [UByte] value to [UShort].^n *^n * The resulting `UShort` value represents the same
numerical value as this `UByte`.^n *^n * The least significant 8 bits of the resulting `UShort` value are the same
as the bits of this `UByte` value,^n * whereas the most significant 8 bits are filled with zeros.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toUShort(): UShort = UShort(data.toShort() and 0xFF)^n /**^n
* Converts this [UByte] value to [UInt].^n *^n * The resulting `UInt` value represents the same numerical value
as this `UByte`.^n *^n * The least significant
8 bits of the resulting `UInt` value are the same as the bits of this `UByte` value,^n * whereas the most significant
24 bits are filled with zeros.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toUInt(): UInt =
UInt(data.toInt() and 0xFF)^n /**^n * Converts this [UByte] value to [ULong].^n *^n * The resulting
`ULong` value represents the same numerical value as this `UByte`.^n *^n * The least significant 8 bits of the
resulting `ULong` value are the same as the bits of this `UByte` value,^n * whereas the most significant 56 bits are
filled with zeros.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toULong(): ULong =
ULong(data.toLong() and 0xFF)^n /**^n * Converts this [UByte] value to [Float].^n *^n * The resulting
`Float` value represents the same numerical value as this `UByte`.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toFloat(): Float = this.toInt().toFloat()^n /**^n
* Converts this [UByte] value to [Double].^n *^n * The resulting `Double` value represents the same
numerical value as this `UByte`.^n *^n
@kotlin.internal.InlineOnly^n public inline fun toDouble(): Double =
this.toInt().toDouble()^n^n public override fun toString(): String = toInt().toString()^n}^n/**^n * Converts this
[Byte] value to [UByte].^n *^n * If this value is positive, the resulting `UByte` value represents the same numerical
value as this `Byte`.^n *^n * The resulting `UByte` value has the same binary representation as this `Byte` value.^n
*^n
@SinceKotlin("1.5")^n@WasExperimental(ExperimentalUnsignedTypes::class)^n@kotlin.internal.InlineOnly^n
public inline fun Byte.toUByte(): UByte = UByte(this)^n/**^n * Converts this [Short] value to [UByte].^n *^n * If
this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents^n *
the same numerical value as this `Short`.^n *^n * The resulting `UByte` value
is represented by the least significant 8 bits of this `Short` value.^n
*^n
@SinceKotlin("1.5")^n@WasExperimental(ExperimentalUnsignedTypes::class)^n@kotlin.internal.InlineOnly^n
public inline fun Short.toUByte(): UByte = UByte(this.toByte())^n/**^n * Converts this [Int] value to [UByte].^n

```

```

*\n * If this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value
represents\n * the same numerical value as this `Int`.\n *\n * The resulting `UByte` value is represented by the least
significant 8 bits of this `Int` value.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Int.toUByte(): UByte = UByte(this.toByte())\n **\n * Converts this [Long] value to [UByte].\n
*\n * If this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value
represents\n * the same numerical value as this `Long`.\n *\n * The resulting `UByte` value is represented by the
least significant 8 bits of this `Long` value.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Long.toUByte(): UByte = UByte(this.toByte())\n ,"/*\n * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n *\n\n// Auto-generated file. DO NOT EDIT!\n\npackage
kotlin\n\nimport kotlin.experimental.*\nimport
kotlin.jvm.*\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @JvmInline\npu
blic value class UInt @PublishedApi internal constructor(@PublishedApi internal val data: Int) :
Comparable<UInt> {\n\n    companion object {\n\n        /**\n         * A constant holding the minimum value an
instance of UInt can have.\n         *\n         public const val MIN_VALUE: UInt = UInt(0)\n\n         /**\n         * A
constant holding the maximum value
an instance of UInt can have.\n         *\n         public const val MAX_VALUE: UInt = UInt(-1)\n\n         /**\n         *
The number of bytes used to represent an instance of UInt in a binary form.\n         *\n         public const val
SIZE_BYTES: Int = 4\n\n         /**\n         * The number of bits used to represent an instance of UInt in a binary
form.\n         *\n         public const val SIZE_BITS: Int = 32\n    }\n\n    /**\n     * Compares this value with the
specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n     * or a positive number if it's greater than other.\n     *\n     @kotlin.internal.InlineOnly\n
public inline operator fun compareTo(other: UByte): Int = this.compareTo(other.toUInt())\n\n     /**\n     * Compares
this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a
negative number if it's less than
other,\n     * or a positive number if it's greater than other.\n     *\n     @kotlin.internal.InlineOnly\n
public inline
operator fun compareTo(other: UShort): Int = this.compareTo(other.toUInt())\n\n     /**\n     * Compares this value
with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative
number if it's less than other,\n     * or a positive number if it's greater than other.\n     *\n\n     @kotlin.internal.InlineOnly\n
@Suppress("OVERRIDE_BY_INLINE")\n
public override inline operator fun
compareTo(other: UInt): Int = uintCompare(this.data, other.data)\n\n     /**\n     * Compares this value with the
specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n     * or a positive number if it's greater than other.\n     *\n     @kotlin.internal.InlineOnly\n
public inline operator fun
compareTo(other: ULong): Int = this.toULong().compareTo(other)\n\n         /**\n         Adds the other value to this value. *\n         @kotlin.internal.InlineOnly\n
public inline operator fun plus(other:
UByte): UInt = this.plus(other.toUInt())\n         /**\n         Adds the other value to this value. *\n\n     @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UShort): UInt = this.plus(other.toUInt())\n\n     /**\n     Adds the other value to this value. *\n     @kotlin.internal.InlineOnly\n
public inline operator fun plus(other:
UInt): UInt = UInt(this.data.plus(other.data))\n         /**\n         Adds the other value to this value. *\n\n     @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)\n\n         /**\n         Subtracts the other value from this value. *\n         @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UByte): UInt = this.minus(other.toUInt())\n         /**\n         Subtracts the other value
from this value. *\n         @kotlin.internal.InlineOnly\n
public inline operator fun minus(other:
UShort): UInt = this.minus(other.toUInt())\n         /**\n         Subtracts the other value from this value. *\n\n     @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UInt): UInt =
UInt(this.data.minus(other.data))\n         /**\n         Subtracts the other value from this value. *\n

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@kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong =
this.toULong().minus(other)\n\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UByte): UInt = this.times(other.toUInt())\n /** Multiplies this value by the
other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): UInt =
this.times(other.toUInt())\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UInt): UInt = UInt(this.data.times(other.data))\n /** Multiplies this value
by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: ULong): ULong = this.toULong().times(other)\n\n /** Divides this value
by the other value, truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n
public inline operator fun div(other: UByte): UInt = this.div(other.toUInt())\n /** Divides this value by the other
value, truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline
operator fun div(other: UShort): UInt = this.div(other.toUInt())\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UInt): UInt = uintDivide(this, other)\n /** Divides this value by the other value, truncating the result
to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other:
ULong): ULong =
this.toULong().div(other)\n\n /**\n * Calculates the remainder of truncating division of this value by the other
value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UByte): UInt = this.rem(other.toUInt())\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result is always less than the divisor.\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UShort): UInt = this.rem(other.toUInt())\n
/**\n * Calculates the remainder of truncating division of this value by the other value.\n * \n * The result is
always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: UInt):
UInt = uintRemainder(this, other)\n /**\n * Calculates the remainder of truncating division of this value by the
other value.\n * \n
* The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun
rem(other: ULong): ULong = this.toULong().rem(other)\n\n /**\n * Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of
flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun
floorDiv(other: UByte): UInt = this.floorDiv(other.toUInt())\n /**\n * Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of
flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun
floorDiv(other: UShort): UInt = this.floorDiv(other.toUInt())\n /**\n * Divides this value by the other value,
flooring the result to an integer that is closer
to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division are the
same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): UInt = div(other)\n /**\n
* Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n * \n
* For unsigned types, the results of flooring division and truncating division are the same.\n */\n
@kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)\n\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline
fun mod(other: UByte): UByte = this.mod(other.toUInt()).toUByte()\n
/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating
division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.mod(other.toUInt()).toUShort()\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders

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of flooring division and truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun mod(other: UInt): UInt = rem(other)\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division

and truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n /**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n *^n @kotlin.internal.InlineOnly\n public inline operator fun inc(): UInt = UInt(data.inc())\n\n /**\n * Returns this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n *^n @kotlin.internal.InlineOnly\n public inline operator fun dec(): UInt = UInt(data.dec())\n\n /** Creates a range from this value to the specified [other] value. ^n

@kotlin.internal.InlineOnly\n public inline operator fun rangeTo(other: UInt): UIntRange = UIntRange(this, other)\n\n /**\n * Shifts this value left by the [bitCount] number of bits.\n * \n * Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n * The shift distance actually

used is therefore always in the range `0..31`.\n *^n @kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): UInt = UInt(data shl bitCount)\n\n /**\n * Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with zeros.\n * \n * Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n * The shift distance actually used is therefore always in the range `0..31`.\n *^n

@kotlin.internal.InlineOnly\n public inline infix fun shr(bitCount: Int): UInt = UInt(data ushr bitCount)\n\n /** Performs a bitwise AND operation between the two values. ^n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UInt): UInt = UInt(this.data and other.data)\n\n /** Performs a bitwise OR operation between the two values. ^n @kotlin.internal.InlineOnly\n public inline infix fun or(other: UInt): UInt = UInt(this.data or other.data)\n\n /** Performs a bitwise

XOR operation between the two values. ^n @kotlin.internal.InlineOnly\n public inline infix fun xor(other: UInt): UInt = UInt(this.data xor other.data)\n\n /** Inverts the bits in this value. ^n @kotlin.internal.InlineOnly\n public inline fun inv(): UInt = UInt(data.inv())\n\n /**\n * Converts this [UInt] value to [Byte].\n * \n * If this value is less than or equals to [Byte.MAX_VALUE], the resulting `Byte` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `Byte` value is represented by the least significant 8 bits of this `UInt` value.\n * Note that the resulting `Byte` value may be negative.\n *^n

@kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data.toByte()\n\n /**\n * Converts this [UInt] value to [Short].\n * \n * If this value is less than or equals to [Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as this `UInt`.\n

* \n * The resulting `Short` value is represented by the least significant 16 bits of this `UInt` value.\n * Note that the resulting `Short` value may be negative.\n *^n @kotlin.internal.InlineOnly\n public inline fun

toShort(): Short = data.toShort()\n\n /**\n * Converts this [UInt] value to [Int].\n * \n * If this value is less than or equals to [Int.MAX_VALUE], the resulting `Int` value represents\n * the same numerical value as this `UInt`. Otherwise the result is negative.\n * \n * The resulting `Int` value has the same binary representation as this `UInt` value.\n *^n @kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data\n\n /**\n * Converts this [UInt] value to [Long].\n * \n * The resulting `Long` value represents the same numerical value as this `UInt`.\n * \n * The least significant 32 bits of the resulting `Long` value are the same as the bits of this `UInt` value,\n * whereas the most

significant 32 bits are filled with zeros.\n *^n @kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFFFF_FFFF\n\n /**\n * Converts this [UInt] value to [UByte].\n * \n * If this value is less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UByte` value is represented by the least significant 8 bits of this `UInt` value.\n *^n @kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = data.toUByte()\n\n /**\n * Converts this [UInt] value to [UShort].\n * \n * If this value is less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UShort` value is represented by the least significant 16 bits of this `UInt` value.\n *^n

^n @kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFFFF_FFFF\n\n /**\n * Converts this [UInt] value to [UByte].\n * \n * If this value is less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UByte` value is represented by the least significant 8 bits of this `UInt` value.\n *^n @kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = data.toUByte()\n\n /**\n * Converts this [UInt] value to [UShort].\n * \n * If this value is less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UShort` value is represented by the least significant 16 bits of this `UInt` value.\n *^n

^n @kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFFFF_FFFF\n\n /**\n * Converts this [UInt] value to [UByte].\n * \n * If this value is less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UByte` value is represented by the least significant 8 bits of this `UInt` value.\n *^n @kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = data.toUByte()\n\n /**\n * Converts this [UInt] value to [UShort].\n * \n * If this value is less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UShort` value is represented by the least significant 16 bits of this `UInt` value.\n *^n


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instance of UShort can have.\n    *\n    public const val MIN_VALUE: UShort = UShort(0)\n    /**\n    * A constant holding the maximum value an instance of UShort can have.\n    *\n    public const val\n    MAX_VALUE: UShort = UShort(-1)\n\n    /**\n    * The number of bytes used to represent an instance of UShort in a binary form.\n    *\n    public const val SIZE_BYTES: Int = 2\n    /**\n    * The number of bits used to represent an instance of\n    UShort in a binary form.\n    *\n    public const val SIZE_BITS: Int = 16\n    }\n    /**\n    * Compares this\n    value with the specified value for order.\n    * Returns zero if this value is equal to the specified other value, a\n    negative number if it's less than other,\n    * or a positive number if it's greater than other.\n    *\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UByte): Int =\n    this.toInt().compareTo(other.toInt())\n    /**\n    * Compares this value with the specified value for order.\n    * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n    * or a\n    positive number if it's greater than other.\n    *\n    @kotlin.internal.InlineOnly\n    @Suppress(\"OVERRIDE_BY_INLINE\")\n    public override inline operator fun compareTo(other: UShort): Int\n    = this.toInt().compareTo(other.toInt())\n    /**\n    * Compares this value with the specified value for order.\n    * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n    * or a\n    positive number if it's greater than other.\n    *\n    @kotlin.internal.InlineOnly\n    public inline operator fun\n    compareTo(other: UInt): Int = this.toUInt().compareTo(other)\n    /**\n    * Compares this value with the\n    specified value for order.\n    * Returns zero if this value is equal to the specified other value, a negative number if\n    it's less than other,\n    * or a positive number if it's greater than other.\n    *\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: ULong): Int = this.toULong().compareTo(other)\n    /** Adds the\n    other value to this value. *\n    @kotlin.internal.InlineOnly\n\n    public inline operator fun plus(other: UByte): UInt = this.toUInt().plus(other.toUInt())\n    /** Adds the other\n    value to this value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UShort): UInt =\n    this.toUInt().plus(other.toUInt())\n    /** Adds the other value to this value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)\n    /** Adds the other value to this\n    value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: ULong): ULong =\n    this.toULong().plus(other)\n    /** Subtracts the other value from this value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())\n    /** Subtracts the\n    other value from this value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UShort):\n    UInt = this.toUInt().minus(other.toUInt())\n\n    /** Subtracts the other value from this value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun\n    minus(other: UInt): UInt = this.toUInt().minus(other)\n    /** Subtracts the other value from this value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: ULong): ULong =\n    this.toULong().minus(other)\n    /** Multiplies this value by the other value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())\n    /** Multiplies this\n    value by the other value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UShort): UInt\n    = this.toUInt().times(other.toUInt())\n    /** Multiplies this value by the other value. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)\n    /** Multiplies this value by the other value. *\n    @kotlin.internal.InlineOnly\n    public inline operator\n    fun times(other: ULong): ULong = this.toULong().times(other)\n    /** Divides this value by the other value,\n    truncating the result to an integer that is closer to zero. *\n    @kotlin.internal.InlineOnly\n    public inline operator\n    fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())\n    /** Divides this value by the other value,\n    truncating the result to an integer that is closer to zero. *\n    @kotlin.internal.InlineOnly\n    public inline operator\n    fun div(other: UShort): UInt = this.toUInt().div(other.toUInt())\n    /** Divides this value by the other value,\n    truncating the result to an integer that is closer to zero. *\n    @kotlin.internal.InlineOnly\n    public inline operator\n    fun div(other: UInt): UInt = this.toUInt().div(other)\n    /** Divides this value by the other value, truncating the\n    result to an integer that is closer to zero. *\n    @kotlin.internal.InlineOnly\n    public inline operator fun div(other:\n    ULong): ULong = this.toULong().div(other)\n
```

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/**\n * Calculates the remainder of truncating division of this value by the other value.\n * \n * The result
is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
UByte): UInt = this.toUInt().rem(other.toUInt())\n /**\n * Calculates the remainder of truncating division of
this value by the other value.\n * \n * The result is always less than the divisor.\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UShort): UInt =
this.toUInt().rem(other.toUInt())\n /**\n * Calculates the remainder of truncating division of this value by the
other value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result
is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
ULong): ULong = this.toULong().rem(other)\n\n /**\n * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division
and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UByte): UInt = this.toUInt().floorDiv(other.toUInt())\n /**\n * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring
division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun
floorDiv(other: UShort): UInt = this.toUInt().floorDiv(other.toUInt())\n /**\n * Divides this value by the other
value, flooring the result to an integer that is
closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): UInt =
this.toUInt().floorDiv(other)\n /**\n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)\n\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()\n\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating
division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.toUInt().mod(other.toUInt()).toUShort()\n\n /**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n
public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n\n /**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n
*\n *
For unsigned types, the remainders of flooring division and truncating division are the same.\n */\n
@kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n\n
/**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun inc(): UShort = UShort(data.inc())\n\n /**\n *
Returns this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun dec(): UShort = UShort(data.dec())\n\n /** Creates a
range from this value to the specified [other] value. */\n @kotlin.internal.InlineOnly\n public inline operator fun
rangeTo(other: UShort): UIntRange = UIntRange(this.toUInt(), other.toUInt())\n\n /** Performs a bitwise AND
operation between the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun
and(other: UShort): UShort = UShort(this.data and other.data)\n\n /** Performs a bitwise OR operation between the
two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun or(other: UShort): UShort =
UShort(this.data or other.data)\n\n /** Performs a bitwise XOR operation between the two values. */\n

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@kotlin.internal.InlineOnly\n public inline infix fun xor(other: UShort): UShort = UShort(this.data xor
other.data)\n /** Inverts the bits in this value. */\n @kotlin.internal.InlineOnly\n public inline fun inv():
UShort = UShort(data.inv())\n\n /**\n * Converts this [UShort] value to [Byte].\n * \n * If this value is less
than or equals to [Byte.MAX_VALUE], the resulting `Byte` value represents\n * the same numerical value as this
`UShort`.\n * \n * The resulting `Byte` value is represented by the least significant 8 bits of this `UShort`
value.\n * Note that the resulting `Byte` value may be negative.\n */\n @kotlin.internal.InlineOnly\n
public inline fun toByte(): Byte = data.toByte()\n /**\n * Converts this [UShort] value to [Short].\n * \n *
If this value is less than or equals to [Short.MAX_VALUE], the resulting `Short` value represents\n * the same
numerical value as this `UShort`. Otherwise the result is negative.\n * \n * The resulting `Short` value has the
same binary representation as this `UShort` value.\n */\n @kotlin.internal.InlineOnly\n public inline fun
toShort(): Short = data\n /**\n * Converts this [UShort] value to [Int].\n * \n * The resulting `Int` value
represents the same numerical value as this `UShort`.\n * \n * The least significant 16 bits of the resulting `Int`
value are the same as the bits of this `UShort` value,\n * whereas the most significant 16 bits are filled with
zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data.toInt() and 0xFFFF\n /**\n
* Converts this
[UShort] value to [Long].\n * \n * The resulting `Long` value represents the same numerical value as this
`UShort`.\n * \n * The least significant 16 bits of the resulting `Long` value are the same as the bits of this
`UShort` value,\n * whereas the most significant 48 bits are filled with zeros.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFFFF\n\n /**\n *
Converts this [UShort] value to [UByte].\n * \n * If this value is less than or equals to [UByte.MAX_VALUE],
the resulting `UByte` value represents\n * the same numerical value as this `UShort`.\n * \n * The resulting
`UByte` value is represented by the least significant 8 bits of this `UShort` value.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = data.toUByte()\n /** Returns this value. */\n
@kotlin.internal.InlineOnly\n public inline fun toUShort(): UShort = this\n /**\n * Converts
this [UShort] value to [UInt].\n * \n * The resulting `UInt` value represents the same numerical value as this
`UShort`.\n * \n * The least significant 16 bits of the resulting `UInt` value are the same as the bits of this
`UShort` value,\n * whereas the most significant 16 bits are filled with zeros.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toUInt(): UInt = UInt(data.toInt() and 0xFFFF)\n /**\n *
Converts this [UShort] value to [ULong].\n * \n * The resulting `ULong` value represents the same numerical
value as this `UShort`.\n * \n * The least significant 16 bits of the resulting `ULong` value are the same as the
bits of this `UShort` value,\n * whereas the most significant 48 bits are filled with zeros.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toULong(): ULong = ULong(data.toLong() and 0xFFFF)\n\n /**\n
* Converts this [UShort] value to [Float].\n * \n * The resulting `Float`
value represents the same numerical value as this `UShort`.\n */\n @kotlin.internal.InlineOnly\n public inline
fun toFloat(): Float = this.toInt().toFloat()\n /**\n * Converts this [UShort] value to [Double].\n * \n * The
resulting `Double` value represents the same numerical value as this `UShort`.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toDouble(): Double = this.toInt().toDouble()\n\n public override
fun toString(): String = toInt().toString()\n\n /**\n * Converts this [Byte] value to [UShort].\n * \n * If this
value is positive, the resulting `UShort` value represents the same numerical value as this `Byte`.\n * \n * The
least significant 8 bits of the resulting `UShort` value are the same as the bits of this `Byte` value,\n *
whereas the most significant 8 bits are filled with the sign bit of this value.\n */\n
@SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun
Byte.toUShort(): UShort = UShort(this.toShort())\n /**\n * Converts this [Short] value to [UShort].\n * \n * If
this value is positive, the resulting `UShort` value represents the same numerical value as this `Short`.\n * \n *
The resulting `UShort` value has the same binary representation as this `Short` value.\n */\n
@SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Short.toUShort(): UShort = UShort(this)\n /**\n * Converts this [Int] value to [UShort].\n * \n * If

```

this value is positive and less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents the same numerical value as this `Int`. The resulting `UShort` value is represented by the least significant 16 bits of this `Int` value.

```
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Int.toUShort(): UShort = UShort(this.toShort())\n/**\n * Converts this
```

```
[Long] value to [UShort].\n *\n * If this value is positive and less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents the same numerical value as this `Long`. The resulting `UShort` value is represented by the least significant 16 bits of this `Long` value.
```

```
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Long.toUShort(): UShort = UShort(this.toShort())\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o.
```

```
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage
```

```
kotlin.ranges\n/**\n * A range of values of type `Char`.\n */\npublic class CharRange(start: Char, endInclusive: Char) : CharProgression(start, endInclusive, 1), ClosedRange<Char> {\n    override val start: Char get() = first\n
```

```
    override val endInclusive:
```

```
    Char get() = last\n\n    override fun contains(value: Char): Boolean = first <= value && value <= last\n    /**\n
```

```
 * Checks whether the range is empty.\n    *\n    * The range is empty if its start value is greater than the end
```

```
value.\n    */\n    override fun isEmpty(): Boolean = first > last\n    override fun equals(other: Any?): Boolean =\n
```

```
        other is CharRange && (isEmpty() && other.isEmpty()) ||\n        first == other.first && last == other.last\n\n    override fun hashCode(): Int =\n
```

```
        if (isEmpty()) -1 else (31 * first.code + last.code)\n\n    override fun toString():
```

```
String = "$first..$last"\n\n    companion object {\n        /** An empty range of values of type Char. */\n        public
```

```
val EMPTY: CharRange = CharRange(1.toChar(), 0.toChar())\n    }\n}\n/**\n * A range of values of type `Int`.
```

```
*/\npublic class IntRange(start: Int, endInclusive: Int) : IntProgression(start, endInclusive, 1), ClosedRange<Int> {\n    override val start: Int get() = first\n
```

```
    override val endInclusive:
```

```
    Int get() = last\n\n    override fun contains(value: Int): Boolean = first <= value &&
```

```
value <= last\n    /**\n * Checks whether the range is empty.\n    *\n    * The range is empty if its start value is
```

```
greater than the end value.\n    */\n    override fun isEmpty(): Boolean = first > last\n    override fun equals(other:
```

```
Any?): Boolean =\n        other is IntRange && (isEmpty() && other.isEmpty()) ||\n        first == other.first && last
```

```
== other.last\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * first + last)\n\n    override fun
```

```
toString(): String = "$first..$last"\n\n    companion object {\n        /** An empty range of values of type Int. */\n        public
```

```
val EMPTY: IntRange = IntRange(1, 0)\n    }\n}\n/**\n * A range of values of type `Long`.
```

```
*/\npublic class LongRange(start: Long, endInclusive: Long) : LongProgression(start, endInclusive, 1), ClosedRange<Long>
```

```
{\n    override val start: Long get()
```

```
    = first\n    override val endInclusive: Long get() = last\n\n    override fun contains(value: Long): Boolean = first <=
```

```
value && value <= last\n    /**\n * Checks whether the range is empty.\n    *\n    * The range is empty if its
```

```
start value is greater than the end value.\n    */\n    override fun isEmpty(): Boolean = first > last\n    override fun
```

```
equals(other: Any?): Boolean =\n        other is LongRange && (isEmpty() && other.isEmpty()) ||\n        first ==
```

```
other.first && last == other.last\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (first xor
```

```
(first ushr 32)) + (last xor (last ushr 32))).toInt()\n\n    override fun toString(): String = "$first..$last"\n\n    companion object {\n        /** An empty range of values of type Long. */\n        public
```

```
val EMPTY: LongRange = LongRange(1, 0)\n    }\n}\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
```

```
contributors.\n * Use of this source code is governed by
```

```
the Apache 2.0 license that can be found in the license/LICENSE.txt file.
```

```
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n@file:OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\nimport
```

```
kotlin.random.Random\n\ninternal object EmptyIterator : ListIterator<Nothing> {\n    override fun hasNext():
```

```
Boolean = false\n    override fun hasPrevious(): Boolean = false\n    override fun nextIndex(): Int = 0\n    override
```

```
fun previousIndex(): Int = -1\n    override fun next(): Nothing = throw NoSuchElementException()\n    override fun
```



```

* @sample samples.collections.Collections.Lists.readOnlyListFromInitializer\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> List(size: Int, init: (index: Int) -> T):
List<T> = MutableList(size, init)\n\n/**\n * Creates a new mutable list with the specified [size], where each element
is calculated by calling the specified\n * [init] function.\n * The function [init] is called for each
list element sequentially starting from the first one.\n * It should return the value for a list element given its index.\n
*\n * @sample samples.collections.Collections.Lists.mutableListFromInitializer\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> MutableList(size: Int, init: (index:
Int) -> T): MutableList<T> {\n    val list = ArrayList<T>(size)\n    repeat(size) { index -> list.add(init(index)) }\n
return list\n}\n\n/**\n * Builds a new read-only [List] by populating a [MutableList] using the given
[builderAction]\n * and returning a read-only list with the same elements.\n *\n * The list passed as a receiver to the
[builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified
behavior.\n *\n * The returned list is serializable (JVM).\n *\n * @sample
samples.collections.Builders.Lists.buildListSample\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <E> buildList(@BuilderInference builderAction: MutableList<E>().() -> Unit): List<E> {\n    contract {
callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n    return
buildListInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal
expect inline fun <E> buildListInternal(builderAction: MutableList<E>().() -> Unit): List<E>\n\n/**\n * Builds a
new read-only [List] by populating a [MutableList] using the given [builderAction]\n * and returning a read-only list
with the same elements.\n *\n * The list passed as a receiver to the [builderAction] is valid only inside that
function.\n * Using it outside of the function produces an unspecified behavior.\n *\n * The returned list is
serializable (JVM).\n *\n * [capacity] is used to hint the expected number of elements added in the
[builderAction].\n *\n * @throws IllegalArgumentException if the given [capacity] is negative.\n *\n * @sample
samples.collections.Builders.Lists.buildListSampleWithCapacity\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <E> buildList(capacity: Int, @BuilderInference builderAction: MutableList<E>().() -> Unit): List<E> {\n
contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n    return buildListInternal(capacity,
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline
fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>().() -> Unit): List<E>\n\n/**\n * Returns an
[IntRange] of the valid indices for this collection.\n *\n * @sample
samples.collections.Collections.Collections.indicesOfCollection\n *\npublic val Collection<*>.indices: IntRange\n
get() = 0..size - 1\n\n/**\n * Returns the index of the last item in the list or -1 if the list is empty.\n *\n * @sample
samples.collections.Collections.Lists.lastIndexOfList\n *\npublic val <T> List<T>.lastIndex:
Int\n    get() = this.size - 1\n\n/**\n * Returns `true` if the collection is not empty.\n *\n * @sample
samples.collections.Collections.Collections.collectionIsNotEmpty\n *\n@kotlin.internal.InlineOnly\npublic inline
fun <T> Collection<T>.isNotEmpty(): Boolean = !isEmpty()\n\n/**\n * Returns `true` if this nullable collection is
either null or empty.\n *\n * @sample samples.collections.Collections.Collections.collectionIsNullOrEmpty\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>?.isNullOrEmpty():
Boolean {\n    contract {\n        returns(false) implies (this@isNullOrEmpty != null)\n    }\n    return this == null ||
this.isEmpty()\n}\n\n/**\n * Returns this Collection if it's not `null` and the empty list otherwise.\n *\n * @sample
samples.collections.Collections.Collections.collectionOrEmpty\n *\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Collection<T>?.orEmpty(): Collection<T> = this ?: emptyList()\n\n/**\n * Returns this List if it's
not `null` and the empty list otherwise.\n *\n * @sample samples.collections.Collections.Lists.listOrEmpty\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> List<T>?.orEmpty(): List<T> = this ?: emptyList()\n\n/**\n
 * Returns this collection if it's not empty\n * or the result of calling [defaultValue] function if the collection is
empty.\n *\n * @sample samples.collections.Collections.Collections.collectionIfEmpty\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifEmpty(defaultValue: () ->

```

```

R): R where C : Collection<*>, C : R => Boolean {
    if (isEmpty()) defaultValue() else this.containsAll(elements)
}
// Checks if all elements in the specified collection are contained in this collection.
// Allows to overcome type-safety restriction of `containsAll` that requires to pass a collection of type `Collection<E>`.
// @sample samples.collections.Collections.Collections.collectionContainsAll

* @Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension
takes precedence in some cases
@kotlin.internal.InlineOnly
public inline fun <@kotlin.internal.OnlyInputTypes T> Collection<T>.containsAll(elements: Collection<T>): Boolean = this.containsAll(elements)

Returns a new list with the elements of this list randomly shuffled
using the specified [random] instance as the source of randomness.
@SinceKotlin("1.3")
public fun <T> Iterable<T>.shuffled(random: Random): List<T> = toMutableList().apply { shuffle(random) }

internal fun <T> List<T>.optimizeReadOnlyList() = when (size) {
    0 -> emptyList()
    1 -> listOf(this[0])
    else -> this
}

Searches this list or its range for the provided [element] using the binary search algorithm.
The list is expected to be sorted into ascending order according to the Comparable natural ordering of its elements,
otherwise the result is undefined.
If the list contains multiple elements equal to the specified [element], there is no guarantee which one will be found.
`null` value is considered to be less than any non-null value.
@return the index of the element, if it is contained in the list within the specified range;
otherwise, the inverted insertion point `(-insertion point - 1)`.
The insertion point is defined as the index at which the element should be inserted,
so that the list (or the specified subrange of list) still remains sorted.
// @sample samples.collections.Collections.Lists.binarySearchOnComparable
// @sample samples.collections.Collections.Lists.binarySearchWithBoundaries

public fun <T : Comparable<T>> List<T?>.binarySearch(element: T?, fromIndex: Int = 0, toIndex: Int = size): Int {
    rangeCheck(size, fromIndex, toIndex)
    var low = fromIndex
    var high = toIndex - 1
    while (low <= high) {
        val mid = (low + high).ushr(1) // safe from overflows
        val midVal = get(mid)
        val cmp = compareValues(midVal, element)
        if (cmp < 0)
            low = mid + 1
        else if (cmp > 0)
            high = mid - 1
        else
            return mid // key found
    }
    return -(low + 1) // key not found
}

Searches this list or its range for the provided [element] using the binary search algorithm.
The list is expected to be sorted into ascending order according to the specified [comparator],
otherwise the result is undefined.
If the list contains multiple elements equal to the specified [element], there is no guarantee which one will be found.
`null` value is considered to be less than any non-null value.
@return the index of the element, if it is contained in the list within the specified range;
otherwise, the inverted insertion point `(-insertion point - 1)`.
The insertion point is defined as the index at which the element should be inserted,
so that the list (or the specified subrange of list) still remains sorted according to the specified [comparator].

// @sample samples.collections.Collections.Lists.binarySearchWithComparator

public fun <T> List<T>.binarySearch(element: T, comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Int {
    rangeCheck(size, fromIndex, toIndex)
    var low = fromIndex
    var high = toIndex - 1
    while (low <= high) {
        val mid = (low + high).ushr(1) // safe from overflows
        val midVal = get(mid)
        val cmp = comparator.compare(midVal, element)
        if (cmp < 0)
            low = mid + 1
        else if (cmp > 0)
            high = mid - 1
        else
            return mid // key found
    }
    return -(low + 1) // key not found
}

Searches this list or its range for an element having the key returned by the specified [selector] function
equal to the provided [key] value using the binary search algorithm.
The list is expected to be sorted into ascending order according to the Comparable natural ordering of keys of its elements,
otherwise the result is undefined.
If the list contains multiple elements with the specified [key], there is no guarantee which one will be found.
`null` value is considered to be less than any non-null value.
@return the index of the element with the specified [key], if it is contained in the list within the specified range;
otherwise, the inverted insertion point `(-insertion point - 1)`.
The insertion point is defined as the index at which the element should be inserted,
so that the list (or the specified subrange of list) still remains sorted.
// @sample samples.collections.Collections.Lists.binarySearchByKey

public inline fun <T,

```

```

K : Comparable<K>> List<T>.binarySearchBy(\n key: K?,\n fromIndex: Int = 0,\n toIndex: Int = size,\n
crossinline selector: (T) -> K?):\n Int =\n binarySearch(fromIndex, toIndex) { compareValues(selector(it), key)
}\n\n// do not introduce this overload --- too rare\n/public fun
<T, K> List<T>.binarySearchBy(key: K, comparator: Comparator<K>, fromIndex: Int = 0, toIndex: Int = size(),
selector: (T) -> K): Int =\n\n    binarySearch(fromIndex, toIndex) { comparator.compare(selector(it), key)
}\n\n\n/**\n * Searches this list or its range for an element for which the given [comparison] function returns zero
using the binary search algorithm.\n * The list is expected to be sorted so that the signs of the [comparison]
function's return values ascend on the list elements,\n * i.e. negative values come before zero and zeroes come
before positive values.\n * Otherwise, the result is undefined.\n * If the list contains multiple elements for which
[comparison] returns zero, there is no guarantee which one will be found.\n * @param comparison function that
returns zero when called on the list element being searched.\n * On the elements coming before the target element,
the function must return negative values;\n * on the elements coming after the target
element, the function must return positive values.\n * @return the index of the found element, if it is contained
in the list within the specified range;\n * otherwise, the inverted insertion point `(-insertion point - 1)`.\n * The
insertion point is defined as the index at which the element should be inserted,\n * so that the list (or the specified
subrange of list) still remains sorted.\n * @sample
samples.collections.Collections.Lists.binarySearchWithComparisonFunction\n */\npublic fun <T>
List<T>.binarySearch(fromIndex: Int = 0, toIndex: Int = size, comparison: (T) -> Int): Int {\n    rangeCheck(size,
fromIndex, toIndex)\n    var low = fromIndex\n    var high = toIndex - 1\n    while (low <= high) {\n        val mid
= (low + high).ushr(1) // safe from overflows\n        val midVal = get(mid)\n        val cmp = comparison(midVal)\n        if (cmp < 0)\n            low = mid + 1\n        else if (cmp > 0)\n            high = mid - 1\n        else\n            return
mid //
key found\n    }\n    return -(low + 1) // key not found\n}\n\n\n/**\n * Checks that `from` and `to` are in\n * the range
of [0..size] and throws an appropriate exception, if they aren't.\n */\nprivate fun rangeCheck(size: Int, fromIndex:
Int, toIndex: Int) {\n    when {\n        fromIndex > toIndex -> throw IllegalArgumentException("\nfromIndex
($fromIndex) is greater than toIndex ($toIndex).")\n        fromIndex < 0 -> throw
IndexOutOfBoundsException("\nfromIndex ($fromIndex) is less than zero.")\n        toIndex > size -> throw
IndexOutOfBoundsException("\ntoIndex ($toIndex) is greater than size ($size).")\n    }\n}\n\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal expect fun checkIndexOverflow(index: Int):
Int\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal expect fun checkCountOverflow(count: Int):
Int\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun throwIndexOverflow() {\n    throw
ArithmeticException("\nIndex overflow has happened.")\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal
fun throwCountOverflow() {\n    throw ArithmeticException("\nCount overflow has happened.")\n}\n\n\n/*\n *
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governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n@file:OptIn(kotlin.experiment
al.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\n\nprivate object
EmptyMap : Map<Any?, Nothing>, Serializable {\n    private const val serialVersionUID: Long =
8246714829545688274\n    override fun equals(other: Any?): Boolean = other is Map<*, *> &&
other.isEmpty()\n    override fun hashCode(): Int = 0\n    override fun toString(): String = "{}"\n    override val
size: Int get() = 0\n    override fun isEmpty(): Boolean = true\n    override fun containsKey(key: Any?): Boolean =
false\n    override fun containsValue(value:
Nothing): Boolean = false\n    override fun get(key: Any?): Nothing? = null\n    override val entries:
Set<Map.Entry<Any?, Nothing>> get() = EmptySet\n    override val keys: Set<Any?> get() = EmptySet\n
override val values: Collection<Nothing> get() = EmptyList\n    private fun readResolve(): Any =
EmptyMap\n}\n\n\n/**\n * Returns an empty read-only map of specified type.\n * The returned map is serializable
(JVM).\n * @sample samples.collections.Maps.Instantiation.emptyReadOnlyMap\n */\npublic fun <K, V>
emptyMap(): Map<K, V> = @Suppress("UNCHECKED_CAST") (EmptyMap as Map<K, V>)\n\n\n/**\n * Returns

```

a new read-only map with the specified contents, given as a list of pairs where the first value is the key and the second is the value. If multiple pairs have the same key, the resulting map will contain the value from the last of those pairs. Entries of the map are iterated in the order they were specified. The returned map is serializable (JVM).

```
@sample samples.collections.Maps.Instantiation.mapFromPairs\n\npublic fun <K, V> mapOf(vararg pairs: Pair<K, V>): Map<K, V> =\n    if (pairs.size > 0) pairs.toMap(LinkedHashMap(mapCapacity(pairs.size))) else\n    emptyMap()\n\nReturns an empty read-only map. The returned map is serializable (JVM).\n\n@sample samples.collections.Maps.Instantiation.emptyReadOnlyMap\n\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> mapOf(): Map<K, V> = emptyMap()\n\nReturns an empty new [MutableMap]. The returned map preserves the entry iteration order.\n\n@sample samples.collections.Maps.Instantiation.emptyMutableMap\n
```

```
@kotlin.internal.InlineOnly\npublic inline fun <K, V> mutableMapOf(): MutableMap<K, V> = LinkedHashMap()\n\nReturns a new [MutableMap] with the specified contents, given as a list of pairs where the first component is the key and the second is the value. If multiple pairs have the same key,
```

```
the resulting map will contain the value from the last of those pairs. Entries of the map are iterated in the order they were specified.\n\n@sample samples.collections.Maps.Instantiation.mutableMapFromPairs\n\n@sample samples.collections.Maps.Instantiation.emptyMutableMap\n\npublic fun <K, V> mutableMapOf(vararg pairs: Pair<K, V>): MutableMap<K, V> =\n    LinkedHashMap<K, V>(mapCapacity(pairs.size)).apply { putAll(pairs) }\n\nReturns an empty new [HashMap].\n\n@sample samples.collections.Maps.Instantiation.emptyHashMap\n
```

```
@kotlin.internal.InlineOnly\npublic inline fun <K, V> hashMapOf(): HashMap<K, V> = HashMap<K, V>()\n\nReturns a new [HashMap] with the specified contents, given as a list of pairs where the first component is the key and the second is the value.\n\n@sample samples.collections.Maps.Instantiation.hashMapFromPairs\n\npublic fun <K, V> hashMapOf(vararg pairs: Pair<K, V>): HashMap<K, V> = HashMap<K,
```

```
V>(mapCapacity(pairs.size)).apply { putAll(pairs) }\n\nReturns an empty new [LinkedHashMap].\n
```

```
@kotlin.internal.InlineOnly\npublic inline fun <K, V> linkedMapOf(): LinkedHashMap<K, V> = LinkedHashMap<K, V>()\n\nReturns a new [LinkedHashMap] with the specified contents, given as a list of pairs where the first component is the key and the second is the value. If multiple pairs have the same key, the resulting map will contain the value from the last of those pairs. Entries of the map are iterated in the order they were specified.\n\n@sample samples.collections.Maps.Instantiation.linkedMapFromPairs\n
```

```
public fun <K, V> linkedMapOf(vararg pairs: Pair<K, V>): LinkedHashMap<K, V> = pairs.toMap(LinkedHashMap(mapCapacity(pairs.size)))\n\nBuilds a new read-only [Map] by populating a [MutableMap] using the given [builderAction] and returning a read-only map with the same key-value pairs. The map passed
```

```
as a receiver to the [builderAction] is valid only inside that function. Using it outside of the function produces an unspecified behavior. Entries of the map are iterated in the order they were added by the [builderAction]. The returned map is serializable (JVM).\n\n@sample samples.collections.Builders.Maps.buildMapSample\n
```

```
@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> buildMap(@BuilderInference builderAction: MutableMap<K, V>() -> Unit): Map<K, V> {\n    contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n    return buildMapInternal(builderAction)\n}\n\n@PublishedApi\n@kotlin.internal.InlineOnly\ninternal expect inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>() -> Unit): Map<K, V>\n\nBuilds a new read-only [Map] by populating a [MutableMap] using the given [builderAction] and returning a read-only map with
```

the same key-value pairs.
 * The map passed as a receiver to the [builderAction] is valid only inside that function.
 * Using it outside of the function produces an unspecified behavior.
 * [capacity] is used to hint the expected number of pairs added in the [builderAction].
 * Entries of the map are iterated in the order they were added by the [builderAction].
 * The returned map is serializable (JVM).
 * @throws IllegalArgumentException if the given [capacity] is negative.
 * @sample samples.collections.Builders.Maps.buildMapSample

```

*^@SinceKotlin("1.6")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^@public
inline fun <K, V> buildMap(capacity: Int, @BuilderInference builderAction: MutableMap<K, V>() -> Unit):
Map<K, V> {
    contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }
    return
    buildMapInternal(capacity,
    builderAction)
}
^@PublishedApi^@SinceKotlin("1.3")^@kotlin.internal.InlineOnly^@internal
expect inline fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>() -> Unit): Map<K,
V>
**^@PublishedApi^@internal expect fun
mapCapacity(expectedSize: Int): Int
**^@Returns `true` if this map is not empty.
* @sample samples.collections.Maps.Usage.mapIsNotEmpty
*^@kotlin.internal.InlineOnly^@public inline fun <K, V>
Map<out K, V>.isEmpty(): Boolean = !isEmpty()
**^@Returns `true` if this nullable map is either null or
empty.
* @sample samples.collections.Maps.Usage.mapIsNullOrEmpty
*^@SinceKotlin("1.3")^@kotlin.internal.InlineOnly^@public inline fun <K, V> Map<out K,
V>?.isNullOrEmpty(): Boolean {
    contract {
        returns(false) implies (this@isNullOrEmpty != null)
    }
    return this == null || isEmpty()
}
**^@Returns the [Map] if its not `null`, or the empty [Map] otherwise.
* @sample samples.collections.Maps.Usage.mapOrElse
*^@kotlin.internal.InlineOnly^@public
inline fun <K, V> Map<K, V>?.orElse(): Map<K, V> = this ?: emptyMap()
**^@Returns this map if it's not
empty
* or the result of calling [defaultValue] function if the map is empty.
* @sample samples.collections.Maps.Usage.mapIfEmpty
*^@SinceKotlin("1.3")^@kotlin.internal.InlineOnly^@public
inline fun <M, R> M.ifEmpty(defaultValue: () -> R): R where M : Map<*, *>, M : R =
    if (isEmpty())
    defaultValue() else this
**^@Checks if the map contains the given key.
* @sample samples.collections.Maps.Usage.containsKey
*^@kotlin.internal.InlineOnly^@public inline operator fun
<@kotlin.internal.OnlyInputTypes K, V> Map<out K, V>.contains(key: K): Boolean = containsKey(key)
**^@Returns the value corresponding to the given [key], or `null` if such a key is not present in the map.
*^@kotlin.internal.InlineOnly^@public
inline operator fun <@kotlin.internal.OnlyInputTypes K, V> Map<out K, V>.get(key: K): V? =
    @Suppress("UNCHECKED_CAST") (this as Map<K, V>).get(key)
**^@Allows to use the index operator
for storing values in a mutable map.
*^@kotlin.internal.InlineOnly^@public inline operator fun <K, V>
MutableMap<K, V>.set(key: K, value: V): Unit {
    put(key, value)
}
**^@Returns `true` if the map
contains the specified [key].
* @sample samples.collections.Maps.Usage.containsKey
*^@Allows to overcome type-safety restriction of `containsKey` that requires to
pass a key of type `K`.
*^@kotlin.internal.InlineOnly^@public inline fun <@kotlin.internal.OnlyInputTypes K>
Map<out K, *>.containsKey(key: K): Boolean =
    @Suppress("UNCHECKED_CAST") (this as Map<K,
*>).containsKey(key)
**^@Returns `true` if the map maps one or more keys to the specified [value].
* @sample samples.collections.Maps.Usage.containsValue
*^@Allows to overcome type-safety restriction of `containsValue` that requires to pass a value of type `V`.
* @sample samples.collections.Maps.Usage.containsValue
*^@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases
*^@kotlin.internal.InlineOnly^@public inline fun <K, @kotlin.internal.OnlyInputTypes V> Map<K,
V>.containsValue(value: V): Boolean = this.containsValue(value)
**^@Removes the specified key and its
corresponding value from this map.
* @sample samples.collections.Maps.Usage.remove
*^@return the previous value associated with the key, or `null` if the key
was not present in the map.
* @sample samples.collections.Maps.Usage.remove
*^@Allows to overcome type-safety restriction of `remove` that requires to pass a key
of type `K`.
*^@kotlin.internal.InlineOnly^@public inline fun <@kotlin.internal.OnlyInputTypes K, V>
MutableMap<out K, V>.remove(key: K): V? =
    @Suppress("UNCHECKED_CAST") (this as MutableMap<K,

```

```

V>).remove(key)\n\n**\n * Returns the key component of the map entry.\n * This method allows to use
destructuring declarations when working with maps, for example:\n * ```\n * for ((key, value) in map) {\n *
    // do something with the key and the value\n * }\n * ```\n * \n\n@kotlin.internal.InlineOnly\npublic inline operator
fun <K, V> Map.Entry<K, V>.component1(): K = key\n\n**\n * Returns the value component of the map entry.\n
*\n * This method allows to use destructuring declarations when working with maps, for example:\n * ```\n * for
((key, value) in map) {\n *     // do something with the key and the value\n * }\n * ```\n
*\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> Map.Entry<K, V>.component2(): V =
value\n\n**\n * Converts entry to [Pair] with key being first component and value being second.\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map.Entry<K, V>.toPair(): Pair<K, V> = Pair(key,
value)\n\n**\n * Returns the value for the given key, or the result of the [defaultValue] function if there was no
entry for the given key.\n * \n\n * @sample samples.collections.Maps.Usage.getOrElse\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<K,
V>.getOrElse(key: K, defaultValue: () -> V): V = get(key) ?: defaultValue()\n\n\ninternal inline fun <K, V>
Map<K, V>.getOrElseNullable(key: K, defaultValue: () -> V): V {\n    val value = get(key)\n    if (value == null
&& !containsKey(key)) {\n        return defaultValue()\n    } else {\n        @Suppress("UNCHECKED_CAST")\n        return value as V\n    }\n}\n\n**\n * Returns the value for the given [key] or throws an exception if there is no
such key in the map.\n * \n\n * If the map was created by [withDefault], resorts to its `defaultValue` provider
function\n * instead of throwing an exception.\n * \n\n * @throws NoSuchElementException when the map doesn't
contain a value for the specified key and\n * no implicit default value was provided for that map.\n
*\n\n@SinceKotlin("1.1")\npublic fun <K, V> Map<K, V>.getValue(key: K): V =
getOrDefault(key)\n\n**\n * Returns the value for the given key. If the key is not found in the map, calls
the [defaultValue] function,\n * puts
its result into the map under the given key and returns it.\n * \n\n * Note that the operation is not guaranteed to be
atomic if the map is being modified concurrently.\n * \n\n * @sample samples.collections.Maps.Usage.getOrPut\n
*\n\npublic inline fun <K, V> MutableMap<K, V>.getOrPut(key: K, defaultValue: () -> V): V {\n    val value =
get(key)\n    return if (value == null) {\n        val answer = defaultValue()\n        put(key, answer)\n        answer\n    }
else {\n        value\n    }\n}\n\n**\n * Returns an [Iterator] over the entries in the [Map].\n * \n\n * @sample
samples.collections.Maps.Usage.forOverEntries\n * \n\n@kotlin.internal.InlineOnly\npublic inline operator fun <K,
V> Map<out K, V>.iterator(): Iterator<Map.Entry<K, V>> = entries.iterator()\n\n**\n * Returns a
[MutableIterator] over the mutable entries in the [MutableMap].\n * \n\n
*\n\n@kotlin.jvm.JvmName("mutableIterator")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V>
MutableMap<K, V>.iterator(): MutableIterator<MutableMap.MutableEntry<K,
V>> = entries.iterator()\n\n**\n * Populates the given [destination] map with entries having the keys of this map
and the values obtained\n * by applying the [transform] function to each entry in this [Map].\n * \n\n\npublic inline fun
<K, V, R, M : MutableMap<in K, in R>> Map<out K, V>.mapValuesTo(destination: M, transform: (Map.Entry<K,
V>) -> R): M {\n    return entries.associateByTo(destination, { it.key }, transform)\n}\n\n**\n * Populates the given
[destination] map with entries having the keys obtained\n * by applying the [transform] function to each entry in this
[Map] and the values of this map.\n * \n\n * In case if any two entries are mapped to the equal keys, the value of the
latter one will overwrite\n * the value associated with the former one.\n * \n\n\npublic inline fun <K, V, R, M :
MutableMap<in R, in V>> Map<out K, V>.mapKeysTo(destination: M, transform: (Map.Entry<K, V>) -> R): M
{\n    return entries.associateByTo(destination, transform, {
it.value })\n}\n\n**\n * Puts all the given [pairs] into this [MutableMap] with the first component in the pair being
the key and the second the value.\n * \n\n\npublic fun <K, V> MutableMap<in K, in V>.putAll(pairs: Array<out
Pair<K, V>>): Unit {\n    for ((key, value) in pairs) {\n        put(key, value)\n    }\n}\n\n**\n * Puts all the elements
of the given collection into this [MutableMap] with the first component in the pair being the key and the second the
value.\n * \n\n\npublic fun <K, V> MutableMap<in K, in V>.putAll(pairs: Iterable<Pair<K, V>>): Unit {\n    for ((key,
value) in pairs) {\n        put(key, value)\n    }\n}\n\n**\n * Puts all the elements of the given sequence into this
[MutableMap] with the first component in the pair being the key and the second the value.\n * \n\n\npublic fun <K, V>

```

```

MutableMap<in K, in V>.putAll(pairs: Sequence<Pair<K, V>>): Unit {
    for ((key, value) in pairs) {
        put(key, value)
    }
}

* Returns a new map with entries having the
keys of this map and the values obtained by applying the [transform]
* function to each entry in this [Map].
* The returned map preserves the entry iteration order of the original map.
@sample
samples.collections.Maps.Transformations.mapValues
*/
public inline fun <K, V, R> Map<out K,
V>.mapValues(transform: (Map.Entry<K, V>) -> R): Map<K, R> {
    return mapValuesTo(LinkedHashMap<K,
R>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()
}

* Returns a new Map with entries
having the keys obtained by applying the [transform] function to each entry in this
* [Map] and the values of this
map.
* In case if any two entries are mapped to the equal keys, the value of the latter one will overwrite
* the
value associated with the former one.
* The returned map preserves the entry iteration order of the original
map.
* @sample
samples.collections.Maps.Transformations.mapKeys
*/
public inline fun <K, V, R>
Map<out K, V>.mapKeys(transform:
(Map.Entry<K, V>) -> R): Map<R, V> {
    return mapKeysTo(LinkedHashMap<R, V>(mapCapacity(size)),
transform) // .optimizeReadOnlyMap()
}

* Returns a map containing all key-value pairs with keys
matching the given [predicate].
* The returned map preserves the entry iteration order of the original map.
@sample
samples.collections.Maps.Filtering.filterKeys
*/
public inline fun <K, V> Map<out K,
V>.filterKeys(predicate: (K) -> Boolean): Map<K, V> {
    val result = LinkedHashMap<K, V>()
    for (entry in this) {
        if (predicate(entry.key)) {
            result.put(entry.key, entry.value)
        }
    }
    return
result
}

* Returns a map containing all key-value pairs with values matching the given [predicate].
* The returned map preserves the entry iteration order of the original map.
@sample
samples.collections.Maps.Filtering.filterValues
*/
public inline fun <K, V> Map<out K,
V>.filterValues(predicate: (V) -> Boolean): Map<K,
V> {
    val result = LinkedHashMap<K, V>()
    for (entry in this) {
        if (predicate(entry.value)) {
            result.put(entry.key, entry.value)
        }
    }
    return result
}

* Appends all entries matching the
given [predicate] into the mutable map given as [destination] parameter.
* @return the destination map.
@sample
samples.collections.Maps.Filtering.filterTo
*/
public inline fun <K, V, M : MutableMap<in K, in V>>
Map<out K, V>.filterTo(destination: M, predicate: (Map.Entry<K, V>) -> Boolean): M {
    for (element in this) {
        if (predicate(element)) {
            destination.put(element.key, element.value)
        }
    }
    return
destination
}

* Returns a new map containing all key-value pairs matching the given [predicate].
* The returned map preserves the entry iteration order of the original map.
@sample
samples.collections.Maps.Filtering.filter
*/
public inline fun <K, V> Map<out K, V>.filter(predicate:
(Map.Entry<K, V>) -> Boolean): Map<K, V> {
    return filterTo(LinkedHashMap<K, V>(),
predicate)
}

* Appends all entries not matching the given [predicate] into the given [destination].
* @return the destination map.
@sample
samples.collections.Maps.Filtering.filterNotTo
*/
public inline fun
<K, V, M : MutableMap<in K, in V>> Map<out K, V>.filterNotTo(destination: M, predicate: (Map.Entry<K, V>) -
> Boolean): M {
    for (element in this) {
        if (!predicate(element)) {
            destination.put(element.key,
element.value)
        }
    }
    return destination
}

* Returns a new map containing all key-value pairs
not matching the given [predicate].
* The returned map preserves the entry iteration order of the original
map.
* @sample
samples.collections.Maps.Filtering.filterNot
*/
public inline fun <K, V> Map<out K,
V>.filterNot(predicate: (Map.Entry<K, V>) -> Boolean): Map<K, V> {
    return filterNotTo(LinkedHashMap<K,
V>(), predicate)
}

* Returns a new map containing all key-value pairs from the given collection of
pairs.
* The returned map preserves the entry iteration order of the original collection.
* If any of two pairs
would have the same key the last one gets added to the map.
*/
public fun <K, V> Iterable<Pair<K,
V>>.toMap(): Map<K, V> {
    if (this is Collection) {
        return when (size) {
            0 -> emptyMap()
            1 -> mapOf(if (this is List) this[0] else iterator().next())
            else -> toMap(LinkedHashMap<K,
V>(mapCapacity(size)))
        }
    }
    return toMap(LinkedHashMap<K,
V>().optimizeReadOnlyMap())
}

* Populates and returns the [destination] mutable map with key-value
pairs from the given collection of pairs.
*/
public fun <K, V, M : MutableMap<in K, in V>> Iterable<Pair<K,

```

`V>>.toMap(destination: M): M =` `destination.apply { putAll(this@toMap) }` `}\n\n/**\n * Returns a new map containing all key-value pairs from the given array of pairs.\n * \n * The returned map preserves the entry iteration order of the original array.\n * If any of two pairs would have the same key the last one gets added to the map.\n */\npublic fun <K, V> Array<out Pair<K, V>>.toMap(): Map<K, V> = when (size) { \n 0 -> emptyMap()\n 1 -> mapOf(this[0])\n else -> toMap(LinkedHashMap<K, V>(mapCapacity(size)))\n }\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given array of pairs.\n */\npublic fun <K, V, M : MutableMap<in K, in V>> Array<out Pair<K, V>>.toMap(destination: M): M =` `destination.apply { putAll(this@toMap) }` `}\n\n/**\n * Returns a new map containing all key-value pairs from the given sequence of pairs.\n * \n * The returned map preserves the entry iteration order of the original sequence.\n * If any of two pairs would have the same key the last one gets added to the map.\n */\npublic fun <K, V> Sequence<Pair<K, V>>.toMap(): Map<K, V> =` `toMap(LinkedHashMap<K, V>().optimizeReadOnlyMap())\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given sequence of pairs.\n */\npublic fun <K, V, M : MutableMap<in K, in V>> Sequence<Pair<K, V>>.toMap(destination: M): M =` `destination.apply { putAll(this@toMap) }` `}\n\n/**\n * Returns a new read-only map containing all key-value pairs from the original map.\n * \n * The returned map preserves the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic fun <K, V> Map<out K, V>.toMap(): Map<K, V> = when (size) { \n 0 -> emptyMap()\n 1 -> toSingletonMap()\n else -> toMutableMap()\n }\n\n/**\n * Returns a new mutable map containing all key-value pairs from the original map.\n * \n * The returned map preserves the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic fun <K, V> Map<out K, V>.toMutableMap(): MutableMap<K, V> = LinkedHashMap(this)\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given map.\n */\n@SinceKotlin("1.1")\npublic fun <K, V, M : MutableMap<in K, in V>> Map<out K, V>.toMap(destination: M): M =` `destination.apply { putAll(this@toMap) }` `}\n\n/**\n * Creates a new read-only map by replacing or adding an entry to this map from a given key-value [pair].\n * \n * The returned map preserves the entry iteration order of the original map.\n * The [pair] is iterated in the end if it has a unique key.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pair: Pair<K, V>): Map<K, V> =` `if (this.isEmpty()) mapOf(pair) else LinkedHashMap(this).apply { put(pair.first, pair.second) }` `}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given collection of key-value [pairs].\n * \n * The returned map preserves the entry iteration order of the original map.\n * Those [pairs] with unique keys are iterated in the end in the order of [pairs] collection.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Iterable<Pair<K, V>>): Map<K, V> =` `if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs) }` `}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given array of key-value [pairs].\n * \n * The returned map preserves the entry iteration order of the original map.\n * Those [pairs] with unique keys are iterated in the end in the order of [pairs] array.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Array<out Pair<K, V>>): Map<K, V> =` `if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs) }` `}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given sequence of key-value [pairs].\n * \n * The returned map preserves the entry iteration order of the original map.\n * Those [pairs] with unique keys are iterated in the end in the order of [pairs] sequence.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Sequence<Pair<K, V>>): Map<K, V> =` `LinkedHashMap(this).apply { putAll(pairs) }.optimizeReadOnlyMap()` `}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from another [map].\n * \n * The returned map preserves the entry iteration order of the original map.\n * Those entries of another [map] that are missing in this map are iterated in the end in the order of that [map].\n */\npublic operator fun <K, V> Map<out K, V>.plus(map: Map<out K, V>): Map<K, V> =` `LinkedHashMap(this).apply { putAll(map) }` `}\n\n/**\n * Appends or replaces the given [pair] in this mutable map.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pair: Pair<K, V>) { \n put(pair.first, pair.second)\n }\n\n/**\n * Appends or replaces all pairs from the given collection of [pairs] in this mutable map.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <K,`


```

V> MutableMap<in K, in V>.plusAssign(pairs: Iterable<Pair<K, V>>) {\n  putAll(pairs)\n}\n\n/**\n * Appends or replaces all pairs from the given array of [pairs] in this mutable map.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs:\nArray<out Pair<K, V>>) {\n  putAll(pairs)\n}\n\n/**\n * Appends or replaces all pairs from the given sequence of\n [pairs] in this mutable map.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in\nK, in V>.plusAssign(pairs: Sequence<Pair<K, V>>) {\n  putAll(pairs)\n}\n\n/**\n * Appends or replaces all\n entries from the given [map] in this mutable map.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <K,\nV> MutableMap<in K, in V>.plusAssign(map: Map<K, V>) {\n  putAll(map)\n}\n\n/**\n * Returns a map\n containing all entries of the original map except the entry with the given [key].\n */\n * The returned map preserves\n the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic operator fun <K, V> Map<out K,\nV>.minus(key: K):\n\nMap<K, V> =\n  this.toMutableMap().apply { minusAssign(key) }.optimizeReadOnlyMap()\n\n/**\n * Returns a\n map containing all entries of the original map except those entries\n * the keys of which are contained in the given\n [keys] collection.\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic operator fun <K, V> Map<out K, V>.minus(keys: Iterable<K>): Map<K, V> =\n  this.toMutableMap().apply { minusAssign(keys) }.optimizeReadOnlyMap()\n\n/**\n * Returns a map containing\n all entries of the original map except those entries\n * the keys of which are contained in the given [keys] array.\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic\noperator fun <K, V> Map<out K, V>.minus(keys: Array<out K>): Map<K, V> =\n  this.toMutableMap().apply {\n  minusAssign(keys) }.optimizeReadOnlyMap()\n\n/**\n * Returns a map containing all entries of the original map\n except\n those entries\n * the keys of which are contained in the given [keys] sequence.\n */\n * The returned map preserves\n the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic operator fun <K, V> Map<out K,\nV>.minus(keys: Sequence<K>): Map<K, V> =\n  this.toMutableMap().apply { minusAssign(keys)\n}.optimizeReadOnlyMap()\n\n/**\n * Removes the entry with the given [key] from this mutable map.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K,\nV>.minusAssign(key: K) {\n  remove(key)\n}\n\n/**\n * Removes all entries the keys of which are contained in\n the given [keys] collection from this mutable map.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K,\nV>.minusAssign(keys: Iterable<K>) {\n  this.keys.removeAll(keys)\n}\n\n/**\n * Removes all entries the keys of\n which are contained in the given [keys] array from this mutable map.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic\ninline operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Array<out K>) {\n\nthis.keys.removeAll(keys)\n}\n\n/**\n * Removes all entries from the keys of which are contained in the given\n [keys] sequence from this mutable map.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline\noperator fun <K, V> MutableMap<K, V>.minusAssign(keys: Sequence<K>) {\n\nthis.keys.removeAll(keys)\n}\n\n// do not expose for now\n@PublishedApi\ninternal fun <K, V> Map<K,\nV>.optimizeReadOnlyMap() = when (size) {\n  0 -> emptyMap()\n  1 -> toSingletonMapOrSelf()\n  else ->\nthis}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of\n this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SetsKt")\n@file:OptIn(kotlin.experimenta\nl.ExperimentalTypeInference::class)\n\npackage\n\nkotlin.collections\n\nimport kotlin.contracts.*\n\ninternal object EmptySet : Set<Nothing>, Serializable {\n  private const val serialVersionUID: Long = 3406603774387020532\n\n  override fun equals(other: Any?): Boolean =\nother is Set<*> && other.isEmpty()\n  override fun hashCode(): Int = 0\n  override fun toString(): String =\n"[]"\n\n  override val size: Int get() = 0\n  override fun isEmpty(): Boolean = true\n  override fun\ncontains(element: Nothing): Boolean = false\n  override fun containsAll(elements: Collection<Nothing>): Boolean\n= elements.isEmpty()\n\n  override fun iterator(): Iterator<Nothing> = EmptyIterator\n\n  private fun

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`readResolve(): Any = EmptySet`
 Returns an empty read-only set. The returned set is serializable (JVM).

`@sample samples.collections.Collections.Sets.emptyReadOnlySet`
`public fun <T> emptySet(): Set<T> = EmptySet`
 Returns a new read-only set with the given elements. Elements of the set are iterated in the order they were specified. The returned set is serializable (JVM).

`@sample samples.collections.Collections.Sets.readOnlySet`
`public fun <T> setOf(vararg elements: T): Set<T> = if (elements.size > 0) elements.toSet() else emptySet`
 Returns an empty read-only set. The returned set is serializable (JVM).

`@sample samples.collections.Collections.Sets.emptyReadOnlySet`
`@kotlin.internal.InlineOnly`
`public inline fun <T> setOf(): Set<T> = emptySet`
 Returns an empty new [MutableSet]. The returned set preserves the element iteration order.

`@sample samples.collections.Collections.Sets.emptyMutableSet`
`@SinceKotlin("1.1")`
`@kotlin.internal.InlineOnly`
`public inline fun <T> mutableSetOf(): MutableSet<T> = LinkedHashSet`
 Returns a new [MutableSet] with the given elements. Elements of the set are iterated in the order they were specified.

`@sample samples.collections.Collections.Sets.mutableSet`
`public fun <T> mutableSetOf(vararg elements: T): MutableSet<T> = elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))`
 Returns an empty new [HashSet].

`@SinceKotlin("1.1")`
`@kotlin.internal.InlineOnly`
`public inline fun <T> hashSetOf(): HashSet<T> = HashSet`
 Returns a new [HashSet] with the given elements.

`public fun <T> hashSetOf(vararg elements: T): HashSet<T> = elements.toCollection(HashSet(mapCapacity(elements.size)))`
 Returns an empty new [LinkedHashSet].

`@sample samples.collections.Collections.Sets.emptyLinkedHashSet`
`@SinceKotlin("1.1")`
`@kotlin.internal.InlineOnly`
`public inline fun <T> linkedSetOf(): LinkedHashSet<T> = LinkedHashSet`
 Returns a new [LinkedHashSet] with the given elements. Elements of the set are iterated in the order they were specified.

`@sample samples.collections.Collections.Sets.linkedHashSet`
`public fun <T> linkedSetOf(vararg elements: T): LinkedHashSet<T> = elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))`
 Returns a new read-only set either with single given element, if it is not null, or empty set if the element is null. The returned set is serializable (JVM).

`@sample samples.collections.Collections.Sets.setOfNotNull`
`@SinceKotlin("1.4")`
`public fun <T : Any> setOfNotNull(element: T?): Set<T> = if (element != null) setOf(element) else emptySet`
 Returns a new read-only set only with those given elements, that are not null. Elements of the set are iterated in the order they were specified. The returned set is serializable (JVM).

`@sample samples.collections.Collections.Sets.setOfNotNull`
`@SinceKotlin("1.4")`
`public fun <T : Any> setOfNotNull(vararg elements: T?): Set<T> {`
`return elements.filterNotNullTo(LinkedHashSet())`
 Builds a new read-only [Set] by populating a [MutableSet] using the given [builderAction] and returning a read-only set with the same elements.

The set passed as a receiver to the [builderAction] is valid only inside that function. Using it outside of the function produces an unspecified behavior. Elements of the set are iterated in the order they were added by the [builderAction]. The returned set is serializable (JVM).

`@sample samples.collections.Builders.Sets.buildSetSample`
`@SinceKotlin("1.6")`
`@WasExperimental(ExperimentalStdlibApi::class)`
`@kotlin.internal.InlineOnly`
`public inline fun <E> buildSet(@BuilderInference builderAction: MutableSet<E>.() -> Unit): Set<E> {`
`contract {`
`callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }`
`return buildSetInternal(builderAction)`
 Builds a new read-only [Set] by populating a [MutableSet] using the given [builderAction] and returning a read-only set with the same elements.

The set passed as a receiver to the [builderAction] is valid only inside that function. Using it outside of the function produces an unspecified behavior. [capacity] is used to hint the expected number of elements added in the [builderAction]. Elements of the set are iterated in the order they were added by the [builderAction]. The returned set is serializable (JVM).

@throws IllegalArgumentException if the given [capacity] is negative.

`@sample`

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samples.collections.Builders.Sets.buildSetSample\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <E> buildSet(capacity: Int, @BuilderInference builderAction: MutableSet<E>().() -> Unit): Set<E> {\n
contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return buildSetInternal(capacity,\n
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>().() -> Unit): Set<E>\n\n/**\nReturns this Set if it's not `null` and the empty set otherwise. *\n@kotlin.internal.InlineOnly\npublic inline fun <T> Set<T>?.orEmpty(): Set<T> = this ?: emptySet()\n\ninternal fun <T> Set<T>.optimizeReadOnlySet() = when (size) {\n 0 -> emptySet()\n 1 -> setOf(iterator().next())\n else -> this\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n@file:Suppress("PLATFORM_CLASS_MAPPED_TO_KOTLIN")\n\npackage kotlin.text\n\n/**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toByteArrayOrNull(): Byte? = toByteOrNull(radix = 10)\n\n/**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toByteArrayOrNull(radix: Int): Byte? {\n val int = this.toIntOrNull(radix) ?: return null\n if (int < Byte.MIN_VALUE || int > Byte.MAX_VALUE) return null\n return int.toByteArray()\n}\n\n/**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toShortOrNull(): Short? = toShortOrNull(radix = 10)\n\n/**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toShortOrNull(radix: Int): Short? {\n val int = this.toIntOrNull(radix) ?: return null\n if (int < Short.MIN_VALUE || int > Short.MAX_VALUE) return null\n return int.toShort()\n}\n\n/**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toIntOrNull(): Int? = toIntOrNull(radix = 10)\n\n/**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toIntOrNull(radix: Int): Int? {\n checkRadix(radix)\n val length = this.length\n if (length == 0) return null\n val start: Int\n val isNegative: Boolean\n val limit: Int\n val firstChar = this[0]\n if (firstChar < '0') { // Possible leading sign\n if (length == 1) return null // non-digit (possible sign) only, no digits after\n start = 1\n if (firstChar == '-') {\n isNegative = true\n limit = Int.MIN_VALUE\n } else if (firstChar == '+') {\n isNegative = false\n limit = Int.MAX_VALUE\n } else\n return null\n } else {\n start = 0\n isNegative = false\n limit = -Int.MAX_VALUE\n }\n\n val limitForMaxRadix = (-Int.MAX_VALUE) / 36\n var limitBeforeMul = limitForMaxRadix\n var result = 0\n for (i in start until length) {\n val digit = digitOf(this[i], radix)\n if (digit < 0) return null\n if (result < limitBeforeMul) {\n if (limitBeforeMul == limitForMaxRadix) {\n limitBeforeMul = limit / radix\n\n if (result < limitBeforeMul) {\n return null\n }\n } else {\n return null\n }\n }\n result *= radix\n\n if (result < limit + digit) return null\n result -= digit\n }\n return if (isNegative) result else -result\n}\n\n/**\n * Parses the string as a [Long] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toLongOrNull(): Long? = toLongOrNull(radix = 10)\n\n/**\n * Parses the string as a [Long] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n*\n@SinceKotlin("1.1")\npublic fun String.toLongOrNull(radix: Int): Long? {\n

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checkRadix(radix)\n\n    val length = this.length\n    if (length == 0) return null\n\n    val start: Int\n    val isNegative: Boolean\n    val limit: Long\n    val firstChar = this[0]\n    if (firstChar < '0') { // Possible leading sign\n        if (length == 1) return null // non-digit (possible sign) only, no digits after\n        start = 1\n        if (firstChar == '-') {\n            isNegative = true\n            limit = Long.MIN_VALUE\n        } else if (firstChar == '+') {\n            isNegative = false\n            limit = Long.MAX_VALUE\n        } else\n            return null\n    } else {\n        start = 0\n        isNegative = false\n        limit = -Long.MAX_VALUE\n    }\n\n    val limitForMaxRadix = (-Long.MAX_VALUE) / 36\n    var limitBeforeMul = limitForMaxRadix\n    var result = 0L\n    for (i in start until length) {\n        val digit = digitOf(this[i], radix)\n        if (digit < 0) return null\n        if (result < limitBeforeMul) {\n            if (limitBeforeMul == limitForMaxRadix) {\n                limitBeforeMul = limit / radix\n            } else if (result < limitBeforeMul) {\n                return null\n            }\n        } else {\n            return null\n        }\n    }\n\n    result *= radix\n    if (result < limit + digit) return null\n    result -= digit\n}\n\nreturn if (isNegative) result else -result\n}\n\n\ninternal fun numberFormatError(input: String): Nothing = throw NumberFormatException("Invalid number format: '$input')\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.time\nimport kotlin.contracts.*\nimport kotlin.jvm.JvmInline\nimport kotlin.math.*\n\n/**\n * Represents the amount of time one instant of time is away from another instant.\n * A negative duration is possible in a situation when the second instant is earlier than the first one.\n * The type can store duration values up to 1146 years with nanosecond precision,\n * and up to 1146 million years with millisecond precision.\n * If a duration-returning operation provided in `kotlin.time` produces a duration value that doesn't fit into the above range,\n * the returned `Duration` is infinite.\n * An infinite duration value [Duration.INFINITE] can be used to represent infinite timeouts.\n * To construct a duration use either the extension function [toDuration],\n * or the extension properties [hours], [minutes], [seconds], and so on,\n * available on [Int], [Long], and [Double] numeric types.\n * To get the value of this duration expressed in a particular [duration units][DurationUnit]\n * use the functions [toInt], [toLong], and [toDouble]\n * or the properties [inWholeHours], [inWholeMinutes], [inWholeSeconds], [inWholeNanoseconds], and so on.\n */\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\n@JvmInline\npublic value class Duration internal constructor(private val rawValue: Long) : Comparable<Duration> {\n    private val value: Long get() = rawValue shr 1\n    private inline val unitDiscriminator: Int get() = rawValue.toInt() and 1\n    private fun isInNanos() = unitDiscriminator == 0\n    private fun isInMillis() = unitDiscriminator == 1\n    private val storageUnit get() = if (isInNanos()) DurationUnit.NANOSECONDS else DurationUnit.MILLISECONDS\n\n    init {\n        if (durationAssertionsEnabled) {\n            if (isInNanos()) {\n                if (value !in -MAX_NANOS..MAX_NANOS) throw AssertionError("$value ns is out of nanoseconds range")\n            } else {\n                if (value !in -MAX_MILLIS..MAX_MILLIS) throw AssertionError("$value ms is out of milliseconds range")\n                if (value in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) throw AssertionError("$value ms is denormalized")\n            }\n        }\n    }\n\n    companion object {\n        /** The duration equal to exactly 0 seconds. */\n        public val ZERO: Duration = Duration(0L)\n\n        /** The duration whose value is positive infinity. It is useful for representing timeouts that should never expire. */\n        public val INFINITE: Duration = durationOfMillis(MAX_MILLIS)\n\n        internal val NEG_INFINITE: Duration = durationOfMillis(-MAX_MILLIS)\n\n        /** Converts the given time duration [value] expressed in the specified [sourceUnit] into the specified [targetUnit]. */\n        @ExperimentalTime\n        public fun convert(value: Double, sourceUnit: DurationUnit, targetUnit: DurationUnit): Double =\n            convertDurationUnit(value, sourceUnit, targetUnit)\n\n        // Duration construction extension properties in Duration companion scope\n        /** Returns a [Duration] equal to this [Int] number of nanoseconds. */\n        @kotlin.internal.InlineOnly\n        public inline val Int.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n        /** Returns a [Duration] equal to this [Long] number of nanoseconds. */\n        @kotlin.internal.InlineOnly

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    public inline val Long.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n    /**\n     *
Returns a [Duration] equal to this [Double] number of nanoseconds.\n     *\n     * Depending on its magnitude,
the value is rounded to an integer number of nanoseconds or milliseconds.\n     *\n     * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public
inline val Double.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a
[Duration] equal to this [Int] number of microseconds. *\n    @kotlin.internal.InlineOnly\n    public inline val
Int.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n    /** Returns a [Duration] equal to
this [Long] number of microseconds. *\n    @kotlin.internal.InlineOnly\n    public inline val
Long.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n    /**\n     * Returns
a [Duration] equal to this [Double] number of microseconds.\n     *\n     * Depending on its magnitude, the
value is rounded to an integer number of nanoseconds or milliseconds.\n     *\n     * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public
inline val Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n\n    /** Returns a
[Duration] equal to this [Int] number of milliseconds. *\n    @kotlin.internal.InlineOnly\n    public inline val
Int.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n    /** Returns a [Duration] equal to this
[Long] number of milliseconds. *\n    @kotlin.internal.InlineOnly\n    public inline val Long.milliseconds get()
= toDuration(DurationUnit.MILLISECONDS)\n\n    /**\n     * Returns a [Duration] equal to this [Double]
number of milliseconds.\n     *\n     * Depending on its magnitude, the
value is rounded to an integer number of nanoseconds or milliseconds.\n     *\n     * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public
inline val Double.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n\n    /** Returns a
[Duration] equal to this [Int] number of seconds. *\n    @kotlin.internal.InlineOnly\n    public inline val
Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n    /** Returns a [Duration] equal to this [Long]
number of seconds. *\n    @kotlin.internal.InlineOnly\n    public inline val Long.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n    /**\n     * Returns a [Duration] equal to this [Double] number of
seconds.\n     *\n     * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or
milliseconds.\n     *\n     * @throws IllegalArgumentException if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public inline val Double.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n\n    /** Returns a [Duration] equal to this [Int] number of minutes. *\n    @kotlin.internal.InlineOnly\n    public inline val Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n    /** Returns a [Duration] equal to this [Long] number of minutes. *\n    @kotlin.internal.InlineOnly\n    public inline val Long.minutes get() = toDuration(DurationUnit.MINUTES)\n\n    /**\n     * Returns a
[Duration] equal to this [Double] number of minutes.\n     *\n     * Depending on its magnitude, the value is
rounded to an integer number of nanoseconds or milliseconds.\n     *\n     * @throws IllegalArgumentException
if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public inline val Double.minutes
get() = toDuration(DurationUnit.MINUTES)\n\n\n    /** Returns a [Duration]
equal to this [Int] number of hours. *\n    @kotlin.internal.InlineOnly\n    public inline val Int.hours get() =
toDuration(DurationUnit.HOURS)\n\n    /** Returns a [Duration] equal to this [Long] number of hours. *\n    @kotlin.internal.InlineOnly\n    public inline val Long.hours get() = toDuration(DurationUnit.HOURS)\n\n    /**\n     * Returns a [Duration] equal to this [Double] number of hours.\n     *\n     * Depending on its
magnitude, the value is rounded to an integer number of nanoseconds or milliseconds.\n     *\n     * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public
inline val Double.hours get() = toDuration(DurationUnit.HOURS)\n\n\n    /** Returns a [Duration] equal to this
[Int] number of days. *\n    @kotlin.internal.InlineOnly\n    public inline val Int.days get() =
toDuration(DurationUnit.DAYS)\n\n    /** Returns a [Duration]
equal to this [Long] number of days. *\n    @kotlin.internal.InlineOnly\n    public inline val Long.days get() =
toDuration(DurationUnit.DAYS)\n\n    /**\n     * Returns a [Duration] equal to this [Double] number of days.\n     *\n     * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or
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milliseconds.\n      *\n      * @throws IllegalArgumentException if this [Double] value is `NaN`.\n      */\n
@kotlin.internal.InlineOnly\n      public inline val Double.days get() = toDuration(DurationUnit.DAYS)\n\n\n
// deprecated static factory functions\n\n      /** Returns a [Duration] representing the specified [value] number of
nanoseconds. */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n      @Deprecated("Use
'Int.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("value.nanoseconds",
"kotlin.time.Duration.Companion.nanoseconds"))\n      @DeprecatedSinceKotlin(warningSince
= "1.6")\n      public fun nanoseconds(value: Int): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n      /** Returns a [Duration] representing the specified
[value] number of nanoseconds. */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n
@Deprecated("Use 'Long.nanoseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6")\n      public fun nanoseconds(value: Long): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n      /**\n      * Returns a [Duration] representing the
specified [value] number of nanoseconds.\n      *\n      * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n      */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n
@Deprecated("Use 'Double.nanoseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6")\n      public fun nanoseconds(value: Double): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n\n      /** Returns a [Duration] representing the specified
[value] number of microseconds. */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n
@Deprecated("Use 'Int.microseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6")\n      public fun microseconds(value: Int): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n\n      /** Returns a [Duration] representing the specified
[value] number of microseconds. */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n
@Deprecated("Use 'Long.microseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6")\n      public fun microseconds(value: Long): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n\n      /**\n      * Returns a [Duration] representing the
specified [value] number of microseconds.\n      *\n      * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n      */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n
@Deprecated("Use 'Double.microseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6")\n      public fun microseconds(value: Double): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n\n      /** Returns a [Duration] representing the specified
[value] number of milliseconds. */\n      @SinceKotlin("1.5")\n
@ExperimentalTime\n      @Deprecated("Use 'Int.milliseconds' extension property from
Duration.Companion instead.", ReplaceWith("value.milliseconds",
"kotlin.time.Duration.Companion.milliseconds"))\n      @DeprecatedSinceKotlin(warningSince = "1.6")\n
public fun milliseconds(value: Int): Duration = value.toDuration(DurationUnit.MILLISECONDS)\n\n      /**
Returns a [Duration] representing the specified [value] number of milliseconds. */\n      @SinceKotlin("1.5")\n
@ExperimentalTime\n      @Deprecated("Use 'Long.milliseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6")\n      public fun milliseconds(value: Long): Duration =
value.toDuration(DurationUnit.MILLISECONDS)\n\n\n      /**\n      * Returns a [Duration] representing the
specified [value] number of milliseconds.\n      *\n      * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n      */\n      @SinceKotlin("1.5")\n      @ExperimentalTime\n
@Deprecated("Use 'Double.milliseconds' extension

```

```

property from Duration.Companion instead.\", ReplaceWith(\"value.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\")\n
public fun milliseconds(value: Double): Duration = value.toDuration(DurationUnit.MILLISECONDS)\n\n\n    /**
Returns a [Duration] representing the specified [value] number of seconds. *\n    @SinceKotlin(\"1.5\")\n
@ExperimentalTime\n    @Deprecated(\"Use 'Int.seconds' extension property from Duration.Companion
instead.\", ReplaceWith(\"value.seconds\", \"kotlin.time.Duration.Companion.seconds\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public fun seconds(value: Int): Duration =
value.toDuration(DurationUnit.SECONDS)\n\n\n    /** Returns a [Duration] representing the specified [value] number of seconds. *\n    @SinceKotlin(\"1.5\")\n
@ExperimentalTime\n    @Deprecated(\"Use 'Long.seconds' extension property from Duration.Companion
instead.\", ReplaceWith(\"value.seconds\", \"kotlin.time.Duration.Companion.seconds\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public fun seconds(value: Long): Duration =
value.toDuration(DurationUnit.SECONDS)\n\n\n    /**\n    * Returns a [Duration] representing the specified
[value] number of seconds.\n    *\n    * @throws IllegalArgumentException if the provided `Double` [value] is
`NaN`.\n    *\n    *\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use
'Double.seconds' extension property from Duration.Companion instead.\", ReplaceWith(\"value.seconds\",
\"kotlin.time.Duration.Companion.seconds\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public
fun seconds(value:
Double): Duration = value.toDuration(DurationUnit.SECONDS)\n\n\n    /** Returns a [Duration] representing
the specified [value] number of minutes. *\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n
@Deprecated(\"Use 'Int.minutes' extension property from Duration.Companion instead.\",
ReplaceWith(\"value.minutes\", \"kotlin.time.Duration.Companion.minutes\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public fun minutes(value: Int): Duration =
value.toDuration(DurationUnit.MINUTES)\n\n\n    /** Returns a [Duration] representing the specified [value]
number of minutes. *\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use
'Long.minutes' extension property from Duration.Companion instead.\", ReplaceWith(\"value.minutes\",
\"kotlin.time.Duration.Companion.minutes\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public
fun minutes(value: Long): Duration = value.toDuration(DurationUnit.MINUTES)\n\n\n    /**\n    * Returns a [Duration] representing the specified [value] number of minutes.\n    *\n    *
@throws IllegalArgumentException if the provided `Double` [value] is `NaN`.\n    *\n    *\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use 'Double.minutes' extension property
from Duration.Companion instead.\", ReplaceWith(\"value.minutes\",
\"kotlin.time.Duration.Companion.minutes\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public
fun minutes(value: Double): Duration = value.toDuration(DurationUnit.MINUTES)\n\n\n    /** Returns a
[Duration] representing the specified [value] number of hours. *\n    @SinceKotlin(\"1.5\")\n
@ExperimentalTime\n    @Deprecated(\"Use 'Int.hours' extension property from Duration.Companion instead.\",
ReplaceWith(\"value.hours\", \"kotlin.time.Duration.Companion.hours\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public fun hours(value:
Int): Duration = value.toDuration(DurationUnit.HOURS)\n\n\n    /** Returns a [Duration] representing the
specified [value] number of hours. *\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n
@Deprecated(\"Use 'Long.hours' extension property from Duration.Companion instead.\",
ReplaceWith(\"value.hours\", \"kotlin.time.Duration.Companion.hours\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\")\n    public fun hours(value: Long): Duration =
value.toDuration(DurationUnit.HOURS)\n\n\n    /**\n    * Returns a [Duration] representing the specified
[value] number of hours.\n    *\n    * @throws IllegalArgumentException if the provided `Double` [value] is
`NaN`.\n    *\n    *\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use 'Double.hours'
extension property from Duration.Companion instead.\", ReplaceWith(\"value.hours\",
\"kotlin.time.Duration.Companion.hours\"))\n    @DeprecatedSinceKotlin(warningSince

```

```

= `1.6`)\n    public fun hours(value: Double): Duration = value.toDuration(DurationUnit.HOURS)\n\n\n/** Returns a [Duration] representing the specified [value] number of days. *\n    @SinceKotlin(`1.5`)\n    @ExperimentalTime\n    @Deprecated("Use 'Int.days' extension property from Duration.Companion instead.",\n    ReplaceWith("value.days", "kotlin.time.Duration.Companion.days"))\n    @DeprecatedSinceKotlin(warningSince = `1.6`)\n    public fun days(value: Int): Duration =\n    value.toDuration(DurationUnit.DAYS)\n\n    /** Returns a [Duration] representing the specified [value] number\n    of days. *\n    @SinceKotlin(`1.5`)\n    @ExperimentalTime\n    @Deprecated("Use 'Long.days'\n    extension property from Duration.Companion instead.", ReplaceWith("value.days",\n    "kotlin.time.Duration.Companion.days"))\n    @DeprecatedSinceKotlin(warningSince = `1.6`)\n    public\n    fun days(value: Long): Duration = value.toDuration(DurationUnit.DAYS)\n\n\n    /**\n    * Returns a [Duration] representing the specified [value] number of days.\n    *\n    * @throws\n    IllegalArgumentException if the provided `Double` [value] is `NaN`.\n    *\n    @SinceKotlin(`1.5`)\n    @ExperimentalTime\n    @Deprecated("Use 'Double.days' extension property from Duration.Companion\n    instead.", ReplaceWith("value.days", "kotlin.time.Duration.Companion.days"))\n    @DeprecatedSinceKotlin(warningSince = `1.6`)\n    public fun days(value: Double): Duration =\n    value.toDuration(DurationUnit.DAYS)\n\n    /**\n    * Parses a string that represents a duration and returns the\n    parsed [Duration] value.\n    *\n    * The following formats are accepted:\n    *\n    * - ISO-8601\n    Duration format, e.g. `P1DT2H3M4.058S`, see [toIsoString] and [parseIsoString].\n    *\n    * - The format of string\n    returned by the default [Duration.toString] and `toString` in a specific unit,\n    *\n    * e.g. `10s`, `1h 30m` or `-(1h 30m)`.\n    *\n    * @throws IllegalArgumentException if the string\n    doesn't represent a duration in any of the supported formats.\n    *\n    @sample samples.time.Durations.parse\n    *\n    public fun parse(value: String): Duration = try {\n    parseDuration(value, strictIso = false)\n    }\n    catch (e: IllegalArgumentException) {\n    throw IllegalArgumentException("Invalid duration string format:\n    '$value'.", e)\n    }\n\n    /**\n    * Parses a string that represents a duration in ISO-8601 format and returns\n    the parsed [Duration] value.\n    *\n    * @throws IllegalArgumentException if the string doesn't represent a\n    duration in ISO-8601 format.\n    *\n    @sample samples.time.Durations.parseIsoString\n    *\n    public fun\n    parseIsoString(value: String): Duration = try {\n    parseDuration(value, strictIso = true)\n    }\n    catch (e:\n    IllegalArgumentException) {\n\n    throw IllegalArgumentException("Invalid ISO duration string format: '$value'.", e)\n    }\n\n    /**\n    * Parses a string that represents a duration and returns the parsed [Duration] value,\n    * or `null` if the string\n    doesn't represent a duration in any of the supported formats.\n    *\n    * The following formats are accepted:\n    *\n    * - ISO-8601 Duration format, e.g. `P1DT2H3M4.058S`, see [toIsoString] and [parseIsoString].\n    *\n    * - The format of string returned by the default [Duration.toString] and `toString`\n    in a specific unit,\n    *\n    * e.g.\n    `10s`, `1h 30m` or `-(1h 30m)`.\n    *\n    @sample samples.time.Durations.parse\n    *\n    public fun\n    parseOrNull(value: String): Duration? = try {\n    parseDuration(value, strictIso = false)\n    }\n    catch (e:\n    IllegalArgumentException) {\n    null\n    }\n\n    /**\n    * Parses a string that represents a duration in\n    ISO-8601\n    format and returns the parsed [Duration] value.\n    *\n    * or `null` if the string doesn't represent a duration in ISO-\n    8601 format.\n    *\n    @sample samples.time.Durations.parseIsoString\n    *\n    public fun\n    parseIsoStringOrNull(value: String): Duration? = try {\n    parseDuration(value, strictIso = true)\n    }\n    catch\n    (e: IllegalArgumentException) {\n    null\n    }\n\n    // arithmetic operators\n\n    /** Returns the\n    negative of this value. *\n    public operator fun unaryMinus(): Duration = durationOf(-value,\n    unitDiscriminator)\n\n    /**\n    * Returns a duration whose value is the sum of this and [other] duration values.\n    *\n    *\n    * @throws IllegalArgumentException if the operation results in an undefined value for the given arguments,\n    *\n    * e.g. when adding infinite durations of different sign.\n    *\n    public operator fun plus(other: Duration):\n    Duration {\n    when {\n    this.isInfinite() -> {\n\n    if (other.isFinite() || (this.rawValue xor other.rawValue >= 0))\n    return this\n    else\n    throw IllegalArgumentException("Summing infinite durations of different signs yields an undefined result.")\n    }\n    }

```



```

}
other.isInfinite() -> return other
}
return when {
this.unitDiscriminator ==
other.unitDiscriminator -> {
val result = this.value + other.value // never overflows long, but can
overflow long63
when {
isInNanos() ->
durationOfNanosNormalized(result)
else ->
durationOfMillisNormalized(result)
}
}
this.isInMillis() ->
addValuesMixedRanges(this.value, other.value)
else ->
addValuesMixedRanges(other.value, this.value)
}
}
private fun
addValuesMixedRanges(thisMillis:
Long, otherNanos: Long): Duration {
val otherMillis = nanosToMillis(otherNanos)
val resultMillis =
thisMillis + otherMillis
return if (resultMillis in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS)
{
val otherNanoRemainder = otherNanos - millisToNanos(otherMillis)
durationOfNanos(millisToNanos(resultMillis) + otherNanoRemainder)
} else {
durationOfMillis(resultMillis.coerceIn(-MAX_MILLIS, MAX_MILLIS))
}
}
/**
 * Returns a
duration whose value is the difference between this and [other] duration values.
 * @throws
IllegalArgumentOutOfRangeException if the operation results in an undefined value for the given arguments,
 * e.g. when
subtracting infinite durations of the same sign.
 */
public operator fun minus(other: Duration): Duration =
this + (-other)
/**
 * Returns a duration whose value is this duration value multiplied by the given [scale]
number.
 * @throws
IllegalArgumentOutOfRangeException if the operation results in an undefined value for the
given arguments,
 * e.g. when multiplying an infinite duration by zero.
 */
public operator fun
times(scale: Int): Duration {
if (isInfinite()) {
return when {
scale == 0 -> throw
IllegalArgumentOutOfRangeException("Multiplying infinite duration by zero yields an undefined result.")
scale > 0
-> this
else -> -this
}
}
if (scale == 0) return ZERO
val value = value
val result = value * scale
return if (isInNanos()) {
if (value in (MAX_NANOS /
Int.MIN_VALUE)..(-MAX_NANOS / Int.MIN_VALUE)) {
// can't overflow nanos range for any
scale
durationOfNanos(result)
} else {
if (result / scale == value) {
durationOfNanosNormalized(result)
} else {
val millis = nanosToMillis(value)
val remNanos = value -
millisToNanos(millis)
val resultMillis = millis * scale
val totalMillis = resultMillis +
nanosToMillis(remNanos * scale)
if (resultMillis / scale == millis && totalMillis xor resultMillis >=
0) {
durationOfMillis(totalMillis.coerceIn(-MAX_MILLIS..MAX_MILLIS))
} else
{
if (value.sign * scale.sign > 0) INFINITE else NEG_INFINITE
}
}
}
} else {
if (result / scale == value) {
durationOfMillis(result.coerceIn(-
MAX_MILLIS..MAX_MILLIS))
} else {
if (value.sign * scale.sign > 0) INFINITE else
NEG_INFINITE
}
}
}
}
/**
 * Returns a duration whose value is this duration value
multiplied by the given [scale]
number.
 * The operation may involve rounding when the result cannot be represented exactly with a
[Double] number.
 * @throws
IllegalArgumentOutOfRangeException if the operation results in an undefined value for
the given arguments,
 * e.g. when multiplying an infinite duration by zero.
 */
public operator fun
times(scale: Double): Duration {
val intScale = scale.roundToInt()
if (intScale.toDouble() == scale) {
return times(intScale)
}
val unit = storageUnit
val result = toDouble(unit) * scale
return result.toDuration(unit)
}
/**
 * Returns a duration whose value is this duration value divided by
the given [scale] number.
 * @throws
IllegalArgumentOutOfRangeException if the operation results in an undefined
value for the given arguments,
 * e.g. when dividing zero duration by zero.
 */
public operator fun
div(scale: Int): Duration {
if (scale
== 0) {
return when {
isPositive() -> INFINITE
isNegative() -> NEG_INFINITE
else -> throw
IllegalArgumentOutOfRangeException("Dividing zero duration by zero yields an undefined result.")
}
}
if (isInNanos()) {
return durationOfNanos(value / scale)
} else {
if
(isInfinite())
return this * scale.sign
val result = value / scale
if (result in -
MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {
val rem = millisToNanos(value - (result *

```



```

duration, and its absolute value is less than 60;\n    * - `minutes` represents the whole number of minutes in this
duration.\n    *\n    * Infinite durations are represented
as either [Long.MAX_VALUE] minutes, or [Long.MIN_VALUE] minutes (depending on the sign of infinity),\n
* and zeroes in the lower components.\n    */\n    public inline fun <T> toComponents(action: (minutes: Long,
seconds: Int, nanoseconds: Int) -> T): T {\n        contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE)
}\n        return action(inWholeMinutes, secondsComponent, nanosecondsComponent)\n    }\n\n    /**\n     * Splits
this duration into seconds, and nanoseconds and executes the given [action] with these components.\n     * The result
of [action] is returned as the result of this function.\n     *\n     * - `nanoseconds` represents the whole number of
nanoseconds in this duration, and its absolute value is less than 1_000_000_000;\n     * - `seconds` represents the
whole number of seconds in this duration.\n     *\n     * Infinite durations are represented as either
[Long.MAX_VALUE] seconds, or [Long.MIN_VALUE] seconds (depending on the sign of infinity),\n
* and zero nanoseconds.\n     */\n    public inline fun <T> toComponents(action: (seconds: Long, nanoseconds:
Int) -> T): T {\n        contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n        return
action(inWholeSeconds, nanosecondsComponent)\n    }\n\n    @PublishedApi\n    internal val hoursComponent:
Int\n    get() = if (isInfinite()) 0 else (inWholeHours % 24).toInt()\n\n    @PublishedApi\n    internal val
minutesComponent: Int\n    get() = if (isInfinite()) 0 else (inWholeMinutes % 60).toInt()\n\n    @PublishedApi\n
internal val secondsComponent: Int\n    get() = if (isInfinite()) 0 else (inWholeSeconds % 60).toInt()\n\n
@PublishedApi\n    internal val nanosecondsComponent: Int\n    get() = when {\n        isInfinite() -> 0\n
isInMillis() -> millisToNanos(value % 1_000).toInt()\n        else -> (value % 1_000_000_000).toInt()\n
}\n\n    // conversion to units\n    /**\n     * Returns the value of this duration
expressed as a [Double] number of the specified [unit].\n     *\n     * The operation may involve rounding when the
result cannot be represented exactly with a [Double] number.\n     *\n     * An infinite duration value is converted
either to [Double.POSITIVE_INFINITY] or [Double.NEGATIVE_INFINITY] depending on its sign.\n     */\n    public fun toDouble(unit: DurationUnit): Double {\n        return when (rawValue) {\n            INFINITE.rawValue ->
Double.POSITIVE_INFINITY\n            NEG_INFINITE.rawValue -> Double.NEGATIVE_INFINITY\n            else -> {\n                // TODO: whether it's ok to convert to Double before scaling\n
convertDurationUnit(value.toDouble(), storageUnit, unit)\n            }\n        }\n    }\n\n    /**\n     * Returns the value
of this duration expressed as a [Long] number of the specified [unit].\n     *\n     * If the result doesn't fit in the range
of [Long] type, it is coerced into that range:\n     * - [Long.MIN_VALUE] is returned
if it's less than `Long.MIN_VALUE`,\n     * - [Long.MAX_VALUE] is returned if it's greater than
`Long.MAX_VALUE`.\n     *\n     * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n     */\n    public fun toLong(unit: DurationUnit): Long {\n        return
when (rawValue) {\n            INFINITE.rawValue -> Long.MAX_VALUE\n            NEG_INFINITE.rawValue ->
Long.MIN_VALUE\n            else -> convertDurationUnit(value, storageUnit, unit)\n        }\n    }\n\n    /**\n     *
Returns the value of this duration expressed as an [Int] number of the specified [unit].\n     *\n     * If the result
doesn't fit in the range of [Int] type, it is coerced into that range:\n     * - [Int.MIN_VALUE] is returned if it's less
than `Int.MIN_VALUE`,\n     * - [Int.MAX_VALUE] is returned if it's greater than `Int.MAX_VALUE`.\n     *\n     * An infinite duration value is converted either to [Int.MAX_VALUE] or [Int.MIN_VALUE] depending on
its sign.\n     */\n    public fun toInt(unit: DurationUnit): Int =\n        toLong(unit).coerceIn(Int.MIN_VALUE.toInt(), Int.MAX_VALUE.toInt()).toInt()\n\n    /** The value of this
duration expressed as a [Double] number of days. *\n     @ExperimentalTime\n     @Deprecated("Use inWholeDays
property instead or convert toDouble(DAYS) if a double value is required.")\n     ReplaceWith("toDouble(DurationUnit.DAYS)")\n     public val inDays: Double get() =
toDouble(DurationUnit.DAYS)\n\n     /** The value of this duration expressed as a [Double] number of hours. *\n     @ExperimentalTime\n     @Deprecated("Use inWholeHours property instead or convert toDouble(HOURS) if a
double value is required.")\n     ReplaceWith("toDouble(DurationUnit.HOURS)")\n     public val inHours: Double
get() = toDouble(DurationUnit.HOURS)\n\n     /** The value of this duration expressed as a [Double] number of
minutes. *\n     @ExperimentalTime\n     @Deprecated("Use inWholeMinutes property instead or convert

```

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toDouble(MINUTES)
if a double value is required.", ReplaceWith("\toDouble(DurationUnit.MINUTES)\n\n public val inMinutes:
Double get() = toDouble(DurationUnit.MINUTES)\n\n /** The value of this duration expressed as a [Double]
number of seconds. *\n @ExperimentalTime\n @Deprecated("Use inWholeSeconds property instead or
convert toDouble(SECONDS) if a double value is required.",
ReplaceWith("\toDouble(DurationUnit.SECONDS)\n\n public val inSeconds: Double get() =
toDouble(DurationUnit.SECONDS)\n\n /** The value of this duration expressed as a [Double] number of
milliseconds. *\n @ExperimentalTime\n @Deprecated("Use inWholeMilliseconds property instead or convert
toDouble(MILLISECONDS) if a double value is required.",
ReplaceWith("\toDouble(DurationUnit.MILLISECONDS)\n\n public val inMilliseconds: Double get() =
toDouble(DurationUnit.MILLISECONDS)\n\n /** The value of this duration expressed as a [Double] number of
microseconds. *\n @ExperimentalTime\n
@Deprecated("Use inWholeMicroseconds property instead or convert toDouble(MICROSECONDS) if a double
value is required.", ReplaceWith("\toDouble(DurationUnit.MICROSECONDS)\n\n public val inMicroseconds:
Double get() = toDouble(DurationUnit.MICROSECONDS)\n\n /** The value of this duration expressed as a
[Double] number of nanoseconds. *\n @ExperimentalTime\n @Deprecated("Use inWholeNanoseconds
property instead or convert toDouble(NANOSECONDS) if a double value is required.",
ReplaceWith("\toDouble(DurationUnit.NANOSECONDS)\n\n public val inNanoseconds: Double get() =
toDouble(DurationUnit.NANOSECONDS)\n\n\n /**\n * The value of this duration expressed as a [Long]
number of days.\n * \n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n *\n public val inWholeDays: Long\n get() =
toLong(DurationUnit.DAYS)\n\n /**\n * The value of this duration expressed as a [Long]
number of hours.\n * \n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n *\n public val inWholeHours: Long\n get() =
toLong(DurationUnit.HOURS)\n\n /**\n * The value of this duration expressed as a [Long] number of
minutes.\n * \n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n *\n public val inWholeMinutes: Long\n get() =
toLong(DurationUnit.MINUTES)\n\n /**\n * The value of this duration expressed as a [Long] number of
seconds.\n * \n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n *\n public val inWholeSeconds: Long\n get() =
toLong(DurationUnit.SECONDS)\n\n /**\n * The value of this duration expressed as a [Long] number of
milliseconds.\n * \n * An infinite duration value is converted either
to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n *\n public val
inWholeMilliseconds: Long\n get() {\n return if (isInMillis() && isFinite()) value else
toLong(DurationUnit.MILLISECONDS)\n }\n\n /**\n * The value of this duration expressed as a [Long]
number of microseconds.\n * \n * If the result doesn't fit in the range of [Long] type, it is coerced into that
range:\n * - [Long.MIN_VALUE] is returned if it's less than `Long.MIN_VALUE`,\n * -
[Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n * \n * An infinite duration value
is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n *\n public val
inWholeMicroseconds: Long\n get() = toLong(DurationUnit.MICROSECONDS)\n\n /**\n * The value of
this duration expressed as a [Long] number of nanoseconds.\n * \n * If the result doesn't fit in the range of
[Long] type, it is coerced into that
range:\n * - [Long.MIN_VALUE] is returned if it's less than `Long.MIN_VALUE`,\n * -
[Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n * \n * An infinite duration value
is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n *\n public val
inWholeNanoseconds: Long\n get() {\n val value = value\n return when {\n isInNanos()
-> value\n value > Long.MAX_VALUE / NANOS_IN_MILLIS -> Long.MAX_VALUE\n value
< Long.MIN_VALUE / NANOS_IN_MILLIS -> Long.MIN_VALUE\n else -> millisToNanos(value)\n

```

```

} \n } \n // shortcuts \n /** \n * Returns the value of this duration expressed as a [Long] number of
nanoseconds. \n * \n * If the value doesn't fit in the range of [Long] type, it is coerced into that range, see the
conversion [Double.toLong] for details. \n * \n * The range of durations that can be expressed
as a `Long` number of nanoseconds is approximately \u00b1292 years. \n * \n @ExperimentalTime \n
@Deprecated("Use inWholeNanoseconds property instead.", ReplaceWith("this.inWholeNanoseconds")) \n
public fun toLongNanoseconds(): Long = inWholeNanoseconds \n /** \n * Returns the value of this duration
expressed as a [Long] number of milliseconds. \n * \n * The value is coerced to the range of [Long] type, if it
doesn't fit in that range, see the conversion [Double.toLong] for details. \n * \n * The range of durations that can
be expressed as a `Long` number of milliseconds is approximately \u00b1292 million years. \n * \n
@ExperimentalTime \n @Deprecated("Use inWholeMilliseconds property instead.",
ReplaceWith("this.inWholeMilliseconds")) \n public fun toLongMilliseconds(): Long = inWholeMilliseconds \n \n
/** \n * Returns a string representation of this duration value \n * expressed as a combination of numeric
components, each in its
own unit. \n * \n * Each component is a number followed by the unit abbreviated name: `d`, `h`, `m`, `s` \n *
`5h`, `1d 12h`, `1h 0m 30.340s` \n * The last component, usually seconds, can be a number with a fractional
part. \n * \n * If the duration is less than a second, it is represented as a single number \n * with one of sub-
second units: `ms` (milliseconds), `us` (microseconds), or `ns` (nanoseconds): \n * `140.884ms`, `500us`, `24ns` \n
* \n * A negative duration is prefixed with `-` sign and, if it consists of multiple components, surrounded with
parentheses: \n * `-12m` and `-(1h 30m)` \n * \n * Special cases: \n * - an infinite duration is formatted as
`"Infinity"` or `" -Infinity"` without a unit. \n * \n * It's recommended to use [toIsoString] that uses more strict
ISO-8601 format instead of this `toString` \n * when you want to convert a duration to a string in cases of
serialization, interchange, etc. \n * \n
* @sample samples.time.Durations.toStringDefault \n * \n override fun toString(): String = when (rawValue)
{ \n 0L -> "0s" \n INFINITE.rawValue -> "Infinity" \n NEG_INFINITE.rawValue -> "-Infinity" \n
else -> { \n val isNegative = isNegative() \n buildString { \n if (isNegative) append('-') \n
absoluteValue.toComponents { days, hours, minutes, seconds, nanoseconds -> \n val hasDays = days
!= 0L \n val hasHours = hours != 0L \n val hasMinutes = minutes != 0L \n val
hasSeconds = seconds != 0 || nanoseconds != 0L \n var components = 0 \n if (hasDays) { \n
append(days).append('d') \n components++ \n } \n if (hasHours ||
(hasDays && (hasMinutes || hasSeconds))) { \n if (components++ > 0) append(' ') \n
append(hours).append('h') \n } \n if (hasMinutes || (hasSeconds && (hasHours
|| hasDays))) { \n if (components++ > 0) append(' ') \n append(minutes).append('m') \n
} \n if (hasSeconds) { \n if (components++ > 0) append(' ') \n when
{ \n seconds != 0 || hasDays || hasHours || hasMinutes -> \n
appendFractional(seconds, nanoseconds, 9, "s", isoZeroes = false) \n nanoseconds >= 1_000_000 -
> \n appendFractional(nanoseconds / 1_000_000, nanoseconds % 1_000_000, 6, "ms",
isoZeroes = false) \n nanoseconds >= 1_000 -> \n appendFractional(nanoseconds
/ 1_000, nanoseconds % 1_000, 3, "us", isoZeroes = false) \n else -> \n
append(nanoseconds).append("ns") \n } \n } \n if
(isNegative && components > 1) insert(1, '(').append(')') \n } \n } \n } \n } \n private fun
StringBuilder.appendFractional(whole: Int, fractional: Int, fractionalSize: Int, unit: String, isoZeroes: Boolean) { \n
append(whole) \n if (fractional != 0) { \n append('.') \n val fracString =
fractional.toString().padStart(fractionalSize, '0') \n val nonZeroDigits = fracString.indexOfLast { it != '0' } +
1 \n when { \n !isoZeroes && nonZeroDigits < 3 -> appendRange(fracString, 0, nonZeroDigits) \n
else -> appendRange(fracString, 0, ((nonZeroDigits + 2) / 3) * 3) \n } \n } \n append(unit) \n
} \n /** \n * Returns a string representation of this duration value expressed in the given [unit] \n * and
formatted

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with the specified [decimals] number of digits after decimal point.\n
 * Special cases:\n
 * - an infinite duration is formatted as `\"Infinity\"` or `\"-Infinity\"` without a unit.\n
 * @param decimals the number of digits after decimal point to show. The value must be non-negative.\n
 * No more than 12 decimals will be shown, even if a larger number is requested.\n
 * @return the value of duration in the specified [unit] followed by that unit abbreviated name: `d`, `h`, `m`, `s`, `ms`, `us`, or `ns`.\n
 * @throws IllegalArgumentException if [decimals] is less than zero.\n
 * @sample samples.time.Durations.toStringDecimals\n
 * public fun toString(unit: DurationUnit, decimals: Int = 0): String {\n
    require(decimals >= 0) { \"decimals must be not negative, but was $decimals\" }\n
    val number = toDouble(unit)\n
    if (number.isInfinite()) return number.toString()\n
    return formatToExactDecimals(number, decimals.coerceAtMost(12)) + unit.shortName()\n
}\n\n
/**\n
 * Returns an ISO-8601 based string representation of this duration.\n
 * The returned value is presented in the format `PThHmMs.fS`, where `h`, `m`, `s` are the integer components of this duration (see [toComponents])\n
 * and `f` is a fractional part of second. Depending on the roundness of the value the fractional part can be formatted with either\n
 * 0, 3, 6, or 9 decimal digits.\n
 * The infinite duration is represented as `\"PT9999999999999999H\"` which is larger than any possible finite duration in Kotlin.\n
 * Negative durations are indicated with the sign `-` in the beginning of the returned string, for example, `\"-PT5M30S\"`.\n
 * @sample samples.time.Durations.toIsoString\n
 * public fun toIsoString(): String = buildString {\n
    if (isNegative()) append('-')\n
    append(\"PT\")\n
    this@Duration.absoluteValue.toComponents {\n
        hours, minutes, seconds, nanoseconds ->\n
        @Suppress(\"NAME_SHADOWING\")\n
        var hours = hours\n
        if (isInfinite()) {\n
            // use large enough value instead of Long.MAX_VALUE\n
            hours = 9_999_999_999_999\n
        }\n
        val hasHours = hours != 0L\n
        val hasSeconds = seconds != 0 || nanoseconds != 0\n
        val hasMinutes = minutes != 0 || (hasSeconds && hasHours)\n
        if (hasHours)\n
            append(hours).append('H')\n
        if (hasMinutes)\n
            append(minutes).append('M')\n
        if (hasSeconds || (!hasHours && !hasMinutes)) {\n
            appendFractional(seconds, nanoseconds, 9, \"S\", isoZeroes = true)\n
        }\n
    }\n
}\n\n
// constructing from number of units\n
// extension functions\n\n
/** Returns a [Duration] equal to this [Int] number of the specified [unit].\n
 * @SinceKotlin(\"1.6\")\n
 * @WasExperimental(ExperimentalTime::class)\n
 * public fun Int.toDuration(unit: DurationUnit): Duration {\n
    return if (unit <= DurationUnit.SECONDS) {\n
        durationOfNanos(convertDurationUnitOverflow(this.toLong(), unit, DurationUnit.NANOSECONDS))\n
    } else {\n
        toLong().toDuration(unit)\n
    }\n
}\n\n
/** Returns a [Duration] equal to this [Long] number of the specified [unit].\n
 * @SinceKotlin(\"1.6\")\n
 * @WasExperimental(ExperimentalTime::class)\n
 * public fun Long.toDuration(unit: DurationUnit): Duration {\n
    val maxNsInUnit = convertDurationUnitOverflow(MAX_NANOS, DurationUnit.NANOSECONDS, unit)\n
    if (this in -maxNsInUnit..maxNsInUnit) {\n
        return durationOfNanos(convertDurationUnitOverflow(this, unit, DurationUnit.NANOSECONDS))\n
    } else {\n
        val millis = convertDurationUnit(this, unit, DurationUnit.MILLISECONDS)\n
        return durationOfMillis(millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))\n
    }\n
}\n\n
/** Returns a [Duration] equal to this [Double] number of the specified [unit].\n
 * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or milliseconds.\n
 * @throws IllegalArgumentException if this `Double` value is `NaN`.\n
 * @SinceKotlin(\"1.6\")\n
 * @WasExperimental(ExperimentalTime::class)\n
 * public fun Double.toDuration(unit: DurationUnit): Duration {\n
    val valueInNs = convertDurationUnit(this, unit, DurationUnit.NANOSECONDS)\n
    require(!valueInNs.isNaN()) { \"Duration value cannot be NaN.\" }\n
    val nanos = valueInNs.roundToLong()\n
    return if (nanos in -MAX_NANOS..MAX_NANOS) {\n
        durationOfNanos(nanos)\n
    } else {\n
        val millis = convertDurationUnit(this, unit, DurationUnit.MILLISECONDS).roundToLong()\n
        durationOfMillisNormalized(millis)\n
    }\n
}\n\n
// constructing from number of units\n
// deprecated extension properties\n\n
/** Returns a [Duration] equal to this [Int] number of nanoseconds.\n
 * @SinceKotlin(\"1.3\")\n
 * @ExperimentalTime\n
 * @Deprecated(\"Use 'Int.nanoseconds' extension property from

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Duration.Companion instead.\", ReplaceWith(\"this.nanoseconds\",
\"kotlin.time.Duration.Companion.nanoseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n/** Returns a [Duration] equal to this
[Long] number of nanoseconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Long.nanoseconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.nanoseconds\",
\"kotlin.time.Duration.Companion.nanoseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n/**\n * Returns a [Duration] equal to this
[Double] number of nanoseconds.\n * \n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Double.nanoseconds' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.nanoseconds\",
\"kotlin.time.Duration.Companion.nanoseconds\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\")\npublic val Double.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n/** Returns a
[Duration] equal to this [Int] number of microseconds.
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Int.microseconds' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.microseconds\",
\"kotlin.time.Duration.Companion.microseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a [Duration] equal to this
[Long] number of microseconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Long.microseconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.microseconds\",
\"kotlin.time.Duration.Companion.microseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/**\n * Returns a [Duration] equal to this [Double] number of microseconds.\n * \n * @throws IllegalArgumentException
if this [Double] value is `NaN`.\n * \n*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Double.microseconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.microseconds\",
\"kotlin.time.Duration.Companion.microseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a [Duration] equal to
this [Int] number of milliseconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Int.milliseconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a [Duration] equal to this
[Long] number of milliseconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Long.milliseconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/**\n * Returns a [Duration] equal to this
[Double] number of milliseconds.\n * \n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Double.milliseconds' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Double.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a [Duration] equal to this
[Int] number of seconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Int.seconds'
extension
property from Duration.Companion instead.\", ReplaceWith(\"this.seconds\",
\"kotlin.time.Duration.Companion.seconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration] equal to this [Long] number of
seconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Long.seconds' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.seconds\",
\"kotlin.time.Duration.Companion.seconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/**\n * Returns a [Duration] equal to this [Double]

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number of seconds.\n *n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Double.seconds' extension property from
Duration.Companion instead.", ReplaceWith("this.seconds",
"kotlin.time.Duration.Companion.seconds"))\n@DeprecatedSinceKotlin(warningSince
= "1.5")\npublic val Double.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration]
equal to this [Int] number of minutes. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use
'Int.minutes' extension property from Duration.Companion instead.", ReplaceWith("this.minutes",
"kotlin.time.Duration.Companion.minutes"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/** Returns a [Duration] equal to this [Long] number of
minutes. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Long.minutes' extension property
from Duration.Companion instead.", ReplaceWith("this.minutes",
"kotlin.time.Duration.Companion.minutes"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Long.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/**\n * Returns a [Duration] equal to this [Double]
number of minutes.\n *n * @throws IllegalArgumentException
if this [Double] value is `NaN`.\n *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use
'Double.minutes' extension property from Duration.Companion instead.", ReplaceWith("this.minutes",
"kotlin.time.Duration.Companion.minutes"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Double.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/** Returns a [Duration] equal to this [Int]
number of hours. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Int.hours' extension
property from Duration.Companion instead.", ReplaceWith("this.hours",
"kotlin.time.Duration.Companion.hours"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Int.hours get() = toDuration(DurationUnit.HOURS)\n\n/** Returns a [Duration] equal to this [Long] number of
hours. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Long.hours' extension property from
Duration.Companion instead.", ReplaceWith("this.hours",
"kotlin.time.Duration.Companion.hours"))\n@DeprecatedSinceKotlin(warningSince
= "1.5")\npublic val Long.hours get() = toDuration(DurationUnit.HOURS)\n\n/**\n * Returns a [Duration] equal
to this [Double] number of hours.\n *n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Double.hours' extension property from
Duration.Companion instead.", ReplaceWith("this.hours",
"kotlin.time.Duration.Companion.hours"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Double.hours get() = toDuration(DurationUnit.HOURS)\n\n/** Returns a [Duration] equal to this [Int] number of
days. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Int.days' extension property from
Duration.Companion instead.", ReplaceWith("this.days",
"kotlin.time.Duration.Companion.days"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val Int.days
get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a [Duration] equal to this
[Long] number of days. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Long.days'
extension property from Duration.Companion instead.", ReplaceWith("this.days",
"kotlin.time.Duration.Companion.days"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Long.days get() = toDuration(DurationUnit.DAYS)\n\n/**\n * Returns a [Duration] equal to this [Double] number
of days.\n *n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Double.days' extension property from
Duration.Companion instead.", ReplaceWith("this.days",
"kotlin.time.Duration.Companion.days"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic val
Double.days get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a duration whose value is the specified
[duration] value multiplied by this number.
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\n@kotlin.internal.InlineOnly\npublic
inline

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operator fun Int.times(duration: Duration): Duration = duration * this\n\n * Returns a duration whose value is the specified [duration] value multiplied by this number.\n * The operation may involve rounding when the result cannot be represented exactly with a [Double] number.\n * @throws IllegalArgumentException if the operation results in a `NaN` value.\n

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*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\n@kotlin.internal.InlineOnly\npublic inline operator fun Double.times(duration: Duration): Duration = duration * this\n\n\nprivate fun parseDuration(value: String, strictIso: Boolean): Duration {\n    var length = value.length\n    if (length == 0) throw IllegalArgumentException("The string is empty")\n    var index = 0\n    var result = Duration.ZERO\n    val infinityString = "Infinity"\n    when (value[index]) {\n        '+', '-' -> index++\n    }\n    val hasSign = index > 0\n    val isNegative = hasSign && value.startsWith('-')\n    when {\n        length <= index -> throw IllegalArgumentException("No components")\n        value[index] == 'P' -> {\n            if (++index == length) throw IllegalArgumentException()\n            val nonDigitSymbols = "+-."
            var isTimeComponent = false\n            var prevUnit: DurationUnit? = null\n            while (index < length) {\n                if (value[index] == 'T') {\n                    if (isTimeComponent || ++index == length) throw\n                    IllegalArgumentException()\n                    isTimeComponent = true\n                    continue\n                }\n                val component = value.substringWhile(index) { it in '0'..'9' || it in nonDigitSymbols }\n                if (component.isEmpty()) throw IllegalArgumentException()\n                index += component.length\n                val unitChar = value.getOrElse(index) { throw IllegalArgumentException("Missing unit for value $component") }\n                index++\n                val unit =\n                = durationUnitByIsoChar(unitChar, isTimeComponent)\n                if (prevUnit != null && prevUnit <= unit)\n                throw IllegalArgumentException("Unexpected order of duration components")\n                prevUnit = unit\n                val dotIndex = component.indexOf('.')\n                if (unit == DurationUnit.SECONDS && dotIndex > 0) {\n                    val whole = component.substring(0, dotIndex)\n                    result +=\n                    parseOverLongIsoComponent(whole).toDuration(unit)\n                    result +=\n                    component.substring(dotIndex).toDouble().toDuration(unit)\n                } else {\n                    result +=\n                    parseOverLongIsoComponent(component).toDuration(unit)\n                }\n            }\n            strictIso -> {\n                throw IllegalArgumentException()\n                value.regionMatches(index, infinityString, 0, length = maxOf(length -\n                index, infinityString.length), ignoreCase = true) -> {\n                    result = Duration.INFINITE\n                }\n            }\n            else -> {\n                // parse default string format\n                var prevUnit: DurationUnit? = null\n                var afterFirst =\n                false\n                var allowSpaces = !hasSign\n                if (hasSign && value[index] == '(' && value.last() == ')') {\n                    allowSpaces = true\n                    if (++index == --length) throw IllegalArgumentException("No components")\n                }\n                while (index < length) {\n                    if (afterFirst && allowSpaces) {\n                        index =\n                        value.skipWhile(index) { it == ' ' }\n                    }\n                    afterFirst = true\n                    val component =\n                    value.substringWhile(index) { it in '0'..'9' || it == '.' }\n                    if (component.isEmpty()) throw\n                    IllegalArgumentException()\n                    index += component.length\n                    val unitName =\n                    value.substringWhile(index) { it in 'a'..'z' }\n                    index += unitName.length\n                    val unit =\n                    durationUnitByShortName(unitName)\n                    if (prevUnit != null && prevUnit <= unit) throw IllegalArgumentException("Unexpected order of\n                    duration components")\n                    prevUnit = unit\n                    val dotIndex = component.indexOf('.')\n                    if (dotIndex > 0) {\n                        val whole = component.substring(0, dotIndex)\n                        result +=\n                        whole.toLong().toDuration(unit)\n                        result +=\n                        component.substring(dotIndex).toDouble().toDuration(unit)\n                    }\n                    if (index < length) throw\n                    IllegalArgumentException("Fractional component must be last")\n                } else {\n                    result +=\n                    component.toLong().toDuration(unit)\n                }\n            }\n        }\n    }\n    return if (isNegative) -result else\n    result\n}\n\n\nprivate fun parseOverLongIsoComponent(value: String): Long {\n    val length = value.length\n    var\n    startIndex = 0\n    if (length > 0 && value[0] in "+-") startIndex++\n    if ((length - startIndex) > 16 &&\n    (startIndex..value.lastIndex).all

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{ value[it] in '0'..'9' }) {\n    // all chars are digits, but more than ceiling(log10(MAX_MILLIS / 1000)) of them\n
    return if (value[0] == '-') Long.MIN_VALUE else Long.MAX_VALUE\n } \n // TODO: replace with just
toLong after min JDK becomes 8\n    return if (value.startsWith("+")) value.drop(1).toLong() else
value.toLong()\n}\n\nprivate inline fun String.substringWhile(startIndex: Int, predicate: (Char) -> Boolean):
String =\n    substring(startIndex, skipWhile(startIndex, predicate))\n\nprivate inline fun
String.skipWhile(startIndex: Int, predicate: (Char) -> Boolean): Int {\n    var i = startIndex\n    while (i < length &&
predicate(this[i])) i++\n    return i}\n}\n\n\n// The ranges are chosen so that they are:\n// - symmetric relative to
zero: this greatly simplifies operations with sign, e.g. unaryMinus and minus.\n// - non-overlapping, but adjacent:
the first value that doesn't fit in nanos range, can be exactly represented
in millis.\n\ninternal const val NANOS_IN_MILLIS = 1_000_000\n// maximum number duration can store in
nanosecond range\n\ninternal const val MAX_NANOS = Long.MAX_VALUE / 2 / NANOS_IN_MILLIS *
NANOS_IN_MILLIS - 1 // ends in ..._999_999\n// maximum number duration can store in millisecond range, also
encodes an infinite value\n\ninternal const val MAX_MILLIS = Long.MAX_VALUE / 2\n// MAX_NANOS
expressed in milliseconds\n\nprivate const val MAX_NANOS_IN_MILLIS = MAX_NANOS /
NANOS_IN_MILLIS\n\nprivate fun nanosToMillis(nanos: Long): Long = nanos / NANOS_IN_MILLIS\n\nprivate
fun millisToNanos(millis: Long): Long = millis * NANOS_IN_MILLIS\n\nprivate fun
durationOfNanos(normalNanos: Long) = Duration(normalNanos shl 1)\n\nprivate fun durationOfMillis(normalMillis:
Long) = Duration((normalMillis shl 1) + 1)\n\nprivate fun durationOf(normalValue: Long, unitDiscriminator: Int) =
Duration((normalValue shl 1) + unitDiscriminator)\n\nprivate fun durationOfNanosNormalized(nanos: Long) =\n    if
(nanos in -MAX_NANOS..MAX_NANOS)
    {\n        durationOfNanos(nanos)\n    } else {\n        durationOfMillis(nanosToMillis(nanos))\n    }\n\nprivate fun
durationOfMillisNormalized(millis: Long) =\n    if (millis in -
MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n        durationOfNanos(millisToNanos(millis))\n    }
else {\n        durationOfMillis(millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))\n    }\n\n\ninternal expect val
durationAssertionsEnabled: Boolean\n\ninternal expect fun formatToExactDecimals(value: Double, decimals: Int):
String\n\ninternal expect fun formatUpToDecimals(value: Double, decimals: Int): String", "/*\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName("\\UnsignedKt")\n\npackage kotlin\n\n\n@PublishedApi\n\ninternal fun uintCompare(v1:
Int, v2: Int): Int = (v1 xor Int.MIN_VALUE).compareTo(v2 xor Int.MIN_VALUE)\n\n@PublishedApi\n\ninternal
fun ulongCompare(v1: Long, v2: Long): Int = (v1 xor Long.MIN_VALUE).compareTo(v2 xor
Long.MIN_VALUE)\n\n\n@PublishedApi\n\ninternal fun uintDivide(v1: UInt, v2: UInt): UInt = (v1.toLong() /
v2.toLong()).toUInt()\n\n@PublishedApi\n\ninternal fun uintRemainder(v1: UInt, v2: UInt): UInt = (v1.toLong() %
v2.toLong()).toUInt()\n\n\n// Division and remainder are based on Guava's UnsignedLongs implementation\n\n\nCopyright 2011 The Guava Authors\n\n\n@PublishedApi\n\ninternal fun ulongDivide(v1: ULong, v2: ULong): ULong
{\n    val dividend = v1.toLong()\n    val divisor = v2.toLong()\n    if (divisor < 0) { // i.e., divisor >= 2^63:\n
return if (v1 < v2) ULong(0) else ULong(1)\n    }\n\n    // Optimization - use signed division if both dividend and
divisor < 2^63\n    if (dividend >= 0) {\n        return ULong(dividend / divisor)\n    }\n\n    // Otherwise, approximate
the quotient, check, and correct if necessary.\n    val quotient = ((dividend ushr 1) / divisor) shl 1\n    val rem
= dividend - quotient * divisor\n    return ULong(quotient + if (ULong(rem) >= ULong(divisor)) 1 else
0)\n\n}\n\n\n@PublishedApi\n\ninternal fun ulongRemainder(v1: ULong, v2: ULong): ULong {\n    val dividend =
v1.toLong()\n    val divisor = v2.toLong()\n    if (divisor < 0) { // i.e., divisor >= 2^63:\n        return if (v1 < v2) {\n
v1 // dividend < divisor\n        } else {\n            v1 - v2 // dividend >= divisor\n        }\n    }\n\n    // Optimization
- use signed modulus if both dividend and divisor < 2^63\n    if (dividend >= 0) {\n        return ULong(dividend %
divisor)\n    }\n\n    // Otherwise, approximate the quotient, check, and correct if necessary.\n    val quotient =
((dividend ushr 1) / divisor) shl 1\n    val rem = dividend - quotient * divisor\n    return ULong(rem - if (ULong(rem)
>= ULong(divisor)) divisor else 0)\n\n}\n\n\n@PublishedApi\n\ninternal fun doubleToUInt(v: Double): UInt = when {\n
v.isNaN() -> 0u\n    v <= UInt.MIN_VALUE.toDouble() -> UInt.MIN_VALUE\n

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    v >= UInt.MAX_VALUE.toDouble() -> UInt.MAX_VALUE\n    v <= Int.MAX_VALUE -> v.toInt().toUInt()\n
else -> (v - Int.MAX_VALUE).toInt().toUInt() + Int.MAX_VALUE.toUInt()    // Int.MAX_VALUE < v <
UInt.MAX_VALUE\n}\n\n@PublishedApi\ninternal fun doubleToULong(v: Double): ULong = when {\n
v.isNaN() -> 0u\n    v <= ULong.MIN_VALUE.toDouble() -> ULong.MIN_VALUE\n    v >=
ULong.MAX_VALUE.toDouble() -> ULong.MAX_VALUE\n    v < Long.MAX_VALUE ->
v.toLong().toULong()\n\n    // Real values from Long.MAX_VALUE to (Long.MAX_VALUE + 1) are not
representable in Double, so don't handle them.\n    else -> (v - 9223372036854775808.0).toLong().toULong() +
9223372036854775808uL    // Long.MAX_VALUE + 1 < v <
ULong.MAX_VALUE\n}\n\n\n@PublishedApi\ninternal fun uintToDouble(v: Int): Double = (v and
Int.MAX_VALUE).toDouble() + (v ushr 31 shl 30).toDouble() * 2\n\n@PublishedApi\ninternal fun
ulongToDouble(v: Long): Double = (v ushr 11).toDouble() * 2048 + (v and 2047)\n}\n\ninternal fun
ulongToString(v: Long): String = ulongToString(v, 10)\n\ninternal fun ulongToString(v: Long, base: Int): String
{\n    if (v >= 0) return v.toString(base)\n    var quotient = ((v ushr 1) / base) shl 1\n    var rem = v - quotient *
base\n    if (rem >= base) {\n        rem -= base\n        quotient += 1\n    }\n    return quotient.toString(base) +
rem.toString(base)\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/**\n * Given an [iterator] function constructs an [Iterable] instance that returns values through
the [Iterator]\n * provided by that function.\n * @sample samples.collections.Iterables.Building.iterable\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable(crossinline iterator: ()
-> Iterator<T>): Iterable<T> = object : Iterable<T> {\n    override fun iterator(): Iterator<T> = iterator()\n}\n\n/**\n * A wrapper over another [Iterable] (or any other object that can produce an [Iterator]) that returns\n * an indexing
iterator.\n */\n\ninternal class IndexingIterable<out T>(private val iteratorFactory: () -> Iterator<T>) :
Iterable<IndexedValue<T>> {\n    override fun iterator(): Iterator<IndexedValue<T>> =
IndexingIterator(iteratorFactory())\n}\n\n\n/**\n * Returns the size of this iterable if it is known, or `null`
otherwise.\n */\n\n@PublishedApi\ninternal fun <T> Iterable<T>.collectionSizeOrNull(): Int? = if (this is
Collection<*>) this.size else null\n\n\n/**\n * Returns the size of this iterable if it is known, or the specified [default]
value otherwise.\n */\n\n@PublishedApi\ninternal fun <T> Iterable<T>.collectionSizeOrDefault(default: Int): Int = if
(this is Collection<*>) this.size else default\n\n\n/**\n * Returns a single list of all elements from all collections
in the given collection.\n * @sample samples.collections.Iterables.Operations.flattenIterable\n */\n\npublic fun <T>
Iterable<Iterable<T>>.flatten(): List<T> {\n    val result = ArrayList<T>()\n    for (element in this) {\n
result.addAll(element)\n    }\n    return result\n}\n\n\n/**\n * Returns a pair of lists, where\n * *first* list is built from
the first values of each pair from this collection,\n * *second* list is built from the second values of each pair from
this collection.\n * @sample samples.collections.Iterables.Operations.unzipIterable\n */\n\npublic fun <T, R>
Iterable<Pair<T, R>>.unzip(): Pair<List<T>, List<R>> {\n    val expectedSize = collectionSizeOrDefault(10)\n
val listT = ArrayList<T>(expectedSize)\n    val listR = ArrayList<R>(expectedSize)\n    for (pair in this) {\n
listT.add(pair.first)\n    listR.add(pair.second)\n    }\n    return listT to listR\n}\n\n"/*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SequencesKt")\n\npackage
kotlin.sequences\n\nimport kotlin.random.Random\n\n\n/**\n * Given an [iterator] function constructs a [Sequence]
that returns values through the [Iterator]\n * provided by that function.\n * The values are evaluated lazily, and the
sequence is potentially infinite.\n */\n\n@sample samples.collections.Sequences.Building.sequenceFromIterator\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence(crossinline iterator: () -> Iterator<T>):
Sequence<T> = object : Sequence<T> {\n    override fun iterator(): Iterator<T> = iterator()\n}\n\n\n/**\n * Creates a
sequence that returns all elements from this iterator. The sequence is constrained to be iterated only once.\n */\n\n
@sample samples.collections.Sequences.Building.sequenceFromIterator\n */\n\npublic fun <T>

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Iterator<T>.asSequence():

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Sequence<T> = Sequence { this }.constrainOnce()\n\n/**\n * Creates a sequence that returns the specified values.\n *\n * @sample samples.collections.Sequences.Building.sequenceOfValues\n */\npublic fun <T> sequenceOf(vararg\n elements: T): Sequence<T> = if (elements.isEmpty()) emptySequence() else elements.asSequence()\n\n/**\n * Returns an empty sequence.\n */\npublic fun <T> emptySequence(): Sequence<T> = EmptySequence\n\nprivate\n object EmptySequence : Sequence<Nothing>, DropTakeSequence<Nothing> {\n     override fun iterator():\n Iterator<Nothing> = EmptyIterator\n     override fun drop(n: Int) = EmptySequence\n     override fun take(n: Int) =\n EmptySequence\n }\n\n/**\n * Returns this sequence if it's not `null` and the empty sequence otherwise.\n *\n * @sample samples.collections.Sequences.Usage.sequenceOrEmpty\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>?.orEmpty():\n Sequence<T> = this ?: emptySequence()\n\n/**\n * Returns a sequence\n that iterates through the elements either of this sequence\n * or, if this sequence turns out to be empty, of the\n sequence returned by [defaultValue] function.\n *\n * @sample\n samples.collections.Sequences.Usage.sequenceIfEmpty\n */\n\n@SinceKotlin("1.3")\npublic fun <T>\n Sequence<T>.ifEmpty(defaultValue: () -> Sequence<T>): Sequence<T> = sequence {\n     val iterator =\n this@ifEmpty.iterator()\n     if (iterator.hasNext()) {\n         yieldAll(iterator)\n     } else {\n         yieldAll(defaultValue())\n     }\n }\n\n/**\n * Returns a sequence of all elements from all sequences in this\n sequence.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample\n samples.collections.Sequences.Transformations.flattenSequenceOfSequences\n */\n\npublic fun <T>\n Sequence<Sequence<T>>.flatten(): Sequence<T> = flatten { it.iterator() }\n\n/**\n * Returns a sequence of all\n elements from all iterables in this sequence.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample\n samples.collections.Sequences.Transformations.flattenSequenceOfLists\n */\n\n@kotlin.jvm.JvmName("flattenSequenceOfIterable")\npublic fun <T> Sequence<Iterable<T>>.flatten():\n Sequence<T> = flatten { it.iterator() }\n\nprivate fun <T, R> Sequence<T>.flatten(iterator: (T) -> Iterator<R>):\n Sequence<R> {\n     if (this is TransformingSequence<*, *>) {\n         return (this as TransformingSequence<*,\n T>).flatten(iterator)\n     }\n     return FlatteningSequence(this, { it }, iterator)\n }\n\n/**\n * Returns a pair of lists,\n where\n * *first* list is built from the first values of each pair from this sequence,\n * *second* list is built from the\n second values of each pair from this sequence.\n *\n * The operation is _terminal_.\n *\n * @sample\n samples.collections.Sequences.Transformations.unzip\n */\n\npublic fun <T, R> Sequence<Pair<T, R>>.unzip():\n Pair<List<T>, List<R>> {\n     val listT = ArrayList<T>()\n     val listR = ArrayList<R>()\n     for (pair in this) {\n         listT.add(pair.first)\n         listR.add(pair.second)\n     }\n     return listT to listR\n }\n\n/**\n * Returns a sequence that yields elements of this sequence randomly\n shuffled.\n *\n * Note that every iteration of the sequence returns elements in a different order.\n *\n * The operation\n is _intermediate_ and _stateful_.\n */\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled():\n Sequence<T> = shuffled(Random)\n\n/**\n * Returns a sequence that yields elements of this sequence randomly\n shuffled\n * using the specified [random] instance as the source of randomness.\n *\n * Note that every iteration of\n the sequence returns elements in a different order.\n *\n * The operation is _intermediate_ and _stateful_.\n */\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled(random: Random): Sequence<T> =\n sequence<T> {\n     val buffer = toMutableList()\n     while (buffer.isNotEmpty()) {\n         val j =\n random.nextInt(buffer.size)\n         val last = buffer.removeLast()\n         val value = if (j < buffer.size) buffer.set(j,\n last) else last\n         yield(value)\n     }\n }\n\n/**\n * A sequence that returns the values from the underlying\n [sequence] that either match or do not match\n * the specified [predicate].\n *\n * @param sendWhen If `true`,\n values for which the predicate returns `true` are returned. Otherwise,\n * values for which the predicate returns\n `false` are returned\n */\n\ninternal class FilteringSequence<T>(\n     private val sequence: Sequence<T>,\n     private\n val sendWhen: Boolean = true,\n     private val predicate: (T) -> Boolean\n ) : Sequence<T> {\n     override fun\n iterator(): Iterator<T> = object : Iterator<T> {\n         val iterator = sequence.iterator()\n         var nextState: Int = -1 //\n -1 for unknown, 0 for done, 1 for continue\n         var nextItem: T? = null\n         private fun calcNext() {\n             while (iterator.hasNext()) {\n                 val item = iterator.next()\n                 if (predicate(item) == sendWhen) {\n
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        nextItem = item\n
        nextState = 1\n        return\n        }\n        }\n        nextState = 0\n        }\n        override
fun next(): T {\n        if (nextState == -1)\n        calcNext()\n        if (nextState == 0)\n        throw
NoSuchElementException()\n        val result = nextItem\n        nextItem = null\n        nextState = -1\n
@Suppress("UNCHECKED_CAST")\n        return result as T\n        }\n        override fun hasNext(): Boolean
{\n        if (nextState == -1)\n        calcNext()\n        return nextState == 1\n        }\n        }\n        }\n        A
sequence which returns the results of applying the given [transformer] function to the values\n * in the underlying
[sequence].\n */\n\ninternal class TransformingSequence<T, R>\nconstructor(private val sequence: Sequence<T>,
private val transformer: (T) -> R) : Sequence<R> {\n        override fun iterator(): Iterator<R> = object : Iterator<R>
{\n        val iterator = sequence.iterator()\n        override fun next(): R {\n        return transformer(iterator.next())\n
}\n        }\n        override fun hasNext(): Boolean {\n        return iterator.hasNext()\n        }\n        }\n        internal fun
<E> flatten(iterator: (R) -> Iterator<E>): Sequence<E> {\n        return FlatteningSequence<T, R, E>(sequence,
transformer, iterator)\n        }\n        }\n        }\n        A sequence which returns the results of applying the given [transformer]
function to the values\n * in the underlying [sequence], where the transformer function takes the index of the value
in the underlying\n * sequence along with the value itself.\n */\n\ninternal class TransformingIndexedSequence<T,
R>\nconstructor(private val sequence: Sequence<T>, private val transformer: (Int, T) -> R) : Sequence<R> {\n
override fun iterator(): Iterator<R> = object : Iterator<R> {\n        val iterator = sequence.iterator()\n        var index =
0\n        override fun next(): R {\n
return transformer(checkIndexOverflow(index++), iterator.next())\n        }\n        }\n        override fun hasNext():
Boolean {\n        return iterator.hasNext()\n        }\n        }\n        }\n        A sequence which combines values from
the underlying [sequence] with their indices and returns them as\n * [IndexedValue] objects.\n */\n\ninternal class
IndexingSequence<T>\nconstructor(private val sequence: Sequence<T>) : Sequence<IndexedValue<T>> {\n
override fun iterator(): Iterator<IndexedValue<T>> = object : Iterator<IndexedValue<T>> {\n        val iterator =
sequence.iterator()\n        var index = 0\n        override fun next(): IndexedValue<T> {\n        return
IndexedValue(checkIndexOverflow(index++), iterator.next())\n        }\n        }\n        override fun hasNext(): Boolean {\n
return iterator.hasNext()\n        }\n        }\n        }\n        A sequence which takes the values from two parallel
underlying sequences, passes them to the given\n * [transform] function and returns
the values returned by that function. The sequence stops returning\n * values as soon as one of the underlying
sequences stops returning values.\n */\n\ninternal class MergingSequence<T1, T2, V>\nconstructor(\n        private val
sequence1: Sequence<T1>,\n        private val sequence2: Sequence<T2>,\n        private val transform: (T1, T2) -> V\n) :
Sequence<V> {\n        override fun iterator(): Iterator<V> = object : Iterator<V> {\n        val iterator1 =
sequence1.iterator()\n        val iterator2 = sequence2.iterator()\n        override fun next(): V {\n        return
transform(iterator1.next(), iterator2.next())\n        }\n        }\n        override fun hasNext(): Boolean {\n        return
iterator1.hasNext() && iterator2.hasNext()\n        }\n        }\n        }\n        internal class FlatteningSequence<T, R,
E>\nconstructor(\n        private val sequence: Sequence<T>,\n        private val transformer: (T) -> R,\n        private val
iterator: (R) -> Iterator<E>\n) : Sequence<E> {\n        override fun iterator(): Iterator<E>
= object : Iterator<E> {\n        val iterator = sequence.iterator()\n        var itemIterator: Iterator<E>? = null\n
override fun next(): E {\n        if (!ensureItemIterator())\n        throw NoSuchElementException()\n
return itemIterator!!.next()\n        }\n        }\n        override fun hasNext(): Boolean {\n        return ensureItemIterator()\n
}\n        }\n        private fun ensureItemIterator(): Boolean {\n        if (itemIterator?.hasNext() == false)\n
itemIterator = null\n        while (itemIterator == null) {\n        if (!iterator.hasNext()) {\n        return
false\n        }\n        } else {\n        val element = iterator.next()\n        val nextItemIterator =
iterator(transformer(element))\n        if (nextItemIterator.hasNext()) {\n        itemIterator =
nextItemIterator\n        return true\n        }\n        }\n        }\n        }\n        return true\n        }\n        }\n        }\n        internal fun <T, C, R> flatMapIndexed(source:
Sequence<T>, transform: (Int, T) -> C, iterator: (C) -> Iterator<R>): Sequence<R> =\n        sequence {\n        var
index = 0\n        for (element in source) {\n        val result = transform(checkIndexOverflow(index++), element)\n
yieldAll(iterator(result))\n        }\n        }\n        }\n        A sequence that supports drop(n) and take(n) operations\n

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*internal interface DropTakeSequence<T> : Sequence<T> {
    fun drop(n: Int): Sequence<T>
    fun take(n: Int): Sequence<T>
}
/** A sequence that skips [startIndex] values from the underlying [sequence] and stops returning values right before [endIndex], i.e. stops at `endIndex - 1`
*internal class SubSequence<T>(
    private val sequence: Sequence<T>,
    private val startIndex: Int,
    private val endIndex: Int
) : Sequence<T>, DropTakeSequence<T> {
    init {
        require(startIndex >= 0) { "startIndex should be non-negative, but is $startIndex" }
        require(endIndex >= 0) { "endIndex should be non-negative, but is $endIndex" }
        require(endIndex >= startIndex) { "endIndex should be not less than startIndex, but was $endIndex < $startIndex" }
    }
    private val count: Int get() = endIndex - startIndex
    override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else SubSequence(sequence, startIndex + n, endIndex)
    override fun take(n: Int): Sequence<T> = if (n >= count) this else SubSequence(sequence, startIndex, startIndex + n)
    override fun iterator(): Iterator<T> {
        val iterator = sequence.iterator()
        var position = 0
        // Shouldn't be called from constructor to avoid premature iteration
        private fun drop() {
            while (position < startIndex && iterator.hasNext()) {
                iterator.next()
                position++
            }
        }
        override fun hasNext(): Boolean {
            drop()
            return (position < endIndex) && iterator.hasNext()
        }
        override fun next(): T {
            drop()
            if (position >= endIndex) {
                throw NoSuchElementException()
            }
            position++
            return iterator.next()
        }
    }
}
/** A sequence that returns at most [count] values from the underlying [sequence], and stops returning values as soon as that count is reached.
*internal class TakeSequence<T>(
    private val sequence: Sequence<T>,
    private val count: Int
) : Sequence<T>, DropTakeSequence<T> {
    init {
        require(count >= 0) { "count must be non-negative, but was $count." }
    }
    override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else SubSequence(sequence, n, count)
    override fun take(n: Int): Sequence<T> = if (n >= count) this else TakeSequence(sequence, n)
    override fun iterator(): Iterator<T> = object : Iterator<T> {
        var left = count
        val iterator = sequence.iterator()
        override fun next(): T {
            if (left == 0) {
                throw NoSuchElementException()
            }
            left--
            return iterator.next()
        }
        override fun hasNext(): Boolean {
            return left > 0 && iterator.hasNext()
        }
    }
}
/** A sequence that returns values from the underlying [sequence] while the [predicate] function returns `true`, and stops returning values once the function returns `false` for the next element.
*internal class TakeWhileSequence<T> {
    constructor(
        private val sequence: Sequence<T>,
        private val predicate: (T) -> Boolean
    ) : Sequence<T> {
        override fun iterator(): Iterator<T> = object : Iterator<T> {
            val iterator = sequence.iterator()
            var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue
            var nextItem: T? = null

            private fun calcNext() {
                if (iterator.hasNext()) {
                    val item = iterator.next()
                    if (predicate(item)) {
                        nextState = 1
                        nextItem = item
                        return
                    }
                    nextState = 0
                }
            }
            override fun next(): T {
                if (nextState == -1) {
                    calcNext() // will change nextState
                    if (nextState == 0) {
                        throw NoSuchElementException()
                    }
                    @Suppress("UNCHECKED_CAST")
                    val result = nextItem as T
                    // Clean next to avoid keeping reference on yielded instance
                    nextItem = null
                    nextState = -1
                    return result
                }
            }
            override fun hasNext(): Boolean {
                if (nextState == -1) {
                    calcNext() // will change nextState
                }
                return nextState == 1
            }
        }
    }
}
/** A sequence that skips the specified number of values from the underlying [sequence] and returns all values after that.
*internal class DropSequence<T>(
    private val sequence: Sequence<T>,
    private val count: Int
) : Sequence<T>, DropTakeSequence<T> {
    init {
        require(count >= 0) { "count must be non-negative, but was $count." }
    }
    override fun drop(n: Int): Sequence<T> = (count + n).let { n1 -> if (n1 < 0) DropSequence(this, n) else DropSequence(sequence, n1) }
    override fun take(n: Int): Sequence<T> = (count + n).let { n1 -> if (n1 < 0) TakeSequence(this, n) else SubSequence(sequence, count, n1) }
    override fun iterator(): Iterator<T> = object : Iterator<T> {
        val iterator = sequence.iterator()
        var left = count
        // Shouldn't be called from constructor to avoid premature iteration
        private fun drop() {
            while (left >

```

```

0 && iterator.hasNext() {\n        iterator.next()\n        left--\n    }\n    }\n    override fun next(): T {\n        drop()\n        return iterator.next()\n    }\n    override fun hasNext(): Boolean {\n        drop()\n        return iterator.hasNext()\n    }\n}\n\n**\n * A sequence that skips the values from the underlying [sequence] while the given [predicate] returns `true` and returns\n * all values after that.\n *\ninternal class DropWhileSequence<T>\nconstructor(\n    private val sequence: Sequence<T>,\n    private val predicate: (T) -> Boolean\n) : Sequence<T> {\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        val iterator = sequence.iterator()\n        var dropState: Int = -1 // -1 for not dropping, 1 for nextItem, 0 for normal iteration\n        var nextItem: T? = null\n        private fun drop() {\n            while (iterator.hasNext()) {\n                val item = iterator.next()\n                if (!predicate(item)) {\n                    nextItem\n                }\n                dropState = 1\n            }\n            return\n        }\n        }\n        dropState = 0\n    }\n\n    override fun next(): T {\n        if (dropState == -1)\n            drop()\n        if (dropState == 1) {\n            @Suppress("UNCHECKED_CAST")\n                val result = nextItem as T\n                nextItem = null\n                dropState = 0\n            return result\n        }\n        return iterator.next()\n    }\n    override fun hasNext(): Boolean {\n        if (dropState == -1)\n            drop()\n        return dropState == 1 || iterator.hasNext()\n    }\n}\n\ninternal class DistinctSequence<T, K>(private val source: Sequence<T>,\n    private val keySelector: (T) -> K) : Sequence<T> {\n    override fun iterator(): Iterator<T> = DistinctIterator(source.iterator(), keySelector)\n}\n\nprivate class DistinctIterator<T, K>(private val source: Iterator<T>, private\n    val keySelector: (T) -> K) : AbstractIterator<T>() {\n    private val observed = HashSet<K>()\n    override fun computeNext() {\n        while (source.hasNext()) {\n            val next = source.next()\n            val key = keySelector(next)\n            if (observed.add(key)) {\n                setNext(next)\n                return\n            }\n        }\n        done()\n    }\n}\n\nprivate class GeneratorSequence<T : Any>(private val getInitialValue: () -> T?,\n    private val getNextValue: (T) -> T?) : Sequence<T> {\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        var nextItem: T? = null\n        var nextState: Int = -2 // -2 for initial unknown, -1 for next unknown, 0 for done, 1 for continue\n        private fun calcNext() {\n            nextItem = if (nextState == -2) getInitialValue() else\n                getNextValue(nextItem!!)\n            nextState = if (nextItem == null) 0 else 1\n        }\n        override fun next(): T {\n            if (nextState < 0)\n                calcNext()\n            if (nextState == 0)\n                throw NoSuchElementException()\n            val result = nextItem as T\n            // Do not clean nextItem (to avoid keeping reference on yielded instance) -- need to keep state for getNextValue\n            nextState = -1\n            return result\n        }\n        override fun hasNext(): Boolean {\n            if (nextState < 0)\n                calcNext()\n            return nextState == 1\n        }\n    }\n}\n\n**\n * Returns a wrapper sequence that provides values of this sequence, but ensures it can be iterated only one time.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * [IllegalStateException] is thrown on iterating the returned sequence for the second time and the following times.\n *\n *\npublic fun <T> Sequence<T>.constrainOnce(): Sequence<T> {\n    // as? does not work in js\n    //return this as? ConstrainedOnceSequence<T> ? : ConstrainedOnceSequence(this)\n\n    return if (this is ConstrainedOnceSequence<T>) this else ConstrainedOnceSequence(this)\n}\n\n**\n * Returns a sequence which invokes the function to calculate the next value on each iteration until the function returns `null`. \n *\n * The returned sequence is constrained to be iterated only once.\n *\n * @see constrainOnce\n * @see kotlin.sequences.sequence\n *\n * @sample samples.collections.Sequences.Building.generateSequence\n *\npublic fun <T : Any> generateSequence(nextFunction: () -> T?): Sequence<T> {\n    return GeneratorSequence(nextFunction, { nextFunction() }).constrainOnce()\n}\n\n**\n * Returns a sequence defined by the starting value [seed] and the function [nextFunction],\n * which is invoked to calculate the next value based on the previous one on each iteration.\n *\n * The sequence produces values until it encounters first `null` value.\n *\n * If [seed] is `null`, an empty sequence is produced.\n *\n * The sequence can be iterated multiple times, each time starting

```

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with [seed].\n *\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithSeed\n
*\n@\n@kotlin.internal.LowPriorityInOverloadResolution\npublic fun <T : Any> generateSequence(seed: T?,
nextFunction: (T) -> T?): Sequence<T> =\n if (seed == null)\n     EmptySequence\n else\n
GeneratorSequence({ seed }, nextFunction)\n\n/**\n * Returns a sequence defined by the function [seedFunction],
which is invoked to produce the starting value,\n * and the [nextFunction], which is invoked to calculate the next
value based on the previous one on each iteration.\n *\n * The sequence produces values until it encounters first
`null` value.\n * If [seedFunction] returns `null`, an empty sequence is produced.\n *\n * The sequence can be
iterated multiple times.\n *\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithLazySeed\n *\npublic fun <T : Any>
generateSequence(seedFunction:
() -> T?, nextFunction: (T) -> T?): Sequence<T> =\n GeneratorSequence(seedFunction, nextFunction)\n\n"/*\n
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n@\n@file:kotlin.jvm.JvmMultifileClass\n@\n@file:kotlin.jvm.JvmName("\nPreconditionsKt")\n\npackage
kotlin\n\nimport kotlin.contracts.contract\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is false.\n
*\n * @sample samples.misc.Preconditions.failRequireWithLazyMessage\n *\n@\n@kotlin.internal.InlineOnly\npublic
inline fun require(value: Boolean): Unit {\n contract {\n returns() implies value\n }\n require(value) {\n
"Failed requirement." }\n}\n\n/**\n * Throws an [IllegalArgumentException] with the result of calling
[lazyMessage] if the [value] is false.\n *\n * @sample samples.misc.Preconditions.failRequireWithLazyMessage\n
*\n@\n@kotlin.internal.InlineOnly\npublic
inline fun require(value: Boolean, lazyMessage: () -> Any): Unit {\n contract {\n returns() implies value\n
}\n if (!value) {\n val message = lazyMessage()\n throw IllegalArgumentException(message.toString())\n
}\n}\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is null. Otherwise returns the not null value.\n
*\n@\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?): T {\n contract {\n
returns() implies (value != null)\n }\n return requireNotNull(value) { "Required value was null." }\n}\n\n/**\n
* Throws an [IllegalArgumentException] with the result of calling [lazyMessage] if the [value] is null. Otherwise\n
* returns the not null value.\n *\n * @sample samples.misc.Preconditions.failRequireNotNullWithLazyMessage\n
*\n@\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?, lazyMessage: () -> Any): T
{\n contract {\n returns() implies
(value != null)\n }\n if (value == null) {\n val message = lazyMessage()\n throw
IllegalArgumentException(message.toString())\n } else {\n return value\n }\n}\n\n/**\n * Throws an
[IllegalStateException] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@\n@kotlin.internal.InlineOnly\npublic inline fun
check(value: Boolean): Unit {\n contract {\n returns() implies value\n }\n check(value) { "Check failed." }\n
}\n}\n\n/**\n * Throws an [IllegalStateException] with the result of calling [lazyMessage] if the [value] is false.\n
*\n * @sample samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@\n@kotlin.internal.InlineOnly\npublic
inline fun check(value: Boolean, lazyMessage: () -> Any): Unit {\n contract {\n returns() implies value\n }\n
if (!value) {\n val message = lazyMessage()\n throw IllegalStateException(message.toString())\n
}\n}\n\n/**\n * Throws
an [IllegalStateException] if the [value] is null. Otherwise\n * returns the not null value.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@\n@kotlin.internal.InlineOnly\npublic inline fun <T :
Any> checkNotNull(value: T?): T {\n contract {\n returns() implies (value != null)\n }\n return
checkNotNull(value) { "Required value was null." }\n}\n\n/**\n * Throws an [IllegalStateException] with the
result of calling [lazyMessage] if the [value] is null. Otherwise\n * returns the not null value.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@\n@kotlin.internal.InlineOnly\npublic inline fun <T :
Any> checkNotNull(value: T?, lazyMessage: () -> Any): T {\n contract {\n returns() implies (value != null)\n
}\n if (value == null) {\n val message = lazyMessage()\n throw

```



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IllegalStateException(message.toString())\n } else {\n     return value\n }\n}\n\n/**\n * Throws an
[IllegalStateException]
with the given [message].\n *\n * @sample samples.misc.Preconditions.failWithError\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun error(message: Any): Nothing = throw
IllegalStateException(message.toString())\n","/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n// NOTE: THIS FILE IS AUTO-GENERATED
by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport
kotlin.js.*\nimport primitiveArrayConcat\nimport withType\nimport kotlin.ranges.contains\nimport
kotlin.ranges.reversed\n\n/**\n * Returns an element at the given [index] or throws an
[IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun <T> Array<out T>.elementAt(index:
Int): T {\n     return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic
actual fun ByteArray.elementAt(index: Int): Byte {\n     return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, size: $size")} }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun ShortArray.elementAt(index: Int): Short
{\n     return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic
actual fun IntArray.elementAt(index: Int): Int {\n     return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, size: $size")} }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun LongArray.elementAt(index: Int): Long
{\n     return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic
actual fun FloatArray.elementAt(index: Int): Float {\n     return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index,
size: $size")} }\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException]
if the [index] is out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n
*/\npublic actual fun DoubleArray.elementAt(index: Int): Double {\n     return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, size: $size")} }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun BooleanArray.elementAt(index: Int):
Boolean {\n     return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic
actual fun CharArray.elementAt(index: Int): Char {\n     return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, size: $size")} }\n}\n\n/**\n * Returns a [List] that wraps the original
array.\n */\npublic actual fun <T> Array<out T>.asList(): List<T> {\n     return
ArrayList<T>(this.unsafeCast<Array<Any?>>())\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun ByteArray.asList(): List<Byte> {\n     return
this.unsafeCast<Array<Byte>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun ShortArray.asList(): List<Short> {\n     return
this.unsafeCast<Array<Short>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n

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*\/n@kotlin.internal.InlineOnly\npublic actual inline fun IntArray.asList(): List<Int> {\n    return
this.unsafeCast<Array<Int>>().asList()\n}\n\n/**\n * Returns a [List] that
wraps the original array.\n */\n@kotlin.internal.InlineOnly\npublic actual inline fun LongArray.asList():
List<Long> {\n    return this.unsafeCast<Array<Long>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the
original array.\n */\n@kotlin.internal.InlineOnly\npublic actual inline fun FloatArray.asList(): List<Float> {\n
return this.unsafeCast<Array<Float>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun DoubleArray.asList(): List<Double> {\n    return
this.unsafeCast<Array<Double>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun BooleanArray.asList(): List<Boolean> {\n    return
this.unsafeCast<Array<Boolean>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n\npublic actual fun CharArray.asList(): List<Char> {\n    return object : AbstractList<Char>(), RandomAccess {\n
override
    val size: Int get() = this@asList.size\n        override fun isEmpty(): Boolean = this@asList.isEmpty()\n        override
fun contains(element: Char): Boolean = this@asList.contains(element)\n        override fun get(index: Int): Char {\n
            AbstractList.checkElementIndex(index, size)\n                return this@asList[index]\n            }\n        override fun
indexOf(element: Char): Int {\n            @Suppress("USELESS_CAST")\n                if ((element as Any?) !is Char)
return -1\n                return this@asList.indexOf(element)\n            }\n        override fun lastIndexOf(element: Char): Int
{\n            @Suppress("USELESS_CAST")\n                if ((element as Any?) !is Char) return -1\n                return
this@asList.lastIndexOf(element)\n            }\n        }\n}\n\n/**\n * Returns `true` if the two specified arrays are *deeply*
equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * If two
corresponding elements are nested arrays,
they are also compared deeply.\n * If any of arrays contains itself on any nesting level the behavior is undefined.\n
*/\n * \n * The elements of other types are compared for equality with the [equals][Any.equals] function.\n * For floating
point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual infix fun <T>
Array<out T>.contentDeepEquals(other: Array<out T>): Boolean {\n    return
this.contentDeepEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *deeply* equal to one
another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The specified arrays are
also considered deeply equal if both are `null`.\n * \n * If two corresponding elements are nested arrays, they are
also compared deeply.\n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * The
elements of other types are
compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is
equal to itself and `-0.0` is not equal to `0.0`.\n
*/\n@SinceKotlin("1.4")\n@library("arrayDeepEquals")\npublic
actual infix fun <T> Array<out T>?.contentDeepEquals(other: Array<out T>?): Boolean {\n
definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested
arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is
undefined.\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual fun <T>
Array<out T>.contentDeepHashCode(): Int {\n    return this.contentDeepHashCode()\n}\n\n/**\n * Returns a hash
code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of
arrays contains itself on any nesting level the behavior is undefined.\n
*/\n@SinceKotlin("1.4")\n@library("arrayDeepHashCode")\npublic
actual fun <T> Array<out T>?.contentDeepHashCode(): Int {\n    definedExternally\n}\n\n/**\n * Returns a string
representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any
of arrays contains itself on any nesting level that reference\n * is rendered as `[...]` to prevent recursion.\n * \n *
*/\n@sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual fun <T> Array<out
T>.contentDeepToString(): String {\n    return this.contentDeepToString()\n}\n\n/**\n * Returns a string
representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any

```


equal to itself and `-0.0` is not equal to `0.0`.
`@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")`
`@SinceKotlin("1.1")`
`@DeprecatedSinceKotlin(hiddenSince = "1.4")`
`public actual infix fun BooleanArray.contentEquals(other: BooleanArray): Boolean {`
`return this.contentEquals(other)}`
`}`
`/**`
 `* Returns `true` if the two specified arrays are *structurally* equal to one another,`
 `* i.e. contain the same number of the same elements in the same order.`
 `* The elements are compared for equality with the [equals][Any.equals] function.`
 `* For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
@SinceKotlin("1.1")
@DeprecatedSinceKotlin(hiddenSince = "1.4")
public actual infix fun CharArray.contentEquals(other: CharArray): Boolean {
return this.contentEquals(other)}
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun <T> Array<out T>?.contentEquals(other: Array<out T>?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun ByteArray?.contentEquals(other: ByteArray?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun ShortArray?.contentEquals(other: ShortArray?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun IntArray?.contentEquals(other: IntArray?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun LongArray?.contentEquals(other: LongArray?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun FloatArray?.contentEquals(other: FloatArray?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.
@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun DoubleArray?.contentEquals(other: DoubleArray?): Boolean {
definedExternally
}
/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another,
 * i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and -0.0 is not equal to 0.0.`

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*\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic actual infix fun BooleanArray?.contentEquals(other: BooleanArray?): Boolean {\n
    definedExternally\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n*\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic actual infix fun CharArray?.contentEquals(other: CharArray?): Boolean {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun <T> Array<out T>.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun ByteArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun ShortArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun IntArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun LongArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun FloatArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun DoubleArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun BooleanArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun CharArray.contentHashCode(): Int {\n
    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n}\n\n*\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun <T> Array<out T>?.contentHashCode(): Int {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun ByteArray?.contentHashCode(): Int {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun ShortArray?.contentHashCode(): Int {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun IntArray?.contentHashCode(): Int {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun LongArray?.contentHashCode(): Int {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n*\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun FloatArray?.contentHashCode(): Int {\n
    definedExternally\n}\n\n/**\n * Returns a hash code based on the

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contents of this array as if it is [List].\n *^@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun DoubleArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *^@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun BooleanArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *^@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun CharArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun <T> Array<out T>.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun ByteArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun ShortArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun IntArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun LongArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun FloatArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun DoubleArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun BooleanArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun CharArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *^@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun

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*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun <T> Array<out T>?.contentToString():
String {\n  definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ByteArray?.contentToString(): String
{\n  definedExternally\n}\n\n/**\n * Returns
a string representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ShortArray?.contentToString(): String
{\n  definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun IntArray?.contentToString(): String {\n
definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun LongArray?.contentToString(): String
{\n  definedExternally\n}\n\n/**\n * Returns a string representation of the
contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun FloatArray?.contentToString(): String
{\n  definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun DoubleArray?.contentToString(): String
{\n  definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun BooleanArray?.contentToString():
String {\n  definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array
as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun CharArray?.contentToString(): String
{\n  definedExternally\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that
array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it
overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset
the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of
the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this
array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex]
or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws
IndexOutOfBoundsException
when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when
that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic actual inline fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset:
Int = 0, startIndex: Int = 0, endIndex: Int = size): Array<T> {\n  arrayCopy(this, destination, destinationOffset,
startIndex, endIndex)\n  return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination]
array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the
subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n *
@param destinationOffset the position in the [destination] array to copy to, 0 by default.\n
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end
(exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array

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starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n *
 * \n * @return the [destination] array.\n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun ByteArray.copyInto(destination: ByteArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ByteArray {\n    arrayCopy(this.unsafeCast<Array<Byte>>(), destination.unsafeCast<Array<Byte>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ShortArray {\n    arrayCopy(this.unsafeCast<Array<Short>>(), destination.unsafeCast<Array<Short>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): IntArray {\n    arrayCopy(this.unsafeCast<Array<Int>>(), destination.unsafeCast<Array<Int>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
```

```
actual inline fun LongArray.copyInto(destination: LongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): LongArray {\n    arrayCopy(this.unsafeCast<Array<Long>>(), destination.unsafeCast<Array<Long>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**
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* Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): FloatArray {\n    arrayCopy(this.unsafeCast<Array<Float>>(), destination.unsafeCast<Array<Float>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
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```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun DoubleArray.copyInto(destination: DoubleArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): DoubleArray {\n    arrayCopy(this.unsafeCast<Array<Double>>(), destination.unsafeCast<Array<Double>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
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```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun BooleanArray.copyInto(destination: BooleanArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): BooleanArray {\n    arrayCopy(this.unsafeCast<Array<Boolean>>(), destination.unsafeCast<Array<Boolean>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
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> endIndex`.n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],.n * or when that index is out of the [destination] array indices range.\n *
\n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic actual inline fun CharArray.copyInto(destination: CharArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): CharArray {\n    arrayCopy(this.unsafeCast<Array<Char>>(),
destination.unsafeCast<Array<Char>>(), destinationOffset, startIndex, endIndex)\n
    return destination\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("ACTUAL_WITHOUT_EXPECT",
"NOTHING_TO_INLINE")\npublic actual inline fun <T> Array<out T>.copyOf(): Array<T> {\n    return
this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline fun ByteArray.copyOf(): ByteArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns new
array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline fun ShortArray.copyOf(): ShortArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns new
array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline fun IntArray.copyOf(): IntArray {\n    return
this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\npublic actual fun LongArray.copyOf(): LongArray {\n
return withType("LongArray", this.asDynamic().slice())\n}\n\n/**\n * Returns new array which is a copy of the
original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun FloatArray.copyOf(): FloatArray {\n    return
this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline fun DoubleArray.copyOf(): DoubleArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns
new array which
is a copy of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n
*\npublic actual fun BooleanArray.copyOf(): BooleanArray {\n    return withType("BooleanArray",
this.asDynamic().slice())\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n *\npublic actual fun CharArray.copyOf(): CharArray {\n
return withType("CharArray", this.asDynamic().slice())\n}\n\n/**\n * Returns new array which is a copy of the
original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values
if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the
[newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are
filled with zero values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n
*\npublic actual fun ByteArray.copyOf(newSize: Int): ByteArray {\n    require(newSize >= 0) { "Invalid new
array size: $newSize." }\n    return fillFrom(this, ByteArray(newSize))\n}\n\n/**\n * Returns new array which is a
copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with
zero values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated
to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array
are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
ShortArray.copyOf(newSize: Int): ShortArray {\n    require(newSize >= 0) { "Invalid new array size: $newSize."
}\n    return fillFrom(this, ShortArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original
array, resized to the given [newSize].\n

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```

* The copy is either truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than
the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size
of the original array, the extra elements in the copy array are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
IntArray.copyOf(newSize: Int): IntArray {\n    require(newSize >= 0) { \"Invalid new array size: $newSize.\" }\n
return fillFrom(this, IntArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array,
resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n
* \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If
[newSize] is greater than the size of the original array, the extra elements in the copy array
are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
LongArray.copyOf(newSize: Int): LongArray {\n    require(newSize >= 0) { \"Invalid new array size: $newSize.\"
}\n    return withType(\"LongArray\", arrayCopyResize(this, newSize, 0L))\n}\n\n/**\n * Returns new array which
is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end
with zero values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is
truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the
copy array are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
FloatArray.copyOf(newSize: Int): FloatArray {\n    require(newSize >= 0) { \"Invalid new array size: $newSize.\"
}\n    return fillFrom(this,
FloatArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given
[newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize]
is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater
than the size of the original array, the extra elements in the copy array are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
DoubleArray.copyOf(newSize: Int): DoubleArray {\n    require(newSize >= 0) { \"Invalid new array size:
$newSize.\" }\n    return fillFrom(this, DoubleArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of
the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with `false`
values if necessary.\n * \n * - If [newSize] is less than the size of the original array,
the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra
elements in the copy array are filled with `false` values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
BooleanArray.copyOf(newSize: Int): BooleanArray {\n    require(newSize >= 0) { \"Invalid new array size:
$newSize.\" }\n    return withType(\"BooleanArray\", arrayCopyResize(this, newSize, false))\n}\n\n/**\n * Returns
new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or
padded at the end with null char (`\u0000`) values if necessary.\n * \n * - If [newSize] is less than the size of the
original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original
array, the extra elements in the copy array are filled with null char (`\u0000`) values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n
*\npublic actual fun CharArray.copyOf(newSize: Int): CharArray {\n    require(newSize >= 0) { \"Invalid new
array size: $newSize.\" }\n    return withType(\"CharArray\", fillFrom(this, CharArray(newSize)))\n}\n\n/**\n *
Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either
truncated or padded at the end with `null` values if necessary.\n * \n * - If [newSize] is less than the size of the
original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original
array, the extra elements in the copy array are filled with `null` values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizingCopyOf\n
*\n@Suppress(\"ACTUAL_WITHOUT_EXPECT\")\npublic actual fun <T> Array<out T>.copyOf(newSize: Int):
Array<T?> {\n    require(newSize >= 0) { \"Invalid new array size: $newSize.\" }\n    return arrayCopyResize(this,

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newSize, null)\n}\n\n/**\n

* Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

*\n@\nSuppress("ACTUAL_WITHOUT_EXPECT")\n\npublic actual fun <T> Array<out

T>.copyOfRange(fromIndex: Int, toIndex: Int): Array<T> {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]

is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than

[toIndex].\n *\n\npublic actual fun ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray {\n

AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex,

toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to

copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n\npublic

actual fun ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray {\n

AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex,

toIndex)\n}\n\n/**\n * Returns a new array

which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range

(inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws

IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n\npublic

actual fun

IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray {\n AbstractList.checkRangeIndexes(fromIndex,

toIndex, size)\n return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/**\n * Returns a new array which is a

copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to

copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException

if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws

IllegalArgumentException

if [fromIndex] is greater than [toIndex].\n *\n\npublic actual fun LongArray.copyOfRange(fromIndex: Int, toIndex:

Int): LongArray {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return

withType("LongArray", this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a

copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to

copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException

if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws

IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n\npublic actual fun

FloatArray.copyOfRange(fromIndex: Int, toIndex: Int): FloatArray {\n

AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex,

toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original

array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the

range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or

[toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than

[toIndex].\n *\n\npublic actual fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray {\n

AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex,

toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to

copy.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to

copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n\npublic

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copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic
actual fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("BooleanArray",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the specified
range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param
toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n */\npublic actual fun CharArray.copyOfRange(fromIndex: Int, toIndex: Int):
CharArray {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("CharArray",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n * Fills this array or its subrange with the specified
[element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
(exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n
*\n*/\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]
is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n
*\n*/\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n*/\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ShortArray.fill(element:
Short, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex,
size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified
[element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param
toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n*/\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element]
value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end
of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentOutOfRangeException if [fromIndex] is greater than [toIndex].\n
*\n*/\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic

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actual fun LongArray.fill(element: Long, fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    nativeFill(element, fromIndex, toIndex)
}

* Fills this array or its subrange with the specified [element] value.
* @param fromIndex the start of the range (inclusive) to fill, 0 by default.
* @param toIndex the end of the range (exclusive) to fill, size of this array by default.
* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

* \n @SinceKotlin("1.3") \n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS") \n public
actual fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    nativeFill(element, fromIndex, toIndex)
}

* Fills this array or its subrange with the specified [element] value.
* @param fromIndex the start of the range (inclusive) to fill, 0 by default.
* @param toIndex the end of the range (exclusive) to fill, size of this array by default.
* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

* \n @SinceKotlin("1.3") \n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS") \n public
actual
fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    nativeFill(element, fromIndex, toIndex)
}

* Fills this array or its subrange with the specified [element] value.
* @param fromIndex the start of the range (inclusive) to fill, 0 by default.
* @param toIndex the end of the range (exclusive) to fill, size of this array by default.
* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

* \n @SinceKotlin("1.3") \n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS") \n public
actual fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    nativeFill(element, fromIndex, toIndex)
}

* Fills this array or its
subrange with the specified [element] value.
* @param fromIndex the start of the range (inclusive) to fill, 0 by default.
* @param toIndex the end of the range (exclusive) to fill, size of this array by default.
* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

* \n @SinceKotlin("1.3") \n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS") \n public
actual fun CharArray.fill(element: Char, fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    nativeFill(element, fromIndex, toIndex)
}

* Returns an array containing all elements of the original array and then the given [element].

* \n @Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE") \n public actual inline operator
fun <T> Array<out T>.plus(element: T): Array<T> {
    return this.asDynamic().concat(arrayOf(element))
}

* Returns an array containing all elements of the original array and then the given [element].

* \n @Suppress("NOTHING_TO_INLINE") \n public actual inline operator fun ByteArray.plus(element: Byte):
ByteArray {
    return plus(byteArrayOf(element))
}

* Returns an array containing all elements of the original array and then the given [element].

* \n @Suppress("NOTHING_TO_INLINE") \n public actual inline operator fun ShortArray.plus(element: Short): ShortArray {
    return plus(shortArrayOf(element))
}

* Returns an array containing all elements of the original array and then the given [element].

* \n @Suppress("NOTHING_TO_INLINE") \n public actual inline operator fun IntArray.plus(element: Int):
IntArray {
    return plus(intArrayOf(element))
}

* Returns an array containing all elements of the original array and then the given [element].

* \n @Suppress("NOTHING_TO_INLINE") \n public actual inline operator fun LongArray.plus(element:

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Long): LongArray {\n return plus(longArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n */\n\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun FloatArray.plus(element: Float): FloatArray {\n return plus(floatArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n */\n\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun DoubleArray.plus(element: Double): DoubleArray {\n return plus(doubleArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n */\n\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun BooleanArray.plus(element: Boolean): BooleanArray {\n return plus(booleanArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n */\n\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun CharArray.plus(element: Char): CharArray {\n return plus(charArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\n@Suppress("ACTUAL_WITHOUT_EXPECT")\npublic actual operator fun <T> Array<out T>.plus(elements: Collection<T>): Array<T> {\n return arrayPlusCollection(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun ByteArray.plus(elements: Collection<Byte>): ByteArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun ShortArray.plus(elements: Collection<Short>): ShortArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun IntArray.plus(elements: Collection<Int>): IntArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun LongArray.plus(elements: Collection<Long>): LongArray {\n return arrayPlusCollection(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun FloatArray.plus(elements: Collection<Float>): FloatArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun DoubleArray.plus(elements: Collection<Double>): DoubleArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun BooleanArray.plus(elements: Collection<Boolean>): BooleanArray {\n return arrayPlusCollection(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n */\n\npublic actual operator fun CharArray.plus(elements: Collection<Char>): CharArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\n\n@Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE")\npublic actual inline operator fun <T> Array<out T>.plus(elements: Array<out T>): Array<T> {\n return this.asDynamic().concat(elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\n\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun ByteArray.plus(elements: ByteArray): ByteArray {\n return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\n\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun ShortArray.plus(elements: ShortArray): ShortArray {\n return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n */\n

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*\n@Suppress("NOTHING_TO_INLINE")\npublic
    actual inline operator fun IntArray.plus(elements: IntArray): IntArray {\n    return primitiveArrayConcat(this,
    elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the
    given [elements] array.\n */\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun
    LongArray.plus(elements: LongArray): LongArray {\n    return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n
    */\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun FloatArray.plus(elements:
    FloatArray): FloatArray {\n    return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array containing
    all elements of the original array and then all elements of the given [elements] array.\n
    */\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun DoubleArray.plus(elements:
    DoubleArray): DoubleArray
    {\n    return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array containing all elements of the
    original array and then all elements of the given [elements] array.\n
    */\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun BooleanArray.plus(elements:
    BooleanArray): BooleanArray {\n    return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array
    containing all elements of the original array and then all elements of the given [elements] array.\n
    */\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun CharArray.plus(elements:
    CharArray): CharArray {\n    return primitiveArrayConcat(this, elements)\n}\n\n/**\n * Returns an array containing
    all elements of the original array and then the given [element].\n
    */\n@Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE")\npublic actual inline fun <T>
    Array<out T>.plusElement(element: T): Array<T> {\n    return
    this.asDynamic().concat(arrayOf(element))\n}\n\n/**\n * Sorts the array
    in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n
    */\n@library("primitiveArraySort")\npublic actual fun IntArray.sort(): Unit {\n    definedExternally\n}\n\n/**\n *
    Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n */\npublic actual fun
    LongArray.sort(): Unit {\n    @Suppress("DEPRECATION")\n    if (size > 1) sort { a: Long, b: Long ->
    a.compareTo(b) }\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
    samples.collections.Arrays.Sorting.sortArray\n */\n@library("primitiveArraySort")\npublic actual fun
    ByteArray.sort(): Unit {\n    definedExternally\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
    samples.collections.Arrays.Sorting.sortArray\n */\n@library("primitiveArraySort")\npublic actual fun
    ShortArray.sort(): Unit {\n    definedExternally\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
    samples.collections.Arrays.Sorting.sortArray\n */\n@library("primitiveArraySort")\npublic actual fun
    DoubleArray.sort(): Unit {\n    definedExternally\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
    samples.collections.Arrays.Sorting.sortArray\n */\n@library("primitiveArraySort")\npublic actual fun
    FloatArray.sort(): Unit {\n    definedExternally\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
    samples.collections.Arrays.Sorting.sortArray\n */\n@library("primitiveArraySort")\npublic actual fun
    CharArray.sort(): Unit {\n    definedExternally\n}\n\n/**\n * Sorts the array in-place according to the natural order
    of its elements.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other
    after sorting.\n * \n * @sample samples.collections.Arrays.Sorting.sortArrayOfComparable\n */\npublic actual fun
    <T : Comparable<T>> Array<out T>.sort(): Unit {\n    if (size > 1) sortArray(this)\n}\n\n/**\n * Sorts the array in-
    place according to the order specified by the given [comparison] function.\n * \n * The sort is _stable_. It means
    that equal elements preserve their order relative to each other after sorting.\n */\n@Deprecated("Use sortWith
    instead", ReplaceWith("this.sortWith(Comparator(comparison))"))\n@DeprecatedSinceKotlin(warningSince =
    "1.6")\npublic fun <T> Array<out T>.sort(comparison: (a: T, b: T) -> Int): Unit {\n    if (size > 1)
    sortArrayWith(this, comparison)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * The sort is _stable_. It
    means that equal elements preserve their order relative to each other after sorting.\n * \n * @param fromIndex the
    start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size
    of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]

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is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable\n
*\n@\n@SinceKotlin("1.4")\n@\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    sortArrayWith(this, fromIndex, toIndex,
naturalOrder())\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@\n@SinceKotlin("1.4")\n@\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex,
toIndex, size)\n    val subarray = this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ByteArray>()\n
subarray.sort()\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@\n@SinceKotlin("1.4")\n@\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ShortArray>()\n    subarray.sort()\n}\n\n/**\n *
Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by
default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@\n@SinceKotlin("1.4")\n@\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<IntArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the
range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@\n@SinceKotlin("1.4")\n@\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    sortArrayWith(this.unsafeCast<Array<Long>>(),
fromIndex, toIndex, naturalOrder())\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex
the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort,
size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
[toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@\n@SinceKotlin("1.4")\n@\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic

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actual fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    val subarray =
        this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<FloatArray>()
    subarray.sort()
}

/** Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    val subarray =
        this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<DoubleArray>()
    subarray.sort()
}

/** Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size):
    Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    val subarray =
        this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<CharArray>()
    subarray.sort()
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun ByteArray.sort(noinline comparison: (a: Byte, b: Byte) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun ShortArray.sort(noinline comparison: (a: Short, b: Short) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun IntArray.sort(noinline comparison: (a: Int, b: Int) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun LongArray.sort(noinline comparison: (a: Long, b: Long) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun FloatArray.sort(noinline comparison: (a: Float, b: Float) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun DoubleArray.sort(noinline comparison: (a: Double, b: Double) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun CharArray.sort(noinline comparison: (a: Char, b: Char) -> Int): Unit {
    nativeSort(comparison)
}

/** Sorts the array in-place according to the order specified by the given [comparator].
 * The sort is _stable_. It

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means that equal

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elements preserve their order relative to each other after sorting.\n *^/npublic actual fun <T> Array<out T>.sortWith(comparator: Comparator<in T>): Unit {\n    if (size > 1) sortArrayWith(this, comparator)\n}\n/n/n/**\n * Sorts a range in the array in-place with the given [comparator].\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n\n *^/n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun <T> Array<out T>.sortWith(comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
```

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    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    sortArrayWith(this, fromIndex, toIndex, comparator)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun ByteArray.toTypedArray(): Array<Byte> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun ShortArray.toTypedArray(): Array<Short> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun IntArray.toTypedArray(): Array<Int> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun LongArray.toTypedArray(): Array<Long> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun FloatArray.toTypedArray(): Array<Float> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun DoubleArray.toTypedArray(): Array<Double> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun BooleanArray.toTypedArray(): Array<Boolean> {\n    return js("[]").slice.call(this)\n}\n/n/n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n *^/npublic actual fun CharArray.toTypedArray(): Array<Char> {\n    return Array(size) { index -> this[index] }\n}\n/n/n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```
*^/n@file:kotlin.jvm.JvmName("ComparisonsKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage kotlin.comparisons\n/n/n/**\n * Compares two values using the specified functions [selectors] to calculate the result of the comparison.\n * \n * The functions are called sequentially, receive the given values [a] and [b] and return [Comparable] objects. As soon as the [Comparable] instances returned by a function for [a] and [b] values do not compare as equal, the result of that comparison is returned.\n * \n * @sample samples.comparisons.Comparisons.compareValuesByWithSelectors\n *^/npublic fun <T> compareValuesBy(a: T, b: T, vararg selectors: (T) -> Comparable<*>?): Int {\n    require(selectors.size > 0)\n    return compareValuesByImpl(a, b, selectors)\n}\n/n/nprivate fun <T> compareValuesByImpl(a: T, b: T, selectors: Array<out (T) -> Comparable<*>?): Int {\n    for (fn in selectors) {\n        val v1 = fn(a)\n        val v2 = fn(b)\n        val diff = compareValues(v1, v2)\n        if (diff != 0) return diff\n    }\n    return 0\n}\n/n/n/**\n * Compares two values using the specified [selector] function to calculate the result of the comparison.\n * \n * The function is applied to the given values [a] and [b] and return [Comparable] objects.\n * \n * The result of comparison of these [Comparable] instances is returned.\n * \n * @sample samples.comparisons.Comparisons.compareValuesByWithSingleSelector\n *^/n@kotlin.internal.InlineOnly\npublic inline fun <T> compareValuesBy(a: T, b: T, selector: (T) -> Comparable<*>?): Int {\n    return compareValues(selector(a), selector(b))\n}\n/n/n/**\n * Compares two values using the specified [selector] function to calculate the result of the comparison.\n * \n * The function is applied to the given values [a] and [b] and return objects of type K which are then being compared with the given [comparator].\n * \n * @sample
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samples.comparisons.Comparisons.compareValuesByWithComparator\n *^\n@kotlin.internal.InlineOnly\npublic
inline fun <T, K> compareValuesBy(a:
T, b: T, comparator: Comparator<in K>, selector: (T) -> K): Int {\n    return comparator.compare(selector(a),
selector(b))\n}\n\n//// Not so useful without type inference for receiver of expression\n//// compareValuesWith(v1,
v2, compareBy { it.prop1 } thenByDescending { it.prop2 })\n\n***\n// * Compares two values using the specified
[comparator].\n\n *^\n//@Suppress("NOTHING_TO_INLINE")\n//public inline fun <T> compareValuesWith(a: T,
b: T, comparator: Comparator<T>): Int = comparator.compare(a, b)\n\n^\n\n***\n * Compares two nullable
[Comparable] values. Null is considered less than any value.\n *^\n * @sample
samples.comparisons.Comparisons.compareValues\n *^\npublic fun <T : Comparable<*>> compareValues(a: T?, b:
T?): Int {\n    if (a === b) return 0\n    if (a == null) return -1\n    if (b == null) return 1\n}\n\n@Suppress("UNCHECKED_CAST")\n    return (a as Comparable<Any>).compareTo(b)\n}\n\n***\n * Creates a
comparator using the sequence of functions to calculate
a result of comparison.\n * The functions are called sequentially, receive the given values `a` and `b` and return
[Comparable]\n * objects. As soon as the [Comparable] instances returned by a function for `a` and `b` values do
not\n * compare as equal, the result of that comparison is returned from the [Comparator].\n *^\n * @sample
samples.comparisons.Comparisons.compareByWithSelectors\n *^\npublic fun <T> compareBy(vararg selectors: (T)
-> Comparable<*>?): Comparator<T> {\n    require(selectors.size > 0)\n    return Comparator { a, b ->
compareValuesByImpl(a, b, selectors) }\n}\n\n***\n * Creates a comparator using the function to transform value
to a [Comparable] instance for comparison.\n *^\n * @sample
samples.comparisons.Comparisons.compareByWithSingleSelector\n *^\n@kotlin.internal.InlineOnly\npublic inline
fun <T> compareBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n    Comparator { a, b ->
compareValuesBy(a, b, selector) }\n\n***\n * Creates a comparator
using the [selector] function to transform values being compared and then applying\n * the specified [comparator]
to compare transformed values.\n *^\n * @sample samples.comparisons.Comparisons.compareByWithComparator\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun <T, K> compareBy(comparator: Comparator<in K>, crossinline
selector: (T) -> K): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(a, b, comparator, selector)
}\n\n***\n * Creates a descending comparator using the function to transform value to a [Comparable] instance for
comparison.\n *^\n * @sample samples.comparisons.Comparisons.compareByDescendingWithSingleSelector\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun <T> compareByDescending(crossinline selector: (T) ->
Comparable<*>?): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(b, a, selector) }\n\n***\n *
Creates a descending comparator using the [selector] function to transform values being compared and then
applying\n * the specified [comparator]
to compare transformed values.\n *^\n * Note that an order of [comparator] is reversed by this wrapper.\n *^\n *
@sample samples.comparisons.Comparisons.compareByDescendingWithComparator\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun <T, K> compareByDescending(comparator: Comparator<in K>,
crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(b, a, comparator,
selector) }\n\n***\n * Creates a comparator comparing values after the primary comparator defined them equal. It
uses\n * the function to transform value to a [Comparable] instance for comparison.\n *^\n * @sample
samples.comparisons.Comparisons.thenBy\n *^\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n    Comparator { a, b -
->\n        val previousCompare = this@thenBy.compare(a, b)\n        if (previousCompare != 0) previousCompare else
compareValuesBy(a, b, selector)\n    }\n\n***\n * Creates a
comparator comparing values after the primary comparator defined them equal. It uses\n * the [selector] function to
transform values and then compares them with the given [comparator].\n *^\n * @sample
samples.comparisons.Comparisons.thenByWithComparator\n *^\n@kotlin.internal.InlineOnly\npublic inline fun <T,
K> Comparator<T>.thenBy(comparator: Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare = this@thenBy.compare(a, b)\n        if (previousCompare != 0)
previousCompare else compareValuesBy(a, b, comparator, selector)\n    }\n\n***\n * Creates a descending

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comparator using the primary comparator and\n * the function to transform value to a [Comparable] instance for
comparison.\n *\n * @sample samples.comparisons.Comparisons.thenByDescending\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> Comparator<T>.thenByDescending(crossinline selector: (T)
-> Comparable<*>?): Comparator<T> =\n    Comparator { a, b ->\n
        val previousCompare = this@thenByDescending.compare(a, b)\n        if (previousCompare != 0)
previousCompare else compareValuesBy(b, a, selector)\n    }\n\n/**\n * Creates a descending comparator
comparing values after the primary comparator defined them equal. It uses\n * the [selector] function to transform
values and then compares them with the given [comparator].\n *\n * @sample
samples.comparisons.Comparisons.thenByDescendingWithComparator\n
*\n@kotlin.internal.InlineOnly\npublic
inline fun <T, K> Comparator<T>.thenByDescending(comparator: Comparator<in K>, crossinline selector: (T) ->
K): Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare = this@thenByDescending.compare(a,
b)\n        if (previousCompare != 0) previousCompare else compareValuesBy(b, a, comparator, selector)\n    }\n\n\n/**\n * Creates a comparator using the primary comparator and function to calculate a result of comparison.\n
*\n * @sample samples.comparisons.Comparisons.thenComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> Comparator<T>.thenComparator(crossinline comparison:
(a: T, b: T) -> Int): Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare =
this@thenComparator.compare(a, b)\n        if (previousCompare != 0) previousCompare else comparison(a, b)\n    }\n\n\n/**\n * Combines this comparator and the given [comparator] such that the latter is applied only\n * when the
former considered values equal.\n *\n * @sample samples.comparisons.Comparisons.then\n
*\n@kotlin.internal.InlineOnly\npublic infix fun
<T> Comparator<T>.then(comparator: Comparator<in T>): Comparator<T> =\n    Comparator { a, b ->\n        val
previousCompare = this@then.compare(a, b)\n        if (previousCompare != 0) previousCompare else
comparator.compare(a, b)\n    }\n\n\n/**\n * Combines this comparator and the given [comparator] such that the latter
is applied only\n * when the former considered values equal.\n *\n * @sample
samples.comparisons.Comparisons.thenDescending\n
*\n@kotlin.internal.InlineOnly\npublic
infix fun <T> Comparator<T>.thenDescending(comparator: Comparator<in T>): Comparator<T> =\n    Comparator<T> { a, b ->\n        val previousCompare = this@thenDescending.compare(a, b)\n        if
(previousCompare != 0) previousCompare else comparator.compare(b, a)\n    }\n\n\n// Not so useful without type
inference for receiver of expression\n\n/**\n * Extends the given [comparator] of non-nullable values to a comparator
of nullable values\n * considering `null` value less than any other value.\n *\n * @sample
samples.comparisons.Comparisons.nullsFirstLastWithComparator\n
*\n@kotlin.internal.InlineOnly\npublic fun <T : Any>
nullsFirst(comparator: Comparator<in T>): Comparator<T?> =\n    Comparator { a, b ->\n        when {\n            a
=== b -> 0\n            a == null -> -1\n            b == null -> 1\n            else -> comparator.compare(a, b)\n        }\n    }\n\n\n/**\n * Provides a comparator of nullable [Comparable] values\n * considering `null` value less than any other
value.\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T : Comparable<T>> nullsFirst(): Comparator<T?> =
nullsFirst(naturalOrder())\n\n\n/**\n * Extends the given [comparator] of non-nullable values to a comparator of
nullable values\n * considering `null` value greater than any other value.\n *\n * @sample
samples.comparisons.Comparisons.nullsFirstLastWithComparator\n
*\n@kotlin.internal.InlineOnly\npublic fun <T : Any>
nullsLast(comparator: Comparator<in T>): Comparator<T?> =\n    Comparator { a, b ->\n        when {\n            a
=== b -> 0\n            a == null -> 1\n            b == null -> -1\n            else -> comparator.compare(a, b)\n        }\n    }\n\n\n/**\n * Provides a comparator of nullable [Comparable] values\n * considering `null` value greater than any
other value.\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T : Comparable<T>> nullsLast(): Comparator<T?> =
nullsLast(naturalOrder())\n\n\n\n/**\n * Returns a comparator that compares [Comparable] objects in natural order.\n *\n * @sample
samples.comparisons.Comparisons.naturalOrderComparator\n
*\n@kotlin.internal.InlineOnly\npublic fun <T : Comparable<T>> naturalOrder():
Comparator<T> = @Suppress("\u0027UNCHECKED_CAST\u0027") (NaturalOrderComparator as Comparator<T>)\n\n\n\n/**\n * Returns a comparator that compares [Comparable] objects in reversed natural order.\n *\n * @sample

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samples.comparisons.Comparisons.nullsFirstLastWithComparator\n *\npublic fun <T : Comparable<T>>
reverseOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST") (ReverseOrderComparator as
Comparator<T>)\n\n/**\n * Returns a comparator that imposes the reverse ordering of this comparator.\n *\n *
@sample samples.comparisons.Comparisons.reversed\n
*\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")\npublic fun <T> Comparator<T>.reversed():
Comparator<T> = when (this) {\n is ReversedComparator -> this.comparator\n NaturalOrderComparator ->
@Suppress("UNCHECKED_CAST") (ReverseOrderComparator
as Comparator<T>)\n ReverseOrderComparator -> @Suppress("UNCHECKED_CAST")
(NaturalOrderComparator as Comparator<T>)\n else -> ReversedComparator(this)\n}\n\nprivate class
ReversedComparator<T>(public val comparator: Comparator<T>) : Comparator<T> {\n override fun compare(a:
T, b: T): Int = comparator.compare(b, a)\n @Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed():
Comparator<T> = comparator\n}\n\nprivate object NaturalOrderComparator : Comparator<Comparable<Any>> {\n
override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = a.compareTo(b)\n
@Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed(): Comparator<Comparable<Any>> =
ReverseOrderComparator\n}\n\nprivate object ReverseOrderComparator : Comparator<Comparable<Any>> {\n
override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = b.compareTo(a)\n
@Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed(): Comparator<Comparable<Any>> =
NaturalOrderComparator\n}\n"/*\n
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is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StandardKt")\npackage kotlin\nimport
kotlin.contracts.*\n\n/**\n * An exception is thrown to indicate that a method body remains to be implemented.\n
*\npublic class NotImplementedError(message: String = "An operation is not implemented.") :
Error(message)\n\n/**\n * Always throws [NotImplementedError] stating that operation is not implemented.\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun TODO(): Nothing = throw NotImplementedError()\n\n/**\n *
Always throws [NotImplementedError] stating that operation is not implemented.\n *\n * @param reason a string
explaining why the implementation is missing.\n *\n@kotlin.internal.InlineOnly\npublic inline fun TODO(reason:
String): Nothing = throw NotImplementedError("An
operation is not implemented: $reason")\n\n\n/**\n * Calls the specified function [block] and returns its result.\n
*\n * For detailed usage information see the documentation for [scope
functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun <R> run(block: () -> R): R {\n contract {\n
callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block()\n}\n\n/**\n * Calls the specified
function [block] with `this` value as its receiver and returns its result.\n *\n * For detailed usage information see the
documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> T.run(block: T.() -> R): R {\n contract {\n
callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block()\n}\n\n/**\n * Calls the specified
function [block] with the given [receiver] as its
receiver and returns its result.\n *\n * For detailed usage information see the documentation for [scope
functions](https://kotlinlang.org/docs/reference/scope-functions.html#with).\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> with(receiver: T, block: T.() -> R): R {\n contract {\n
callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return receiver.block()\n}\n\n/**\n * Calls the
specified function [block] with `this` value as its receiver and returns `this` value.\n *\n * For detailed usage
information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-
functions.html#apply).\n *\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> T.apply(block: T.() -> Unit): T {\n
contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n block()\n return
this\n}\n\n\n/**\n * Calls the specified function [block] with `this` value as its argument and returns `this` value.\n
*\n * For detailed usage information

```

see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#also).

```

*^@kotlin.internal.InlineOnly^@SinceKotlin("1.1")\npublic inline fun <T> T.also(block: (T) -> Unit): T {\n
contract {\n    callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n } \n block(this)\n return
this\n}\n\n/**\n * Calls the specified function [block] with `this` value as its argument and returns its result.\n *\n *
For detailed usage information see the documentation for [scope
functions](https://kotlinlang.org/docs/reference/scope-functions.html#let).\n *^@kotlin.internal.InlineOnly^public
inline fun <T, R> T.let(block: (T) -> R): R {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    } \n    return block(this)\n}\n\n/**\n * Returns `this` value if it satisfies the
given [predicate] or `null`, if it doesn't.\n *\n * For detailed usage information see the documentation for [scope
functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).\n
*^@kotlin.internal.InlineOnly^@SinceKotlin("1.1")\npublic inline fun <T> T.takeIf(predicate: (T) -> Boolean):
T? {\n    contract {\n        callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)\n    } \n    return if
(predicate(this)) this else null\n}\n\n/**\n * Returns `this` value if it _does not_ satisfy the given [predicate] or
`null`, if it does.\n *\n * For detailed usage information see the documentation for [scope
functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).\n
*^@kotlin.internal.InlineOnly^@SinceKotlin("1.1")\npublic inline fun <T> T.takeUnless(predicate: (T) ->
Boolean): T? {\n    contract {\n        callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)\n    } \n    return if
(!predicate(this)) this else null\n}\n\n/**\n * Executes the given function [action] specified number of [times].\n *\n *
A zero-based index of current iteration is passed as a parameter to
[action].\n *\n * @sample samples.misc.ControlFlow.repeat\n *^@kotlin.internal.InlineOnly^public inline fun
repeat(times: Int, action: (Int) -> Unit) {\n    contract { callsInPlace(action) }\n\n    for (index in 0 until times) {\n
action(index)\n    }\n}\n\n"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.comparisons\n\n/\n// NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js.*\n\n/**\n * Returns the greater
of two values.\n *\n * If values are equal, returns the first one.\n *^@kotlin.internal.InlineOnly^public actual fun <T :
Comparable<T>> maxOf(a: T, b: T): T {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two
values.\n *^@kotlin.internal.InlineOnly^public
actual inline fun maxOf(a: Byte, b: Byte): Byte {\n    return maxOf(a.toInt(),
b.toInt()).unsafeCast<Byte>()\n}\n\n/**\n * Returns the greater of two values.\n *^@kotlin.internal.InlineOnly^public
actual inline fun maxOf(a: Short, b: Short): Short {\n    return maxOf(a.toInt(), b.toInt()).unsafeCast<Short>()\n}\n\n/**\n * Returns the greater of two values.\n *^@kotlin.internal.InlineOnly^public
actual inline fun maxOf(a: Int, b: Int): Int {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the greater of two values.\n *^@kotlin.internal.Suppress("NOTHING_TO_INLINE")\npublic actual inline fun maxOf(a: Long, b:
Long): Long {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n *\n * If either value
is `NaN`, returns `NaN`.\n *^@kotlin.internal.InlineOnly^public actual inline fun
maxOf(a: Float, b: Float): Float {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the greater of two values.\n *\n * If either value is `NaN`, returns `NaN`.\n *^@kotlin.internal.InlineOnly^public actual inline fun
maxOf(a: Double, b: Double): Double {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the greater of three values.\n *\n * If there are multiple
equal maximal values, returns the first of them.\n *^@kotlin.internal.InlineOnly^public actual fun <T :
Comparable<T>> maxOf(a: T, b: T, c: T): T {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater
of three values.\n *^@kotlin.internal.InlineOnly^public actual inline fun maxOf(a: Byte,
b: Byte, c: Byte): Byte {\n    return JsMath.max(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()\n}\n\n/**\n *
Returns the greater of three values.\n *^@kotlin.internal.InlineOnly^public actual inline
fun maxOf(a: Short, b: Short, c: Short): Short {\n    return JsMath.max(a.toInt(), b.toInt(),

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c.toInt()).unsafeCast<Short>())\n\n/**\n
 * Returns the greater of three values.\n *@\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual
inline fun maxOf(a: Int, b: Int, c: Int): Int {\n    return JsMath.max(a, b, c)\n}\n\n/**\n * Returns the greater of three
values.\n *@\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Long, b: Long,
c: Long): Long {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of three values.\n * \n * If any
value is `NaN`, returns `NaN`.\n *@\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun
maxOf(a: Float, b: Float, c: Float): Float {\n    return JsMath.max(a, b, c)\n}\n\n/**\n * Returns the greater of three
values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n *@\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Double, b: Double, c:
Double): Double {\n    return JsMath.max(a, b, c)\n}\n\n/**\n * Returns the greater of the given values.\n *
\n * If there are multiple equal maximal values, returns the first of them.\n *@\n@SinceKotlin("1.4")\n\npublic actual
fun <T : Comparable<T>> maxOf(a: T, vararg other: T): T {\n    var max = a\n    for (e in other) max = maxOf(max,
e)\n    return max\n}\n\n/**\n * Returns the greater of the given values.\n *@\n@SinceKotlin("1.4")\n\npublic actual
fun maxOf(a: Byte, vararg other: Byte): Byte {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return
max\n}\n\n/**\n * Returns the greater of the given values.\n *@\n@SinceKotlin("1.4")\n\npublic actual fun maxOf(a:
Short, vararg other: Short): Short {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return
max\n}\n\n/**\n * Returns the greater of the given values.\n *@\n@SinceKotlin("1.4")\n\npublic actual fun maxOf(a:
Int, vararg other: Int): Int {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n
 * Returns the greater of the given values.\n *@\n@SinceKotlin("1.4")\n\npublic
actual fun maxOf(a: Long, vararg other: Long): Long {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n
    return max\n}\n\n/**\n * Returns the greater of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n *@\n@SinceKotlin("1.4")\n\npublic actual fun maxOf(a: Float, vararg other: Float): Float {\n    var max = a\n    for
(e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the greater of the given values.\n * \n * If any
value is `NaN`, returns `NaN`.\n *@\n@SinceKotlin("1.4")\n\npublic actual fun maxOf(a: Double, vararg other:
Double): Double {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns
the smaller of two values.\n * \n * If values are equal, returns the first one.\n *@\n@SinceKotlin("1.1")\n\npublic
actual fun <T : Comparable<T>> minOf(a: T, b: T): T {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the
smaller of two values.\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic
actual inline fun minOf(a: Byte, b: Byte): Byte {\n    return minOf(a.toInt(),
b.toInt()).unsafeCast<Byte>())\n}\n\n/**\n * Returns the smaller of two values.\n
*\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Short, b: Short): Short
{\n    return minOf(a.toInt(), b.toInt()).unsafeCast<Short>())\n}\n\n/**\n * Returns the smaller of two values.\n
*\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Int, b: Int): Int {\n
    return JsMath.min(a, b)\n}\n\n/**\n * Returns the smaller of two values.\n
*\n *@\n@SinceKotlin("1.1")\n\n@Suppress("NOTHING_TO_INLINE")\n\npublic actual inline fun minOf(a: Long, b:
Long): Long {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n * \n * If either value
is `NaN`, returns `NaN`.\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic actual inline fun
minOf(a: Float, b: Float): Float {\n    return JsMath.min(a, b)\n}\n\n/**\n * Returns the smaller of two values.\n
* \n * If either value is `NaN`, returns `NaN`.\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic
actual inline fun minOf(a: Double, b: Double): Double {\n    return JsMath.min(a, b)\n}\n\n/**\n * Returns the smaller
of three values.\n * \n * If there are multiple equal minimal values, returns the first of them.\n *@\n@SinceKotlin("1.1")\n\npublic actual fun <T :
Comparable<T>> minOf(a: T, b: T, c: T): T {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of
three values.\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Byte, b:
Byte, c: Byte): Byte {\n    return JsMath.min(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>())\n}\n\n/**\n * Returns
the smaller of three values.\n *@\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\npublic actual inline fun
minOf(a: Short, b: Short, c: Short): Short {\n    return JsMath.min(a.toInt(), b.toInt(),
c.toInt()).unsafeCast<Short>())\n}\n\n/**\n

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 * Returns the smaller of three values.\n *^n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual
inline fun minOf(a: Int, b: Int, c: Int): Int {\n    return JsMath.min(a, b, c)\n}\n\n/**\n * Returns the smaller of three
values.\n *^n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Long, b: Long,
c: Long): Long {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of three values.\n * \n * If any
value is `NaN`, returns `NaN`.\n *^n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun
minOf(a: Float, b: Float, c: Float): Float {\n    return JsMath.min(a, b, c)\n}\n\n/**\n * Returns the smaller of three
values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Double, b: Double, c:
Double): Double {\n    return JsMath.min(a, b, c)\n}\n\n/**\n * Returns the smaller of the given values.\n * \n *
If there are multiple equal minimal values, returns the first of them.\n *^n@SinceKotlin("1.4")\n\npublic actual fun
<T : Comparable<T>> minOf(a: T, vararg other: T): T {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n/**\n * Returns the smaller of the given values.\n *^n@SinceKotlin("1.4")\n\npublic actual fun
minOf(a: Byte, vararg other: Byte): Byte {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n *^n@SinceKotlin("1.4")\n\npublic actual fun minOf(a:
Short, vararg other: Short): Short {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n *^n@SinceKotlin("1.4")\n\npublic actual fun minOf(a:
Int, vararg other: Int): Int {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n/**\n *
Returns the smaller of the given values.\n *^n@SinceKotlin("1.4")\n\npublic actual
fun minOf(a: Long, vararg other: Long): Long {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n@SinceKotlin("1.4")\n\npublic actual fun minOf(a: Float, vararg other: Float): Float {\n    var min = a\n    for (e
in other) min = minOf(min, e)\n    return min\n}\n\n/**\n * Returns the smaller of the given values.\n * \n * If any
value is `NaN`, returns `NaN`.\n *^n@SinceKotlin("1.4")\n\npublic actual fun minOf(a: Double, vararg other:
Double): Double {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n"/**\n * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *^n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin\n\nimport kotlin.experimental.*\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@JvmInline\npublic
value class ULong @PublishedApi internal constructor(@PublishedApi internal val data: Long) :
Comparable<ULong> {\n    companion object {\n        /**\n         * A constant holding the minimum value an
instance of ULong can have.\n         *^n         public const val MIN_VALUE: ULong = ULong(0)\n         */\n        /**\n         * A constant holding the maximum value an instance of ULong can have.\n         *^n         public const val
MAX_VALUE: ULong = ULong(-1)\n         */\n        /**\n         * The number of bytes used to represent an instance of
ULong in a binary form.\n         *^n         public const val SIZE_BYTES: Int = 8\n         */\n        /**\n         * The number of
bits used to represent an instance of ULong in a binary form.\n         *^n         public const val SIZE_BITS: Int = 64\n         }\n         */\n        * Compares this value with the specified value for order.\n        * Returns zero if this value
is equal to the specified other value, a negative number if it's less than other,\n        * or a positive number if it's
greater than other.\n        *^n        @kotlin.internal.InlineOnly\n        public inline operator fun compareTo(other: UByte):
Int = this.compareTo(other.toULong())\n        /**\n         * Compares this value with the specified value for order.\n         *
Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n         * or a
positive number if it's greater than other.\n         *^n         @kotlin.internal.InlineOnly\n        public inline operator fun
compareTo(other: UShort): Int = this.compareTo(other.toULong())\n        /**\n         * Compares this value with the
specified value for order.\n         * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n         * or a positive number if it's greater than other.\n         *^n         @kotlin.internal.InlineOnly\n
        public inline operator fun compareTo(other:
UInt): Int = this.compareTo(other.toULong())\n        /**\n         * Compares this value with the specified value for
order.\n         * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n
    
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    * or a positive number if it's greater than other.\n    *^n    @kotlin.internal.InlineOnly\n
@Suppress(\\"OVERRIDE_BY_INLINE\\")\n    public override inline operator fun compareTo(other: ULong): Int =
ulongCompare(this.data, other.data)\n    /** Adds the other value to this value. *^n
@kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UByte): ULong = this.plus(other.toULong())\n
/** Adds the other value to this value. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other:
UShort): ULong = this.plus(other.toULong())\n    /** Adds the other value to this value. *^n
@kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UInt): ULong = this.plus(other.toULong())\n
/** Adds the other value to this value. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other:
ULong): ULong = ULong(this.data.plus(other.data))\n    /** Subtracts the other value from this value. *^n
@kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UByte): ULong =
this.minus(other.toULong())\n    /** Subtracts the other value from this value. *^n    @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UShort): ULong = this.minus(other.toULong())\n    /** Subtracts the other
value from this value. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UInt): ULong =
this.minus(other.toULong())\n    /** Subtracts the other value from this value. *^n    @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: ULong): ULong = ULong(this.data.minus(other.data))\n    /** Multiplies
this value by the other value. *^n    @kotlin.internal.InlineOnly\n    public inline operator
fun times(other: UByte): ULong = this.times(other.toULong())\n    /** Multiplies this value by the other value. *^n
@kotlin.internal.InlineOnly\n    public inline operator fun times(other: UShort): ULong =
this.times(other.toULong())\n    /** Multiplies this value by the other value. *^n    @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UInt): ULong = this.times(other.toULong())\n    /** Multiplies this value by
the other value. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: ULong): ULong =
ULong(this.data.times(other.data))\n    /** Divides this value by the other value, truncating the result to an integer
that is closer to zero. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun div(other: UByte): ULong =
this.div(other.toULong())\n    /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. *^n    @kotlin.internal.InlineOnly\n    public inline operator
fun div(other: UShort): ULong = this.div(other.toULong())\n    /** Divides this value by the other value, truncating
the result to an integer that is closer to zero. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun
div(other: UInt): ULong = this.div(other.toULong())\n    /** Divides this value by the other value, truncating the
result to an integer that is closer to zero. *^n    @kotlin.internal.InlineOnly\n    public inline operator fun div(other:
ULong): ULong = ulongDivide(this, other)\n    /**\n    * Calculates the remainder of truncating division of this
value by the other value.\n    * \n    * The result is always less than the divisor.\n    *^n
@kotlin.internal.InlineOnly\n    public inline operator fun rem(other: UByte): ULong = this.rem(other.toULong())\n
/**\n    * Calculates the remainder of truncating division of this value by the other value.\n    * \n    * The result is
always less than the divisor.\n    *^n    @kotlin.internal.InlineOnly\n
    public inline operator fun rem(other: UShort): ULong = this.rem(other.toULong())\n    /**\n    * Calculates the
remainder of truncating division of this value by the other value.\n    * \n    * The result is always less than the
divisor.\n    *^n    @kotlin.internal.InlineOnly\n    public inline operator fun rem(other: UInt): ULong =
this.rem(other.toULong())\n    /**\n    * Calculates the remainder of truncating division of this value by the other
value.\n    * \n    * The result is always less than the divisor.\n    *^n    @kotlin.internal.InlineOnly\n    public
inline operator fun rem(other: ULong): ULong = ulongRemainder(this, other)\n    /**\n    * Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.\n    * \n    * For unsigned types,
the results of flooring division and truncating division are the same.\n    *^n    @kotlin.internal.InlineOnly\n
public inline fun floorDiv(other: UByte): ULong
= this.floorDiv(other.toULong())\n    /**\n    * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.\n    * \n    * For unsigned types, the results of flooring division and
truncating division are the same.\n    *^n    @kotlin.internal.InlineOnly\n    public inline fun floorDiv(other:
UShort): ULong = this.floorDiv(other.toULong())\n    /**\n    * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.\n    * \n    * For unsigned types, the results of flooring division

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and truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): ULong = this.floorDiv(other.toULong())\n /**\n * Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division are the same.\n

*^n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong = div(other)\n\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun mod(other: UByte): UByte = this.mod(other.toULong()).toUByte()\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort = this.mod(other.toULong()).toUShort()\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n

* \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun mod(other: UInt): UInt = this.mod(other.toULong()).toInt()\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n *^n

@kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = rem(other)\n\n /**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n *^n @kotlin.internal.InlineOnly\n public inline operator fun inc(): ULong = ULong(data.inc())\n\n /**\n * Returns this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n *^n

@kotlin.internal.InlineOnly\n public inline operator fun dec(): ULong = ULong(data.dec())\n\n /** Creates a range from this value to the specified [other] value. *^n @kotlin.internal.InlineOnly\n public inline operator fun rangeTo(other: ULong): ULongRange = ULongRange(this, other)\n\n /**\n * Shifts this value left by the [bitCount] number of bits.\n * \n * Note that only the six lowest-order bits of the [bitCount] are used as the shift distance.\n * \n * The shift distance actually used is therefore always in the range `0..63`.\n *^n

@kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): ULong = ULong(data shl bitCount)\n\n /**\n * Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with zeros.\n * \n * Note that only the six lowest-order bits of the [bitCount] are used as the shift distance.\n * \n * The shift distance actually used is therefore always in the range `0..63`.\n

*^n @kotlin.internal.InlineOnly\n public inline infix fun shr(bitCount: Int): ULong = ULong(data ushr bitCount)\n\n /** Performs a bitwise AND operation between the two values. *^n @kotlin.internal.InlineOnly\n public inline infix fun and(other: ULong): ULong = ULong(this.data and other.data)\n\n /** Performs a bitwise OR operation between the two values. *^n @kotlin.internal.InlineOnly\n public inline infix fun or(other: ULong): ULong = ULong(this.data or other.data)\n\n /** Performs a bitwise XOR operation between the two values. *^n

@kotlin.internal.InlineOnly\n public inline infix fun xor(other: ULong): ULong = ULong(this.data xor other.data)\n\n /** Inverts the bits in this value. *^n @kotlin.internal.InlineOnly\n public inline fun inv(): ULong = ULong(data.inv())\n\n /**\n * Converts this [ULong] value to [Byte].\n * \n * If this value is less than or equals to [Byte.MAX_VALUE], the resulting `Byte` value represents\n

* the same numerical value as this `ULong`.\n * \n * The resulting `Byte` value is represented by the least significant 8 bits of this `ULong` value.\n * \n * Note that the resulting `Byte` value may be negative.\n *^n

@kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data.toByte()\n\n /**\n * Converts this [ULong] value to [Short].\n * \n * If this value is less than or equals to [Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as this `ULong`.\n * \n * The resulting `Short` value is represented by the least significant 16 bits of this `ULong` value.\n * \n * Note that the resulting `Short` value may be negative.\n

*^n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data.toShort()\n\n /**\n * Converts this [ULong] value to [Int].\n * \n * If this value is less than or equals to [Int.MAX_VALUE], the resulting `Int`

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value represents\n * the same numerical
value as this `ULong`. \n * \n * The resulting `Int` value is represented by the least significant 32 bits of this
`ULong` value. \n * Note that the resulting `Int` value may be negative. \n * \n @kotlin.internal.InlineOnly\n
public inline fun toInt(): Int = data.toInt()\n /** \n * Converts this [ULong] value to [Long]. \n * \n * If this
value is less than or equals to [Long.MAX_VALUE], the resulting `Long` value represents\n * the same
numerical value as this `ULong`. Otherwise the result is negative. \n * \n * The resulting `Long` value has the
same binary representation as this `ULong` value. \n * \n @kotlin.internal.InlineOnly\n public inline fun
toLong(): Long = data\n\n /** \n * Converts this [ULong] value to [UByte]. \n * \n * If this value is less than
or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this
`ULong`. \n * \n * The resulting `UByte` value
is represented by the least significant 8 bits of this `ULong` value. \n * \n @kotlin.internal.InlineOnly\n public
inline fun toUByte(): UByte = data.toUByte()\n /** \n * Converts this [ULong] value to [UShort]. \n * \n * If
this value is less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents\n * the same
numerical value as this `ULong`. \n * \n * The resulting `UShort` value is represented by the least significant 16
bits of this `ULong` value. \n * \n @kotlin.internal.InlineOnly\n public inline fun toUShort(): UShort =
data.toUShort()\n /** \n * Converts this [ULong] value to [UInt]. \n * \n * If this value is less than or equals
to [UInt.MAX_VALUE], the resulting `UInt` value represents\n * the same numerical value as this `ULong`. \n
*\n * The resulting `UInt` value is represented by the least significant 32 bits of this `ULong` value. \n * \n
@kotlin.internal.InlineOnly\n public inline
fun toUInt(): UInt = data.toUInt()\n /** Returns this value. * \n @kotlin.internal.InlineOnly\n public inline
fun toULong(): ULong = this\n\n /** \n * Converts this [ULong] value to [Float]. \n * \n * The resulting
value is the closest `Float` to this `ULong` value. \n * In case when this `ULong` value is exactly between two
`Float`s, \n * the one with zero at least significant bit of mantissa is selected. \n * \n
@kotlin.internal.InlineOnly\n public inline fun toFloat(): Float = this.toDouble().toFloat()\n /** \n * Converts
this [ULong] value to [Double]. \n * \n * The resulting value is the closest `Double` to this `ULong` value. \n *
In case when this `ULong` value is exactly between two `Double`s, \n * the one with zero at least significant bit of
mantissa is selected. \n * \n @kotlin.internal.InlineOnly\n public inline fun toDouble(): Double =
ulongToDouble(data)\n\n public override fun toString(): String = ulongToString(data)\n\n} \n\n/** \n
* Converts this [Byte] value to [ULong]. \n * \n * If this value is positive, the resulting `ULong` value represents the
same numerical value as this `Byte`. \n * \n * The least significant 8 bits of the resulting `ULong` value are the same
as the bits of this `Byte` value, \n * whereas the most significant 56 bits are filled with the sign bit of this value. \n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Byte.toULong(): ULong = ULong(this.toLong())\n\n /** \n * Converts this [Short] value to
[ULong]. \n * \n * If this value is positive, the resulting `ULong` value represents the same numerical value as this
`Short`. \n * \n * The least significant 16 bits of the resulting `ULong` value are the same as the bits of this `Short`
value, \n * whereas the most significant 48 bits are filled with the sign bit of this value. \n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public
inline fun Short.toULong(): ULong = ULong(this.toLong())\n\n /** \n * Converts this [Int] value to [ULong]. \n * \n *
If this value is positive, the resulting `ULong` value represents the same numerical value as this `Int`. \n * \n * The
least significant 32 bits of the resulting `ULong` value are the same as the bits of this `Int` value, \n * whereas the
most significant 32 bits are filled with the sign bit of this value. \n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Int.toULong(): ULong = ULong(this.toLong())\n\n /** \n * Converts this [Long] value to [ULong]. \n
*\n * If this value is positive, the resulting `ULong` value represents the same numerical value as this `Long`. \n *
*\n * The resulting `ULong` value has the same binary representation as this `Long` value. \n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public

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inline fun Long.toULong(): ULong = ULong(this)\n\n/**\n * Converts this [Float] value to [ULong].\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Float` value is negative or `NaN`, [ULong.MAX_VALUE] if it's bigger than `ULong.MAX_VALUE`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Float.toULong(): ULong = doubleToULong(this.toDouble())\n\n/**\n * Converts this [Double] value to [ULong].\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Double` value is negative or `NaN`, [ULong.MAX_VALUE] if it's bigger than `ULong.MAX_VALUE`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Double.toULong(): ULong = doubleToULong(this)\n","/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n/\n\nimport kotlin.random.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n\n/**\n * Returns 1st *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 1.\n
*\n@kotlin.internal.InlineOnly\n
public inline operator fun <T> List<T>.component1(): T {\n    return get(0)\n}\n\n/**\n * Returns 2nd *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 2.\n
*\n@kotlin.internal.InlineOnly\n
public inline operator fun <T> List<T>.component2(): T {\n    return get(1)\n}\n\n/**\n * Returns 3rd *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 3.\n
*\n@kotlin.internal.InlineOnly\n
public inline operator fun <T> List<T>.component3(): T {\n    return get(2)\n}\n\n/**\n * Returns 4th *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 4.\n
*\n@kotlin.internal.InlineOnly\n
public inline operator fun <T> List<T>.component4(): T {\n    return get(3)\n}\n\n/**\n * Returns 5th *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 5.\n
*\n@kotlin.internal.InlineOnly\n
public inline operator fun <T> List<T>.component5(): T {\n    return get(4)\n}\n\n/**\n * Returns `true` if [element] is found in the collection.\n
*\n@kotlin.internal.OnlyInputTypes T> Iterable<T>.contains(element: T): Boolean {\n    if (this is Collection)\n        return contains(element)\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this collection.\n
*\n * @sample samples.collections.Collections.Elements.elementAt\n
*\npublic fun <T> Iterable<T>.elementAt(index: Int): T {\n    if (this is List)\n        return get(index)\n    return elementAtOrElse(index) {\n        throw IndexOutOfBoundsException("Collection doesn't contain element at index $index.")\n    }\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this list.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@kotlin.internal.InlineOnly\n
public inline fun <T> List<T>.elementAt(index: Int): T {\n    return get(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this collection.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\npublic fun <T> Iterable<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    if (this is List)\n        return this.getOrElse(index, defaultValue)\n    if (index < 0)\n        return defaultValue(index)\n    val iterator = iterator()\n    var count = 0\n    while (iterator.hasNext()) {\n        val element = iterator.next()\n        if (index == count++)\n            return element\n    }\n    return defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this list.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\n
public inline fun <T> List<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the

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[index] is out of bounds of this collection.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\npublic fun <T> Iterable<T>.elementAtOrNull(index: Int): T? {\n  if (this is List)\n    return
this.getOrNull(index)\n  if (index < 0)\n    return null\n  val iterator = iterator()\n  var count = 0\n  while
(iterator.hasNext()) {\n    val element = iterator.next()\n    if (index == count++)\n      return element\n  }\n  return null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this
list.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> List<T>.elementAtOrNull(index: Int): T? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.find(predicate:
(T) -> Boolean): T? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Iterable<T>.findLast(predicate: (T) -> Boolean): T? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
List<T>.findLast(predicate: (T) -> Boolean): T? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the first
element.\n * \n * @throws NoSuchElementException if the collection is empty.\n * \npublic fun <T>
Iterable<T>.first(): T {\n  when (this) {\n    is List -> return this.first()\n    else -> {\n      val iterator =
iterator()\n      if (!iterator.hasNext())\n        throw NoSuchElementException("Collection is empty.")\n      return iterator.next()\n    }\n  }\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the list is empty.\n
*\npublic fun <T> List<T>.first(): T {\n  if (isEmpty())\n    throw NoSuchElementException("List is
empty.")\n  return this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n * \npublic inline fun <T> Iterable<T>.first(predicate: (T)
-> Boolean): T {\n  for (element in this) if (predicate(element)) return element\n  throw
NoSuchElementException("Collection contains no element matching the predicate.")\n}\n\n/**\n * Returns the
first non-null value produced by [transform] function being applied to elements of this collection in iteration order,\n
* or throws [NoSuchElementException] if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Iterable<T>.firstNotNullOf(transform: (T) -> R?): R {\n  return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the collection was transformed to a non-null value.")\n}\n\n/**\n *
Returns the first non-null value produced by [transform] function being applied to elements of this collection in
iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Iterable<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n  for (element in this) {\n    val result =
transform(element)\n    if (result != null) {\n      return result\n    }\n  }\n  return null\n}\n\n/**\n *
Returns the first element, or `null` if the collection is
empty.\n * \npublic fun <T> Iterable<T>.firstOrNull(): T? {\n  when (this) {\n    is List -> {\n      if
(isEmpty())\n        return null\n      else\n        return this[0]\n    }\n    else -> {\n      val iterator
= iterator()\n      if (!iterator.hasNext())\n        return null\n      return iterator.next()\n    }\n  }\n}\n\n/**\n * Returns the first element, or `null` if the list is empty.\n * \npublic fun <T> List<T>.firstOrNull():
T? {\n  return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate],
or `null` if element was not found.\n * \npublic inline fun <T> Iterable<T>.firstOrNull(predicate: (T) -> Boolean):
T? {\n  for (element in this) if (predicate(element)) return element\n  return null\n}\n\n/**\n * Returns an element

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at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this list.\n
*\n@kotlin.internal.InlineOnly\npublic
inline fun <T> List<T>.getOrElse(index: Int, defaultValue: (Int) -> T): T {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this list.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*\npublic fun <T> List<T>.getOrNull(index: Int): T? {\n    return if (index >= 0 && index <= lastIndex) get(index)
else null\n}\n\n/**\n * Returns first index of [element], or -1 if the collection does not contain element.\n */\npublic
fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.indexOf(element: T): Int {\n    if (this is List) return
this.indexOf(element)\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if (element
== item)\n            return index\n        index++\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1
if the list does not contain
element.\n */\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes
precedence in some cases\npublic fun <@kotlin.internal.OnlyInputTypes T> List<T>.indexOf(element: T): Int {\n    return
indexOf(element)\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
collection does not contain such element.\n */\npublic inline fun <T> Iterable<T>.indexOfFirst(predicate: (T) ->
Boolean): Int {\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if
(predicate(item))\n            return index\n        index++\n    }\n    return -1\n}\n\n/**\n * Returns index of the first
element matching the given [predicate], or -1 if the list does not contain such element.\n */\npublic inline fun <T>
List<T>.indexOfFirst(predicate: (T) -> Boolean): Int {\n    var index = 0\n    for (item in this) {\n        if
(predicate(item))\n            return index\n        index++\n    }\n    return -1\n}\n\n/**\n * Returns index of the last
element matching the given [predicate], or -1 if the collection does not contain such
element.\n */\npublic inline fun <T> Iterable<T>.indexOfLast(predicate: (T) -> Boolean): Int {\n    var lastIndex = -
1\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if (predicate(item))\n
lastIndex = index\n        index++\n    }\n    return lastIndex\n}\n\n/**\n * Returns index of the last element matching
the given [predicate], or -1 if the list does not contain such element.\n */\npublic inline fun <T>
List<T>.indexOfLast(predicate: (T) -> Boolean): Int {\n    val iterator = this.listIterator(size)\n    while
(iterator.hasPrevious()) {\n        if (predicate(iterator.previous())) {\n            return iterator.nextIndex()\n        }\n
}\n    return -1\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the collection
is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*/\npublic fun <T> Iterable<T>.last(): T {\n    when (this) {\n        is List -> return this.last()\n        else -> {\n
val iterator = iterator()\n            if (!iterator.hasNext())\n                throw NoSuchElementException("Collection is
empty.")\n            var last = iterator.next()\n            while (iterator.hasNext())\n                last = iterator.next()\n
return last\n        }\n    }\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the
list is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun <T> List<T>.last(): T {\n
if (isEmpty())\n    throw NoSuchElementException("List is empty.")\n    return this[lastIndex]\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such
element is found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun <T>
Iterable<T>.last(predicate:
(T) -> Boolean): T {\n    var last: T? = null\n    var found = false\n    for (element in this) {\n        if
(predicate(element)) {\n            last = element\n            found = true\n        }\n    }\n    if (!found) throw
NoSuchElementException("Collection contains no element matching the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return last as T\n}\n\n/**\n * Returns the last element matching the
given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> List<T>.last(predicate: (T) -> Boolean): T {\n
val iterator = this.listIterator(size)\n    while (iterator.hasPrevious()) {\n        val element = iterator.previous()\n
if (predicate(element)) return element\n    }\n    throw NoSuchElementException("List contains no element
matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the collection does not

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```

contain element.\n */\npublic fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.lastIndexOf(element: T): Int
{\n if (this is List) return this.lastIndexOf(element)\n var lastIndex = -1\n var index = 0\n for (item in this)
{\n checkIndexOverflow(index)\n if (element == item)\n lastIndex = index\n index++\n }\n
return lastIndex\n}\n\n/**\n * Returns last index of [element], or -1 if the list does not contain element.\n
*/\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\npublic fun <@kotlin.internal.OnlyInputTypes T> List<T>.lastIndexOf(element: T): Int {\n return
lastIndexOf(element)\n}\n\n/**\n * Returns the last element, or `null` if the collection is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> Iterable<T>.lastOrNull(): T? {\n when (this)
{\n is List -> return if (isEmpty()) null else this[size - 1]\n else -> {\n
val iterator = iterator()\n if (!iterator.hasNext())\n return null\n var last =
iterator.next()\n while (iterator.hasNext())\n last = iterator.next()\n return last\n }\n
}\n}\n\n/**\n * Returns the last element, or `null` if the list is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> List<T>.lastOrNull(): T? {\n return if
(isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if
no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun
<T> Iterable<T>.lastOrNull(predicate: (T) -> Boolean): T? {\n var last: T? = null\n for (element in this) {\n
if (predicate(element)) {\n last = element\n }\n }\n return last\n}\n\n/**\n * Returns the last element
matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun <T>
List<T>.lastOrNull(predicate: (T) -> Boolean): T? {\n val iterator = this.listIterator(size)\n while
(iterator.hasPrevious()) {\n val element = iterator.previous()\n if (predicate(element)) return element\n }\n
return null\n}\n\n/**\n * Returns a random element from this collection.\n * \n * @throws
NoSuchElementException if this collection is empty.\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>.random(): T {\n
return random(Random)\n}\n\n/**\n * Returns a random element from this collection using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this collection is empty.\n
*/\n@SinceKotlin("1.3")\npublic fun <T> Collection<T>.random(random: Random): T {\n if (isEmpty())\n throw
NoSuchElementException("Collection is empty.")\n return elementAt(random.nextInt(size))\n}\n\n/**\n * Returns a
random element from this collection, or `null` if this collection is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Collection<T>.randomOrNull(): T? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this collection using the specified source of randomness, or `null` if this collection is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T>
Collection<T>.randomOrNull(random: Random): T? {\n if (isEmpty())\n return null\n return
elementAt(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the collection is
empty or has more than one element.\n */\npublic fun <T> Iterable<T>.single(): T {\n when (this) {\n is List -
-> return this.single()\n else -> {\n val iterator = iterator()\n if (!iterator.hasNext())\n
throw NoSuchElementException("Collection is empty.")\n val single = iterator.next()\n if
(iterator.hasNext())\n throw IllegalArgumentException("Collection has more than one element.")\n
return single\n }\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the list is empty or
has more than one element.\n */\npublic fun <T> List<T>.single(): T {\n return when (size) {\n 0 -> throw
NoSuchElementException("List is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("List has more than one element.")\n }\n}\n\n/**\n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.\n
*/\npublic inline fun <T> Iterable<T>.single(predicate: (T) -> Boolean): T {\n var single: T? = null\n var found = false\n
for (element in this) {\n if (predicate(element)) {\n if
(found) throw IllegalArgumentException("Collection contains more than one matching element.")\n single
= element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Collection contains

```



```

no element matching the predicate.\n @SuppressWarnings("UNCHECKED_CAST")\n return single as T\n}\n\n/**\n * Returns single element, or `null` if the collection is empty or has more than one element.\n */\npublic fun <T>\nIterable<T>.singleOrNull(): T? {\n    when (this) {\n        is List -> return if (size == 1) this[0] else null\n        else ->\n        {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n                return null\n            val single =\n                iterator.next()\n            if (iterator.hasNext())\n                return null\n            return single\n        }\n    }\n}\n\n/**\n * Returns single element, or `null` if the list is empty or has more than one element.\n */\npublic fun <T>\nList<T>.singleOrNull(): T?\n{\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single element matching the given [predicate],\n * or `null` if element was not found or more than one element was found.\n */\npublic inline fun <T>\nIterable<T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single: T? = null\n    var found = false\n    for\n    (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a list containing all\n * elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample\n * samples.collections.Collections.Transformations.drop\n */\npublic fun <T> Iterable<T>.drop(n: Int): List<T> {\n    require(n >= 0) {\n        "Requested element count $n is less than zero.\n    }\n    if (n == 0) return toList()\n    val list:\n    ArrayList<T>\n    if (this is Collection<*>) {\n        val\n        resultSize = size - n\n        if (resultSize <= 0)\n            return emptyList()\n        if (resultSize == 1)\n            return\n            listOf(last())\n        list = ArrayList<T>(resultSize)\n        if (this is List<T>) {\n            if (this is RandomAccess)\n                {\n                    for (index in n until size)\n                        list.add(this[index])\n                }\n            else {\n                for (item in\n                listIterator(n))\n                    list.add(item)\n            }\n            return list\n        }\n    }\n    else {\n        list =\n        ArrayList<T>()\n        var count = 0\n        for (item in this) {\n            if (count >= n) list.add(item) else ++count\n        }\n        return list.optimizeReadOnlyList()\n    }\n}\n\n/**\n * Returns a list containing all elements except last [n]\n * elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample\n * samples.collections.Collections.Transformations.drop\n */\npublic fun <T> List<T>.dropLast(n: Int): List<T> {\n    require(n >= 0) {\n        "Requested element count $n is less than zero.\n    }\n    return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n * samples.collections.Collections.Transformations.drop\n */\npublic inline fun <T>\nList<T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n    if (!isEmpty()) {\n        val iterator =\n        listIterator(size)\n        while (iterator.hasPrevious()) {\n            if (!predicate(iterator.previous()))\n                return\n                take(iterator.nextIndex() + 1)\n        }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing\n * all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n * samples.collections.Collections.Transformations.drop\n */\npublic inline fun <T> Iterable<T>.dropWhile(predicate:\n(T) -> Boolean): List<T> {\n    var yielding = false\n    val list = ArrayList<T>()\n    for (item in this)\n        if\n        (yielding)\n            list.add(item)\n        else if (!predicate(item)) {\n            list.add(item)\n            yielding = true\n        }\n    return list\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample\n * samples.collections.Collections.Filtering.filter\n */\npublic inline fun <T> Iterable<T>.filter(predicate: (T)\n-> Boolean): List<T> {\n    return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only\n * elements matching the given [predicate].\n * \n * @param [predicate] function that takes the index of an element and the\n * element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n * samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun <T>\nIterable<T>.filterIndexed(predicate: (index: Int, T) -> Boolean): List<T> {\n    return\n    filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate] to\n * the given\n * [destination].\n * \n * @param [predicate] function that takes the index of an element and the element itself\n * and\n * returns the result of predicate evaluation on the element.\n * \n * @sample\n * samples.collections.Collections.Filtering.filterIndexedTo\n */\npublic inline fun <T, C : MutableCollection<in T>>\nIterable<T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C {\n    forEachIndexed { index,\n
```

```

element ->\n    if (predicate(index, element)) destination.add(element)\n    }\n    return destination\n}\n\n/**\n *
Returns a list containing all elements that are instances of specified type parameter R.\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstance\n */\npublic inline fun <reified R>
Iterable<*>.filterIsInstance(): List<@kotlin.internal.NoInfer R> {\n    return
filterIsInstanceTo(ArrayList<R>())\n}\n\n/**\n * Appends all elements that are instances of specified type
parameter R to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstanceTo\n
*/\npublic inline fun <reified R, C : MutableCollection<in R>> Iterable<*>.filterIsInstanceTo(destination: C): C
{\n    for (element in this) if (element is R) destination.add(element)\n    return destination\n}\n\n/**\n * Returns a
list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun <T> Iterable<T>.filterNot(predicate: (T) ->
Boolean): List<T> {\n    return filterNotTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing all
elements that are not `null`.\n * \n * @sample samples.collections.Collections.Filtering.filterNotNull\n */\npublic
fun <T : Any> Iterable<T?>.filterNotNull(): List<T> {\n    return filterNotNullTo(ArrayList<T>())\n}\n\n/**\n *
Appends all elements that are not `null` to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNullTo\n */\npublic fun <C : MutableCollection<in
T>, T : Any> Iterable<T?>.filterNotNullTo(destination: C): C {\n    for (element in this) if (element != null)
destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not matching the given
[predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*/\npublic inline fun <T, C : MutableCollection<in T>> Iterable<T>.filterNotTo(destination: C, predicate: (T) ->
Boolean): C {\n    for (element in this) if (!predicate(element)) destination.add(element)\n    return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n */\npublic inline fun <T, C : MutableCollection<in
T>> Iterable<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n    for (element in this) if
(predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Returns a list containing elements
at indices in the specified [indices] range.\n * \n */\npublic fun <T> List<T>.slice(indices: IntRange): List<T> {\n    if
(indices.isEmpty()) return listOf()\n    return this.subList(indices.start, indices.endInclusive + 1).toList()\n}\n\n/**\n
* Returns a list containing elements at specified [indices].\n * \n */\npublic fun <T> List<T>.slice(indices:
Iterable<Int>): List<T> {\n    val size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n
val list = ArrayList<T>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n
* Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n */\npublic fun <T> Iterable<T>.take(n: Int):
List<T> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return
emptyList()\n    if (this is Collection<T>) {\n        if (n >=
size) return toList()\n        if (n == 1) return listOf(first())\n    }\n    var count = 0\n    val list = ArrayList<T>(n)\n
for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return
list.optimizeReadOnlyList()\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic fun <T> List<T>.takeLast(n: Int): List<T> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val size =
size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(last())\n    val list = ArrayList<T>(n)\n    if (this is
RandomAccess) {\n        for (index in size - n until size)\n            list.add(this[index])\n    } else {\n        for (item in
listIterator(size - n))\n            list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns
a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\npublic inline fun <T> List<T>.takeLastWhile(predicate:
(T) -> Boolean): List<T> {\n    if (isEmpty())\n        return emptyList()\n    val iterator = listIterator(size)\n    while
(iterator.hasPrevious()) {\n        if (!predicate(iterator.previous())) {\n            iterator.next()\n            val
expectedSize = size - iterator.nextIndex()\n            if (expectedSize == 0) return emptyList()\n            return

```


elements of this collection.

```

public fun Collection<Boolean>.toBooleanArray(): BooleanArray {
    val result = BooleanArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Byte containing all of the elements of this collection.

```

public fun Collection<Byte>.toByteArray(): ByteArray {
    val result = ByteArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Char containing all of the elements of this collection.

```

public fun Collection<Char>.toCharArray(): CharArray {
    val result = CharArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Double containing all of the elements of this collection.

```

public fun Collection<Double>.toDoubleArray(): DoubleArray {
    val result = DoubleArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Float containing all of the elements of this collection.

```

public fun Collection<Float>.toFloatArray(): FloatArray {
    val result = FloatArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Int containing all of the elements of this collection.

```

public fun Collection<Int>.toIntArray(): IntArray {
    val result = IntArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Long containing all of the elements of this collection.

```

public fun Collection<Long>.toLongArray(): LongArray {
    val result = LongArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns an array of Short containing all of the elements of this collection.

```

public fun Collection<Short>.toShortArray(): ShortArray {
    val result = ShortArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

* Returns a [Map] containing key-value pairs provided by [transform] function applied to elements of the given collection. * If any of two pairs would have the same key the last one gets added to the map. * The returned map preserves the entry iteration order of the original collection.

```

@sample samples.collections.Collections.Transformations.associate
public inline fun <T, K, V> Iterable<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {
    val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity), transform)
}

```

* Returns a [Map] containing the elements from the given collection indexed by the key returned from [keySelector] function applied to each element. * If any two elements would have the same key returned by [keySelector] the last one gets added to the map. * The returned map preserves the entry iteration order of the original collection.

```

@sample samples.collections.Collections.Transformations.associateBy
public inline fun <T, K> Iterable<T>.associateBy(keySelector: (T) -> K): Map<K, T> {
    val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, T>(capacity), keySelector)
}

```

* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given collection. * If any two elements would have the same key returned by [keySelector] the last one gets added to the map. * The returned map preserves the entry iteration order of the original collection.

```

@sample samples.collections.Collections.Transformations.associateByWithValueTransform
public inline fun <T, K, V> Iterable<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {
    val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)
}

```

* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given collection and value is the element itself. * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

```

@sample samples.collections.Collections.Transformations.associateByTo
public inline fun <T, K, M : MutableMap<in K, in T>> Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K): M {
    for (element in this)
        destination.put(keySelector(element), element)
    return destination
}

```

* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function and

value is provided by the [valueTransform] function applied to elements of the given collection.

If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

@sample samples.collections.Collections.Transformations.associateByToWithValueTransform

```

*public inline fun <T, K, V, M : MutableMap<in K, in V>> Iterable<T>.associateByTo(destination: M,
keySelector: (T) -> K, valueTransform: (T) -> V): M {
    for (element in this) {
        destination.put(keySelector(element), valueTransform(element))
    }
    return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs provided by [transform] function applied to each element of the given collection.

If any of two pairs would have the same key the last one gets added to the map.

@sample samples.collections.Collections.Transformations.associateTo

```

*public inline fun <T, K, V, M : MutableMap<in K, in V>> Iterable<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {
    for (element in this) {
        destination += transform(element)
    }
    return destination
}

```

Returns a [Map] where keys are elements from the given collection and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original collection.

@sample samples.collections.Collections.Transformations.associateWith

```

*SinceKotlin("1.3")
public inline fun <K, V> Iterable<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {
    val result = LinkedHashMap<K, V>(mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given collection, where key is the element itself and value is provided by the [valueSelector] function applied to that key.

If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*SinceKotlin("1.3")
public inline fun <K, V, M : MutableMap<in K, in V>> Iterable<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

```

Appends all elements to the given [destination] collection.

```

public fun <T, C : MutableCollection<in T>> Iterable<T>.toCollection(destination: C): C {
    for (item in this) {
        destination.add(item)
    }
    return destination
}

```

Returns a new [HashSet] of all elements.

```

public fun <T> Iterable<T>.toHashSet(): HashSet<T> {
    return toCollection(HashSet<T>(mapCapacity(collectionSizeOrDefault(12))))
}

```

Returns a [List] containing all elements.

```

public fun <T> Iterable<T>.toList(): List<T> {
    if (this is Collection) {
        return when (size) {
            0 -> emptyList()
            1 -> listOf(if (this is List) get(0) else iterator().next())
            else -> this.toMutableList()
        }
    }
    return this.toMutableList().optimizeReadOnlyList()
}

```

Returns a new [MutableList] filled with all elements of this collection.

```

public fun <T> Iterable<T>.toMutableList(): MutableList<T> {
    if (this is Collection<T>) {
        return this.toMutableList()
    }
    return toCollection(ArrayList<T>())
}

```

Returns a new [MutableList] filled with all elements of this collection.

```

public fun <T> Collection<T>.toMutableList(): MutableList<T> {
    return ArrayList(this)
}

```

Returns a [Set] of all elements.

The returned set preserves the element iteration order of the original collection.

```

public fun <T> Iterable<T>.toSet(): Set<T> {
    if (this is Collection) {
        return when (size) {
            0 -> emptySet()
            1 -> setOf(if (this is List) this[0] else iterator().next())
            else -> toCollection(LinkedHashSet<T>(mapCapacity(size)))
        }
    }
    return toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()
}

```

Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original collection.

@sample samples.collections.Collections.Transformations.flatMap

```

public inline fun <T, R> Iterable<T>.flatMap(transform: (T) -> Iterable<R>): List<R> {
    return flatMapTo(ArrayList<R>(), transform)
}

```

Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original collection.

@sample

```

samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic inline fun <T, R>
Iterable<T>.flatMap(transform: (T) -> Sequence<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results
of [transform] function being invoked on each element\n * and its index in the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original collection.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original collection, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform: (index:
Int, T) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original collection, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npu
blic inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original collection, to the given [destination].\n *\npublic inline fun <T, R, C : MutableCollection<in
R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n    for (element in this) {\n        val
list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each element of original collection, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequenceTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Groups elements of the original collection by the key returned by the given [keySelector]
function\n * applied to each element and returns a map where each group key is associated with a list of
corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the
original collection.\n * \n *
@sample samples.collections.Collections.Transformations.groupBy\n *\npublic inline fun <T, K>
Iterable<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {\n    return groupByTo(LinkedHashMap<K,

```

```

MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to
each element of the original collection\n * by the key returned by the given [keySelector] function applied to the
element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The
returned map preserves the entry iteration order of the keys produced from the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <T, K, V>
Iterable<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {\n    return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups elements
of the original collection by the key
returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each
group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n *
@sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <T, K, M :
MutableMap<in K, MutableList<T>>> Iterable<T>.groupByTo(destination: M, keySelector: (T) -> K): M {\n    for
(element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) { ArrayList<T>()
}\n        list.add(element)\n    }\n    return destination\n}\n\n/**\n * Groups values returned by the [valueTransform]
function applied to each element of the original collection\n * by the key returned by the given [keySelector]
function applied to the element\n * and puts to the [destination] map each group key associated with a list of
corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*/\npublic inline fun <T, K, V, M : MutableMap<in K, MutableList<V>>> Iterable<T>.groupByTo(destination: M,
keySelector: (T) -> K, valueTransform: (T) -> V): M {\n    for (element in this) {\n        val key =
keySelector(element)\n        val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n    }\n    return destination\n}\n\n/**\n * Creates a [Grouping] source from a
collection to be used later with one of group-and-fold operations\n * using the specified [keySelector] function to
extract a key from each element.\n * \n * @sample samples.collections.Grouping.groupingByEachCount\n
*/\n@SinceKotlin("1.1")\npublic inline fun <T, K> Iterable<T>.groupingBy(crossinline keySelector: (T) -> K):
Grouping<T, K> {\n    return object : Grouping<T, K> {\n        override fun sourceIterator(): Iterator<T> =
this@groupingBy.iterator()\n        override fun keyOf(element: T): K = keySelector(element)\n
    }\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element
in the original collection.\n * \n * @sample samples.collections.Collections.Transformations.map\n */\npublic inline
fun <T, R> Iterable<T>.map(transform: (T) -> R): List<R> {\n    return
mapTo(ArrayList<R>(collectionSizeOrDefault(10)), transform)\n}\n\n/**\n * Returns a list containing the results of
applying the given [transform] function\n * to each element and its index in the original collection.\n * @param
[transform] function that takes the index of an element and the element itself\n * and returns the result of the
transform applied to the element.\n */\npublic inline fun <T, R> Iterable<T>.mapIndexed(transform: (index: Int, T)
-> R): List<R> {\n    return mapIndexedTo(ArrayList<R>(collectionSizeOrDefault(10)), transform)\n}\n\n/**\n *
Returns a list containing only the non-null results of applying the given [transform] function\n * to each element and
its index
in the original collection.\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n */\npublic inline fun <T, R : Any>
Iterable<T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): List<R> {\n    return
mapIndexedNotNullTo(ArrayList<R>(), transform)\n}\n\n/**\n * Applies the given [transform] function to each
element and its index in the original collection\n * and appends only the non-null results to the given [destination].\n
* @param [transform] function that takes the index of an element and the element itself\n * and returns the result of
the transform applied to the element.\n */\npublic inline fun <T, R : Any, C : MutableCollection<in R>>
Iterable<T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {\n    forEachIndexed {
index, element -> transform(index, element)?.let { destination.add(it) } }\n    return destination\n}\n\n/**\n *
Applies the given

```

[transform] function to each element and its index in the original collection and appends the results to the given [destination].

```

@sample samples.collections.Collections.Transformations.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(checkIndexOverflow(index++), item))
    return destination
}

```

Returns a list containing only the non-null results of applying the given [transform] function to each element in the original collection.

```

@sample samples.collections.Collections.Transformations.mapNotNull
public inline fun <T, R : Any> Iterable<T>.mapNotNull(transform: (T) -> R?): List<R> {
    return mapNotNullTo(ArrayList<R>(), transform)
}

```

Applies the given [transform] function to each element in the original collection and appends only the non-null results to the given [destination].

```

public inline fun <T, R : Any, C : MutableCollection<in R>> Iterable<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {
    forEach { element -> transform(element)?.let { destination.add(it) } }
    return destination
}

```

Applies the given [transform] function to each element of the original collection and appends the results to the given [destination].

```

public inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.mapTo(destination: C, transform: (T) -> R): C {
    for (item in this)
        destination.add(transform(item))
    return destination
}

```

Returns a lazy [Iterable] that wraps each element of the original collection into an [IndexedValue] containing the index of that element and the element itself.

```

public fun <T> Iterable<T>.withIndex(): Iterable<IndexedValue<T>> {
    return IndexingIterable { iterator() }
}

```

Returns a list containing only distinct elements from the given collection.

```

@sample samples.collections.Collections.Transformations.distinctAndDistinctBy
public fun <T> Iterable<T>.distinct(): List<T> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only elements from the given collection having distinct keys returned by the given [selector] function.

```

@sample samples.collections.Collections.Transformations.distinctAndDistinctBy
public inline fun <T, K> Iterable<T>.distinctBy(selector: (T) -> K): List<T> {
    val set = HashSet<K>()
    val list = ArrayList<T>()
    for (e in this) {
        val key = selector(e)
        if (set.add(key))
            list.add(e)
    }
    return list
}

```

Returns a set containing all elements that are contained by both this collection and the specified collection.

```

@sample samples.collections.Collections.Transformations.intersect
public infix fun <T> Iterable<T>.intersect(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

Returns a set containing all elements that are contained by this collection and not contained by the specified collection.

```

@sample samples.collections.Collections.Transformations.subtract
public infix fun <T> Iterable<T>.subtract(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}

```

Returns a new [MutableSet] containing all distinct elements from the given collection.

```

@sample samples.collections.Collections.Transformations.toMutableSet
public fun <T> Iterable<T>.toMutableSet(): MutableSet<T> {
    return when (this) {
        is Collection<T> -> LinkedHashSet(this)
        else -> toCollection(LinkedHashSet<T>())
    }
}

```

Returns a set containing all distinct elements from both collections.

```

@sample samples.collections.Collections.Transformations.union
public infix fun <T> Iterable<T>.union(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()

```



```

    set.addAll(other)\n    return set\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.all\n *\npublic inline fun <T> Iterable<T>.all(predicate: (T) -
> Boolean): Boolean {\n    if (this is Collection && isEmpty()) return true\n    for (element in this) if
(!predicate(element)) return false\n    return true\n}\n\n/**\n * Returns `true` if collection has at least one element.\n
*\n * @sample samples.collections.Collections.Aggregates.any\n *\npublic fun <T> Iterable<T>.any(): Boolean
{\n    if (this is Collection) return !isEmpty()\n    return iterator().hasNext()\n}\n\n/**\n * Returns `true` if at least
one element matches the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic inline fun <T>
Iterable<T>.any(predicate: (T) -> Boolean): Boolean {\n    if (this is Collection && isEmpty()) return false\n    for
(element in this) if (predicate(element))
return true\n    return false\n}\n\n/**\n * Returns the number of elements in this collection.\n *\npublic fun <T>
Iterable<T>.count(): Int {\n    if (this is Collection) return size\n    var count = 0\n    for (element in this)
checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Returns the number of elements in this collection.\n
*\n * @kotlinter.internal.InlineOnly\npublic inline fun <T> Collection<T>.count(): Int {\n    return size\n}\n\n/**\n *
Returns the number of elements matching the given [predicate].\n *\npublic inline fun <T>
Iterable<T>.count(predicate: (T) -> Boolean): Int {\n    if (this is Collection && isEmpty()) return 0\n    var count =
0\n    for (element in this) if (predicate(element)) checkCountOverflow(++count)\n    return count\n}\n\n/**\n *
Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator
value and each element.\n * \n * Returns the specified [initial] value if the collection
is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates
the next accumulator value.\n *\npublic inline fun <T, R> Iterable<T>.fold(initial: R, operation: (acc: R, T) -> R):
R {\n    var accumulator = initial\n    for (element in this) accumulator = operation(accumulator, element)\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original collection.\n * \n * Returns the
specified [initial] value if the collection is empty.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n
*\npublic inline fun <T, R> Iterable<T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {\n    var
index = 0\n    var accumulator = initial\n    for (element in this)
accumulator = operation(checkIndexOverflow(index++), accumulator, element)\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each element and
current accumulator value.\n * \n * Returns the specified [initial] value if the list is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value, and calculates the next accumulator
value.\n *\npublic inline fun <T, R> List<T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {\n    var
accumulator = initial\n    if (!isEmpty()) {\n        val iterator = listIterator(size)\n        while (iterator.hasPrevious())
{\n            accumulator = operation(iterator.previous(), accumulator)\n        }\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element with its index in the original list and current accumulator value.\n
*\n * \n * Returns the specified [initial] value if the list is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator
value.\n *\npublic inline fun <T, R> List<T>.foldRightIndexed(initial: R, operation: (index: Int, T, acc: R) -> R): R
{\n    var accumulator = initial\n    if (!isEmpty()) {\n        val iterator = listIterator(size)\n        while
(iterator.hasPrevious()) {\n            val index = iterator.previousIndex()\n            accumulator = operation(index,
iterator.previous(), accumulator)\n        }\n    }\n    return accumulator\n}\n\n/**\n * Performs the given [action] on
each element.\n *\n * @kotlinter.internal.HidesMembers\npublic inline fun <T> Iterable<T>.forEach(action: (T) ->
Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element,
providing sequential index with the element.\n * \n * @param [action] function
that takes the index of an element and the element itself\n * and performs the action on the element.\n *\npublic
inline fun <T> Iterable<T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {\n    var index = 0\n    for (item in

```

```

this) action(checkIndexOverflow(index++), item)\n}\n\n/**\n * Returns the largest element.\n * \n * If any of
elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Double>.max(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n * \n *
If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Float>.max(): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n * \n *
@throws NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Iterable<T>.max(): T {\n    val iterator = iterator()\n    if
(iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext())
{\n        val e = iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function.\n * \n
* @throws NoSuchElementException if the collection is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <T, R : Comparable<R>> Iterable<T>.maxBy(selector: (T) -> R): T {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var maxElem = iterator.next()\n    if
(!iterator.hasNext()) return maxElem\n    var maxValue = selector(maxElem)\n    do {\n        val e = iterator.next()\n
        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    } while
(iterator.hasNext())\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the
given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>>
Iterable<T>.maxByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var maxElem = iterator.next()\n    if (!iterator.hasNext()) return maxElem\n    var maxValue =
selector(maxElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (maxValue < v) {\n
            maxElem = e\n            maxValue = v\n        }\n    } while (iterator.hasNext())\n    return maxElem\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
collection.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n *
@throws NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOf(selector: (T) ->
Double): Double
{\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var maxValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the collection.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the collection is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOf(selector: (T) ->
Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n

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```

    val v = selector(iterator.next())\n    maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
collection.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T, R : Comparable<R>>
Iterable<T>.maxOf(selector: (T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v
= selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the collection or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T> Iterable<T>.maxOfOrNull(selector: (T)
-> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var maxValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the collection or `null` if there are no elements.\n * \n * If any
of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public
inline fun <T> Iterable<T>.maxOfOrNull(selector: (T) -> Float): Float? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n
val v = selector(iterator.next())\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
collection or `null` if there are no elements.\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T, R : Comparable<R>>
Iterable<T>.maxOfOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =
selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest
value according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the collection.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T, R>
Iterable<T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(maxValue, v) < 0) {\n
            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according
to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the
collection or `null` if there are no elements.\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T, R>
Iterable<T>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var maxValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(maxValue, v) < 0) {\n
            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest element or `null` if there are no

```

```

elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @SinceKotlin("1.4")\npublic fun
Iterable<Double>.maxOrNull(): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext())
return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max =
maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n *
\n * If any of elements is `NaN` returns `NaN`.\n * \n * @SinceKotlin("1.4")\npublic fun
Iterable<Float>.maxOrNull(): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max
= iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n
return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
\n * \n * @SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Iterable<T>.maxOrNull(): T? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n
val e = iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws
NoSuchElementException if the collection is empty.\n
\n * \n * @SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun <T> Iterable<T>.maxWith(comparator: Comparator<in T>): T {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n * \n * @SinceKotlin("1.4")\npublic fun <T>
Iterable<T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n
val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws
NoSuchElementException if the collection is empty.\n
\n * \n * @SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Double>.min(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If
any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
\n * \n * @SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Float>.min(): Float {\n    val iterator = iterator()\n
if (!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException if the collection is empty.\n
\n * \n * @SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Iterable<T>.min(): T {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext())
{\n        val e = iterator.next()\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element
yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the collection is
empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
\n * \n * @SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic
inline fun <T, R : Comparable<R>> Iterable<T>.minBy(selector: (T) -> R): T {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var minElem = iterator.next()\n    if (!iterator.hasNext())
return minElem\n    var minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v =
selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    } while
(iterator.hasNext())\n    return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the
given function or `null` if there are no elements.\n * \n * @sample

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samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Iterable<T>.minByOrNull(selector: (T) -> R): T? {\n  val iterator = iterator()\n  if
(!iterator.hasNext()) return null\n  var minElem = iterator.next()\n  if (!iterator.hasNext()) return minElem\n  var minValue = selector(minElem)\n  do {\n    val e =
iterator.next()\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n      minValue = v\n
}\n  } while (iterator.hasNext())\n  return minElem\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the collection.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the
collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->
Double): Double {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw NoSuchElementException()\n  var
minValue = selector(iterator.next())\n  while (iterator.hasNext())\n  {\n    val v = selector(iterator.next())\n   
minValue = minOf(minValue, v)\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the collection.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result
is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->
Float): Float {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw NoSuchElementException()\n  var
minValue = selector(iterator.next())\n  while (iterator.hasNext()) {\n    val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by
[selector] function\n * applied to each element in the collection.\n * \n * @throws NoSuchElementException if the
collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Iterable<T>.minOf(selector: (T) -> R): R {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw
NoSuchElementException()\n  var minValue = selector(iterator.next())\n  while (iterator.hasNext()) {\n    val v
= selector(iterator.next())\n    if (minValue > v) {\n      minValue = v\n    }\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the collection or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.minOfOrNull(selector: (T) -> Double): Double? {\n  val iterator = iterator()\n  if
(!iterator.hasNext()) return null\n  var minValue = selector(iterator.next())\n  while (iterator.hasNext()) {\n
val v = selector(iterator.next())\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
collection or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOfOrNull(selector: (T)
-> Float): Float? {\n  val iterator = iterator()\n  if (!iterator.hasNext()) return null\n  var minValue =
selector(iterator.next())\n  while (iterator.hasNext()) {\n    val v = selector(iterator.next())\n    minValue =
minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by
[selector] function\n * applied to each element in the collection or `null` if there are no elements.\n

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*^@SinceKotlin("1.4")^@OptIn(kotlin.experimental.ExperimentalTypeInference::class)^@OverloadResolution
ByLambdaReturnType^@kotlin.internal.InlineOnly^public inline fun <T, R : Comparable<R>>
Iterable<T>.minOfOrNull(selector: (T) -> R): R? {^n  val iterator = iterator()^n  if (!iterator.hasNext()) return
null^n  var minValue = selector(iterator.next())^n  while (iterator.hasNext()) {^n    val v =
selector(iterator.next())^n    if (minValue > v) {^n      minValue = v^n    }^n  }^n  return
minValue^n}^n/n/**^n * Returns the smallest value according to
the provided [comparator]^n * among all values produced by [selector] function applied to each element in the
collection.^n * ^n * @throws NoSuchElementException if the collection is empty.^n
*^@SinceKotlin("1.4")^@OptIn(kotlin.experimental.ExperimentalTypeInference::class)^@OverloadResolution
ByLambdaReturnType^@kotlin.internal.InlineOnly^public inline fun <T, R> Iterable<T>.minOfWith(comparator:
Comparator<in R>, selector: (T) -> R): R {^n  val iterator = iterator()^n  if (!iterator.hasNext()) throw
NoSuchElementException()^n  var minValue = selector(iterator.next())^n  while (iterator.hasNext()) {^n    val v
= selector(iterator.next())^n    if (comparator.compare(minValue, v) > 0) {^n      minValue = v^n    }^n  }^n
return minValue^n}^n/n/**^n * Returns the smallest value according to the provided [comparator]^n * among all
values produced by [selector] function applied to each element in the collection or `null` if there are no elements.^n
*^@SinceKotlin("1.4")^@OptIn(kotlin.experimental.ExperimentalTypeInference::class)^@OverloadResolution
ByLambdaReturnType^@kotlin.internal.InlineOnly^public
inline fun <T, R> Iterable<T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {^n  val
iterator = iterator()^n  if (!iterator.hasNext()) return null^n  var minValue = selector(iterator.next())^n  while
(iterator.hasNext()) {^n    val v = selector(iterator.next())^n    if (comparator.compare(minValue, v) > 0) {^n
  minValue = v^n    }^n  }^n  return minValue^n}^n/n/**^n * Returns the smallest element or `null` if there are
no elements.^n * ^n * If any of elements is `NaN` returns `NaN`.^n *^@SinceKotlin("1.4")^npublic fun
Iterable<Double>.minOrNull(): Double? {^n  val iterator = iterator()^n  if (!iterator.hasNext()) return null^n  var
min = iterator.next()^n  while (iterator.hasNext()) {^n    val e = iterator.next()^n    min = minOf(min, e)^n  }^n
return
min^n}^n/n/**^n * Returns the smallest element or `null` if there are no elements.^n * ^n * If any of elements is
`NaN` returns `NaN`.^n *^@SinceKotlin("1.4")^npublic fun Iterable<Float>.minOrNull(): Float? {^n  val iterator
= iterator()^n  if (!iterator.hasNext()) return null^n  var min = iterator.next()^n  while (iterator.hasNext()) {^n
  val e = iterator.next()^n    min = minOf(min, e)^n  }^n  return min^n}^n/n/**^n * Returns the smallest element or
`null` if there are no elements.^n *^@SinceKotlin("1.4")^npublic fun <T : Comparable<T>>
Iterable<T>.minOrNull(): T? {^n  val iterator = iterator()^n  if (!iterator.hasNext()) return null^n  var min =
iterator.next()^n  while (iterator.hasNext()) {^n    val e = iterator.next()^n    if (min > e) min = e^n  }^n  return
min^n}^n/n/**^n * Returns the first element having the smallest value according to the provided [comparator]^n * ^n
* @throws NoSuchElementException if the collection is
empty.^n
*^@SinceKotlin("1.7")^@kotlin.jvm.JvmName("minWithOrThrow")^@Suppress("CONFLICTING_OVER
LOADS")^npublic fun <T> Iterable<T>.minWith(comparator: Comparator<in T>): T {^n  val iterator = iterator()^n
if (!iterator.hasNext()) throw NoSuchElementException()^n  var min = iterator.next()^n  while
(iterator.hasNext()) {^n    val e = iterator.next()^n    if (comparator.compare(min, e) > 0) min = e^n  }^n  return
min^n}^n/n/**^n * Returns the first element having the smallest value according to the provided [comparator] or
`null` if there are no elements.^n *^@SinceKotlin("1.4")^npublic fun <T>
Iterable<T>.minWithOrNull(comparator: Comparator<in T>): T? {^n  val iterator = iterator()^n  if
(!iterator.hasNext()) return null^n  var min = iterator.next()^n  while (iterator.hasNext()) {^n    val e =
iterator.next()^n    if (comparator.compare(min, e) > 0) min = e^n  }^n  return min^n}^n/n/**^n * Returns `true` if
the collection has no
elements.^n * ^n * @sample samples.collections.Collections.Aggregates.none^n *^npublic fun <T>
Iterable<T>.none(): Boolean {^n  if (this is Collection) return isEmpty()^n  return !iterator().hasNext()^n}^n/n/**^n
* Returns `true` if no elements match the given [predicate]^n * ^n * @sample

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samples.collections.Collections.Aggregates.noneWithPredicate\n *^\npublic inline fun <T>
Iterable<T>.none(predicate: (T) -> Boolean): Boolean {\n  if (this is Collection && isEmpty()) return true\n  for
(element in this) if (predicate(element)) return false\n  return true\n}\n\n/**\n * Performs the given [action] on each
element and returns the collection itself afterwards.\n */\n@SinceKotlin("1.1")\npublic inline fun <T, C :
Iterable<T>> C.onEach(action: (T) -> Unit): C {\n  return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element,\n * and
returns the collection itself afterwards.\n */
@param [action] function that takes the index of an element and the element itself\n * and performs the action on
the element.\n */\n@SinceKotlin("1.4")\npublic inline fun <T, C : Iterable<T>> C.onEachIndexed(action: (index:
Int, T) -> Unit): C {\n  return apply { forEachIndexed(action) }\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Throws an exception if this collection is empty. If the collection can be empty in an expected way,\n * please use
[reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes
current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun <S, T : S> Iterable<T>.reduce(operation:
(acc: S, T) -> S): S {\n  val iterator = this.iterator()\n  if (!iterator.hasNext())
throw UnsupportedOperationException("Empty collection can't be reduced.")\n  var accumulator: S =
iterator.next()\n  while (iterator.hasNext()) {\n    accumulator = operation(accumulator, iterator.next())\n  }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from
left to right\n * to current accumulator value and each element with its index in the original collection.\n * \n *
Throws an exception if this collection is empty. If the collection can be empty in an expected way,\n * please use
[reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function
that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun <S,
T : S> Iterable<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {\n
val iterator = this.iterator()\n  if (!iterator.hasNext()) throw UnsupportedOperationException("Empty collection
can't be reduced.")\n  var index = 1\n  var accumulator: S = iterator.next()\n  while (iterator.hasNext()) {\n
accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original collection.\n * \n * Returns
`null` if the collection is empty.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <S, T : S>
Iterable<T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {\n  val iterator
= this.iterator()\n  if (!iterator.hasNext()) return null\n  var index = 1\n  var accumulator: S = iterator.next()\n
while (iterator.hasNext()) {\n    accumulator = operation(checkIndexOverflow(index++), accumulator,
iterator.next())\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null`
if the collection is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Iterable<T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n  val iterator = this.iterator()\n  if
(!iterator.hasNext()) return null\n  var accumulator: S = iterator.next()\n  while
(iterator.hasNext()) {\n    accumulator = operation(accumulator, iterator.next())\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this list is empty. If the list
can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is

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empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n * \npublic
inline fun <S, T : S> List<T>.reduceRight(operation: (T, acc: S) -> S): S {\n  val iterator = listIterator(size)\n  if
(!iterator.hasPrevious())\n    throw UnsupportedOperationException("Empty list can't be reduced.")\n  var
accumulator: S = iterator.previous()\n  while (iterator.hasPrevious()) {\n
    accumulator = operation(iterator.previous(), accumulator)\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with
its index in the original list and current accumulator value.\n * \n * Throws an exception if this list is empty. If the
list can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n * \npublic inline fun <S, T : S>
List<T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {\n  val iterator = listIterator(size)\n  if
(!iterator.hasPrevious())\n    throw UnsupportedOperationException("Empty list can't be reduced.")\n  var
accumulator:
S = iterator.previous()\n  while (iterator.hasPrevious()) {\n    val index = iterator.previousIndex()\n
accumulator = operation(index, iterator.previous(), accumulator)\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with
its index in the original list and current accumulator value.\n * \n * Returns `null` if the list is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n * \n@SinceKotlin("1.4")\npublic inline fun <S,
T : S> List<T>.reduceRightIndexedOrNull(operation: (index: Int, T, acc: S) -> S): S? {\n  val iterator =
listIterator(size)\n  if (!iterator.hasPrevious())\n    return null\n  var accumulator: S = iterator.previous()\n
while
(iterator.hasPrevious()) {\n    val index = iterator.previousIndex()\n    accumulator = operation(index,
iterator.previous(), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the list is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n * \n@SinceKotlin("1.4")\n * \n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
List<T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n  val iterator = listIterator(size)\n  if
(!iterator.hasPrevious())\n    return null\n  var accumulator: S = iterator.previous()\n  while
(iterator.hasPrevious()) {\n    accumulator = operation(iterator.previous(), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n * \n@SinceKotlin("1.4")\npublic inline fun <T, R>
Iterable<T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {\n  val estimatedSize =
collectionSizeOrDefault(9)\n  if (estimatedSize == 0) return listOf(initial)\n  val result =
ArrayList<R>(estimatedSize + 1).apply { add(initial) }\n  var accumulator = initial\n  for (element in this) {\n
accumulator = operation(accumulator,
element)\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
collection and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to

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[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningFold\n *^\n@SinceKotlin("1.4")\npublic inline fun <T, R>
Iterable<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n    val estimatedSize
= collectionSizeOrDefault(9)\n    if (estimatedSize == 0) return listOf(initial)\n    val result =
ArrayList<R>(estimatedSize
+ 1).apply { add(initial) }\n    var index = 0\n    var accumulator = initial\n    for (element in this) {\n
accumulator = operation(index++, accumulator, element)\n        result.add(accumulator)\n    }\n    return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element and current accumulator value that starts with the first element of this collection.\n *
\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and the
element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningReduce\n *^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Iterable<T>.runningReduce(operation: (acc: S, T) -> S): List<S> {\n val iterator = this.iterator()\n if (!iterator.hasNext()) return emptyList()\n var accumulator:
S = iterator.next()\n val result = ArrayList<S>(collectionSizeOrDefault(10)).apply { add(accumulator) }\n while
(iterator.hasNext()) {\n accumulator = operation(accumulator, iterator.next())\n result.add(accumulator)\n
 }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original collection and current accumulator value
that starts with the first element of this collection.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.runningReduce\n *^\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Iterable<T>.runningReduceIndexed(operation: (index: Int,
acc: S, T) -> S): List<S> {\n    val iterator = this.iterator()\n    if (!iterator.hasNext()) return emptyList()\n    var
accumulator: S = iterator.next()\n    val result = ArrayList<S>(collectionSizeOrDefault(10)).apply {
add(accumulator) }\n    var index = 1\n    while (iterator.hasNext()) {\n        accumulator = operation(index++,
accumulator, iterator.next())\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes

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current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.scan\n *^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scan(initial: R, operation: (acc: R, T) -> R): List<R> {\n    return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element, its index in the original collection and current accumulator value that starts
with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample

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samples.collections.Collections.Aggregates.scan\n *^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function

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applied to each element in the collection.\n */\n@Deprecated(\n"Use sumOf instead.\n",
ReplaceWith(\n"this.sumOf(selector)")\n)\n@DeprecatedSinceKotlin(warningSince = \n"1.5")\n\npublic inline fun <T>
Iterable<T>.sumBy(selector: (T) -> Int): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n */\n@Deprecated(\n"Use sumOf instead.\n",
ReplaceWith(\n"this.sumOf(selector)")\n)\n@DeprecatedSinceKotlin(warningSince = \n"1.5")\n\npublic inline fun <T>
Iterable<T>.sumByDouble(selector: (T) -> Double): Double {\n
    var sum: Double = 0.0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the collection.\n
*/\n\n@SinceKotlin(\n"1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.jvm.JvmName(\n"sumOfDouble")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
<T> Iterable<T>.sumOf(selector: (T) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the collection.\n
*/\n\n@SinceKotlin(\n"1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.jvm.JvmName(\n"sumOfInt")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T>
Iterable<T>.sumOf(selector: (T) -> Int):
Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
collection.\n
*/\n\n@SinceKotlin(\n"1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.jvm.JvmName(\n"sumOfLong")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
<T> Iterable<T>.sumOf(selector: (T) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n
        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the collection.\n
*/\n\n@SinceKotlin(\n"1.5")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.jvm.JvmName(\n"sumOfUInt")\n\n@WasExperimental(ExperimentalUnsignedType
s::class)\n\n@kotlin.internal.InlineOnly\n\npublic inline
fun <T> Iterable<T>.sumOf(selector: (T) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the collection.\n
*/\n\n@SinceKotlin(\n"1.5")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.jvm.JvmName(\n"sumOfULong")\n\n@WasExperimental(ExperimentalUnsignedType
s::class)\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> Iterable<T>.sumOf(selector: (T) -> ULong): ULong
{\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns an original collection containing all the non-`null` elements, throwing an
[IllegalArgumentException] if there are any `null` elements.\n
*/\n\npublic fun <T : Any>
Iterable<T?>.requireNoNulls(): Iterable<T> {\n    for (element in this) {\n
        if (element == null) {\n            throw IllegalArgumentException(\n"null element found in $this.")\n        }\n    }\n
    @Suppress(\n"UNCHECKED_CAST")\n    return this as Iterable<T>\n}\n\n/**\n * Returns an original
collection containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null`
elements.\n
*/\n\npublic fun <T : Any> List<T?>.requireNoNulls(): List<T> {\n    for (element in this) {\n        if
(element == null) {\n            throw IllegalArgumentException(\n"null element found in $this.")\n        }\n    }\n
    @Suppress(\n"UNCHECKED_CAST")\n    return this as List<T>\n}\n\n/**\n * Splits this collection into a list of
lists each not exceeding the given [size].\n
*/\n\n * The last list in the resulting list may have fewer elements than the
given [size].\n
*/\n\n * @param size the number of elements to take in each list, must be positive and can be greater
than the number of elements in this collection.\n
*/\n\n * @sample
samples.collections.Collections.Transformations.chunked\n

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*^@SinceKotlin("1.2")\npublic fun <T> Iterable<T>.chunked(size: Int): List<List<T>> {\n    return
windowed(size, size, partialWindows = true)\n}\n\n/**\n * Splits this collection into several lists each not exceeding
the given [size]\n * and applies the given [transform] function to an each.\n * \n * @return list of results of the
[transform] applied to an each list.\n * \n * Note that the list passed to the [transform] function is ephemeral and is
valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a
snapshot of it.\n * The last list may have fewer elements than the given [size].\n * \n * @param size the number of
elements to take in each list, must be positive and can be greater than the number of elements in this collection.\n *
\n * @sample samples.text.Strings.chunkedTransform\n *^@SinceKotlin("1.2")\npublic fun <T, R>
Iterable<T>.chunked(size: Int, transform: (List<T>)\n
-> R): List<R> {\n    return windowed(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n *
Returns a list containing all elements of the original collection without the first occurrence of the given [element].\n
\n *^@public operator fun <T> Iterable<T>.minus(element: T): List<T> {\n    val result =
ArrayList<T>(collectionSizeOrDefault(10))\n    var removed = false\n    return this.filterTo(result) { if (!removed
&& it == element) { removed = true; false } else true }\n}\n\n/**\n * Returns a list containing all elements of the
original collection except the elements contained in the given [elements] array.\n * \n * Before Kotlin 1.6, the
[elements] array may have been converted to a [HashSet] to speed up the operation, thus the elements were required
to have\n * a correct and stable implementation of `hashCode()` that didn't change between successive
invocations.\n * On JVM, you can enable this behavior back with the system property
`kotlin.collections.convert_arg_to_set_in_removeAll`
\n *^@public operator fun <T> Iterable<T>.minus(elements: Array<out T>): List<T> {\n    if
(elements.isEmpty()) return this.toList()\n    val other = elements.convertToSetForSetOperation()\n    return
this.filterNot { it in other }\n}\n\n/**\n * Returns a list containing all elements of the original collection except the
elements contained in the given [elements] collection.\n * \n * Before Kotlin 1.6, the [elements] collection may have
been converted to a [HashSet] to speed up the operation, thus the elements were required to have\n * a correct and
stable implementation of `hashCode()` that didn't change between successive invocations.\n * On JVM, you can
enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to
`true`.\n *^@public operator fun <T> Iterable<T>.minus(elements: Iterable<T>): List<T> {\n    val other =
elements.convertToSetForSetOperationWith(this)\n    if (other.isEmpty())\n        return this.toList()\n    return this.filterNot { it in other }\n}\n\n/**\n * Returns a list containing all elements of the
original collection except the elements contained in the given [elements] sequence.\n * \n * Before Kotlin 1.6, the
[elements] sequence may have been converted to a [HashSet] to speed up the operation, thus the elements were
required to have\n * a correct and stable implementation of `hashCode()` that didn't change between successive
invocations.\n * On JVM, you can enable this behavior back with the system property
`kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.\n *^@public operator fun <T>
Iterable<T>.minus(elements: Sequence<T>): List<T> {\n    val other = elements.convertToSetForSetOperation()\n
if (other.isEmpty())\n        return this.toList()\n    return this.filterNot { it in other }\n}\n\n/**\n * Returns a list
containing all elements of the original collection without the first occurrence of the given [element].\n
\n *^@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.minusElement(element: T): List<T> {\n    return minus(element)\n}\n\n/**\n * Splits
the original collection into pair of lists,\n * where *first* list contains elements for which [predicate] yielded
`true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Iterables.Operations.partition\n *^@public inline fun <T> Iterable<T>.partition(predicate: (T) ->
Boolean): Pair<List<T>, List<T>> {\n    val first = ArrayList<T>()\n    val second = ArrayList<T>()\n    for
(element in this) {\n        if (predicate(element)) {\n            first.add(element)\n        } else {\n
second.add(element)\n        }\n    }\n    return Pair(first, second)\n}\n\n/**\n * Returns a list containing all elements
of the original collection and then the given [element].\n *^@public operator fun <T> Iterable<T>.plus(element: T):
List<T> {\n    if (this is Collection) return this.plus(element)\n}

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    val result = ArrayList<T>()\n    result.addAll(this)\n    result.add(element)\n    return result\n}\n\n/**\n * Returns
a list containing all elements of the original collection and then the given [element].\n */\npublic operator fun <T>
Collection<T>.plus(element: T): List<T> {\n    val result = ArrayList<T>(size + 1)\n    result.addAll(this)\n
result.add(element)\n    return result\n}\n\n/**\n * Returns a list containing all elements of the original collection
and then all elements of the given [elements] array.\n */\npublic operator fun <T> Iterable<T>.plus(elements:
Array<out T>): List<T> {\n    if (this is Collection) return this.plus(elements)\n    val result = ArrayList<T>()\n
result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/**\n * Returns a list containing all elements
of the original collection and then all elements of the given [elements] array.\n */\npublic operator fun <T>
Collection<T>.plus(elements: Array<out T>): List<T> {\n
    val result = ArrayList<T>(this.size + elements.size)\n    result.addAll(this)\n    result.addAll(elements)\n
return result\n}\n\n/**\n * Returns a list containing all elements of the original collection and then all elements of the given
[elements] collection.\n */\npublic operator fun <T> Iterable<T>.plus(elements: Iterable<T>): List<T> {\n    if (this
is Collection) return this.plus(elements)\n    val result = ArrayList<T>()\n    result.addAll(this)\n
result.addAll(elements)\n    return result\n}\n\n/**\n * Returns a list containing all elements of the original
collection and then all elements of the given [elements] collection.\n */\npublic operator fun <T>
Collection<T>.plus(elements: Iterable<T>): List<T> {\n    if (elements is Collection) {\n        val result =
ArrayList<T>(this.size + elements.size)\n        result.addAll(this)\n        result.addAll(elements)\n        return result\n
    } else {\n        val result = ArrayList<T>(this)\n        result.addAll(elements)\n
return result\n    }\n}\n\n/**\n * Returns a list containing all elements of the original collection and then all
elements of the given [elements] sequence.\n */\npublic operator fun <T> Iterable<T>.plus(elements:
Sequence<T>): List<T> {\n    val result = ArrayList<T>()\n    result.addAll(this)\n    result.addAll(elements)\n
return result\n}\n\n/**\n * Returns a list containing all elements of the original collection and then all elements of
the given [elements] sequence.\n */\npublic operator fun <T> Collection<T>.plus(elements: Sequence<T>): List<T>
{\n    val result = ArrayList<T>(this.size + 10)\n    result.addAll(this)\n    result.addAll(elements)\n    return
result\n}\n\n/**\n * Returns a list containing all elements of the original collection and then the given [element].\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.plusElement(element: T): List<T> {\n    return
plus(element)\n}\n\n/**\n * Returns a list containing all elements of the original
collection and then the given [element].\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Collection<T>.plusElement(element: T): List<T> {\n    return plus(element)\n}\n\n/**\n * Returns a list of
snapshots of the window of the given [size]\n * sliding along this collection with the given [step], where each\n *
snapshot is a list.\n * \n * Several last lists may have fewer elements than the given [size].\n * \n * Both [size] and
[step] must be positive and can be greater than the number of elements in this collection.\n * \n * @param size the
number of elements to take in each window\n * @param step the number of elements to move the window forward
by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the
end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample
samples.collections.Sequences.Transformations.takeWindows\n */\n\n@SinceKotlin("1.2")\npublic fun <T>
Iterable<T>.windowed(size:
Int, step: Int = 1, partialWindows: Boolean = false): List<List<T>> {\n    checkWindowSizeStep(size, step)\n    if
(this is RandomAccess && this is List) {\n        val thisSize = this.size\n        val resultCapacity = thisSize / step + if
(thisSize % step == 0) 0 else 1\n        val result = ArrayList<List<T>>(resultCapacity)\n        var index = 0\n
while (index in 0 until thisSize) {\n            val windowSize = size.coerceAtMost(thisSize - index)\n            if
(windowSize < size && !partialWindows) break\n            result.add(List(windowSize) { this[it + index] })\n
index += step\n        }\n        return result\n    }\n    val result = ArrayList<List<T>>()\n
windowedIterator(iterator(), size, step, partialWindows, reuseBuffer = false).forEach {\n        result.add(it)\n    }\n
return result\n}\n\n/**\n * Returns a list of results of applying the given [transform] function to\n * an each list
representing a view over the window of the given [size]\n * \n * sliding along this collection with the given [step].\n * \n * Note that the list passed to the [transform] function is
ephemeral and is valid only inside that function.\n * \n * You should not store it or allow it to escape in some way,

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unless you made a snapshot of it.\n * Several last lists may have fewer elements than the given [size].\n * \n * Both [size] and [step] must be positive and can be greater than the number of elements in this collection.\n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample samples.collections.Sequences.Transformations.averageWindows\n * \n @SinceKotlin("1.2")\n public fun <T, R> Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) -> R): List<R> {\n checkWindowSizeStep(size, step)\n if (this is RandomAccess && this is List) {\n val thisSize = this.size\n val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n val result = ArrayList<R>(resultCapacity)\n val window = MovingSubList(this)\n var index = 0\n while (index in 0 until thisSize) {\n val windowSize = size.coerceAtMost(thisSize - index)\n if (!partialWindows && windowSize < size) break\n window.move(index, index + windowSize)\n result.add(transform(window))\n index += step\n }\n return result\n }\n val result = ArrayList<R>()\n windowedIterator(iterator(), size, step, partialWindows, reuseBuffer = true).forEach {\n result.add(transform(it))\n }\n return result\n }\n\n * Returns a list of pairs built from the elements of `this` collection and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \n public infix fun <T, R> Iterable<T>.zip(other: Array<out R>): List<Pair<T, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n }\n\n * Returns a list of values built from the elements of `this` collection and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n public inline fun <T, R, V> Iterable<T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n val arraySize = other.size\n val list = ArrayList<V>(minOf(collectionSizeOrDefault(10), arraySize))\n var i = 0\n for (element in this) {\n if (i >= arraySize) break\n list.add(transform(element, other[i++]))\n }\n return list\n }\n\n * Returns a list of pairs built from the elements of `this` collection and [other] collection with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \n public infix fun <T, R> Iterable<T>.zip(other: Iterable<R>): List<Pair<T, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n }\n\n * Returns a list of values built from the elements of `this` collection and the [other] collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n public inline fun <T, R, V> Iterable<T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n val first = iterator()\n val second = other.iterator()\n val list = ArrayList<V>(minOf(collectionSizeOrDefault(10), other.collectionSizeOrDefault(10)))\n while (first.hasNext() && second.hasNext()) {\n list.add(transform(first.next(), second.next()))\n }\n return list\n }\n\n * Returns a list of pairs of each two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two elements.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNext\n * \n @SinceKotlin("1.2")\n public fun <T> Iterable<T>.zipWithNext(): List<Pair<T, T>> {\n return zipWithNext { a, b -> a to b }\n }\n\n * Returns a list containing the results of applying the given [transform] function\n * to an each pair of two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two elements.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n * \n @SinceKotlin("1.2")\n public inline fun <T, R> Iterable<T>.zipWithNext(transform: (a: T, b: T) -> R): List<R> {\n val iterator = iterator()\n if (!iterator.hasNext()) return emptyList()\n val result = mutableListOf<R>()\n var current = iterator.next()\n while (iterator.hasNext()) {\n val next = iterator.next()\n result.add(transform(current, next))\n current = next\n }\n return result\n }\n\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-

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negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the
[truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n * \n public fun <T, A : Appendable>
Iterable<T>.joinTo(buffer: A, separator: CharSequence = '|', prefix: CharSequence = \"\", postfix: CharSequence
= \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((T) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n
    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n        if (limit < 0 || count
<= limit) {\n            buffer.appendElement(element, transform)\n        } else break\n    }\n    if (limit >= 0 && count
> limit) buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Creates a string from all
the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the
collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n *
elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n * \n public fun <T>
Iterable<T>.joinToString(separator: CharSequence = '|', prefix: CharSequence = \"\", postfix: CharSequence =
\"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((T) -> CharSequence)?
= null): String {\n    return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Returns this collection as an [Iterable].\n * \n @kotlin.internal.InlineOnly\n public
inline fun <T> Iterable<T>.asIterable(): Iterable<T> {\n    return this\n}\n\n/**\n * Creates a [Sequence] instance
that wraps the original collection returning its elements when being iterated.\n * \n * @sample
samples.collections.Sequences.Building.sequenceFromCollection\n * \n public fun <T> Iterable<T>.asSequence():
Sequence<T> {\n    return Sequence { this.iterator() }\n}\n\n/**\n * Returns an average value of elements in the
collection.\n * \n @kotlin.jvm.JvmName(\"averageOfByte\")\n public fun Iterable<Byte>.average(): Double {\n    var
sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value
of elements in the collection.\n * \n @kotlin.jvm.JvmName(\"averageOfShort\")\n public fun
Iterable<Short>.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n    checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
\n @kotlin.jvm.JvmName(\"averageOfInt\")\n public fun Iterable<Int>.average(): Double {\n    var sum: Double =
0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n
}\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the
collection.\n * \n @kotlin.jvm.JvmName(\"averageOfLong\")\n public fun Iterable<Long>.average(): Double {\n
var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in
the collection.\n * \n @kotlin.jvm.JvmName(\"averageOfFloat\")\n public fun Iterable<Float>.average(): Double {\n
var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the collection.\n * \n @kotlin.jvm.JvmName(\"averageOfDouble\")\n public fun
Iterable<Double>.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n    checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
\n @kotlin.jvm.JvmName(\"sumOfByte\")\n public fun Iterable<Byte>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
\n @kotlin.jvm.JvmName(\"sumOfShort\")\n public fun Iterable<Short>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the

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collection.\n *\n@kotlin.jvm.JvmName("\sumOfInt()\npublic fun Iterable<Int>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n *\n@kotlin.jvm.JvmName("\sumOfLong()\npublic fun Iterable<Long>.sum(): Long {\n    var sum: Long = 0L\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n *\n@kotlin.jvm.JvmName("\sumOfFloat()\npublic fun Iterable<Float>.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n *\n@kotlin.jvm.JvmName("\sumOfDouble()\npublic fun Iterable<Double>.sum(): Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.collections\n\nimport kotlin.comparisons.naturalOrder\nimport kotlin.random.Random\nimport kotlin.js.arrayBufferIsView\n\n/**\n * Returns the array if it's not `null`, or an empty array otherwise.\n * @sample samples.collections.Arrays.Usage.arrayOrEmpty\n *\n@kotlin.internal.InlineOnly\npublic actual inline fun <T> Array<out T>?.orEmpty(): Array<out T> = this ?: emptyArray<T>()\n\n/**\n * Returns a *typed* array containing all of the elements of this collection.\n *\n * Allocates an array of runtime type `T` having its size equal to the size of this collection\n * and populates the array with the elements of this collection.\n * @sample samples.collections.Collections.Collections.collectionToTypedArray\n *\n@kotlin.internal.InlineOnly\npublic actual inline fun <T> Collection<T>.toArray(): Array<T> = copyToArray(this)\n\n@JsName("copyToArray")\n@PublishedApi\ninternal fun <T> copyToArray(collection: Collection<T>): Array<T> {\n    return if (collection.asDynamic().toArray !== undefined)\n        collection.asDynamic().toArray().unsafeCast<Array<T>>()\n    else\n        copyToArrayImpl(collection).unsafeCast<Array<T>>()\n}\n\n@JsName("copyToArrayImpl")\ninternal actual fun copyToArrayImpl(collection: Collection<*>): Array<Any?> {\n    val array = emptyArray<Any?>()\n    val iterator = collection.iterator()\n    while (iterator.hasNext())\n        array.asDynamic().push(iterator.next())\n    return array\n}\n\n@JsName("copyToExistingArrayImpl")\ninternal actual fun <T> copyToArrayImpl(collection: Collection<*>, array: Array<T>): Array<T> {\n    if (array.size < collection.size)\n        return copyToArrayImpl(collection).unsafeCast<Array<T>>()\n    val iterator = collection.iterator()\n    var index = 0\n    while (iterator.hasNext()) {\n        array[index++] = iterator.next().unsafeCast<T>()\n    }\n    if (index < array.size) {\n        array[index] = null.unsafeCast<T>()\n    }\n    return array\n}\n\n/**\n * Returns an immutable list containing only the specified object [element].\n *\npublic fun <T> listOf(element: T): List<T> = arrayListOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildListInternal(builderAction: MutableList<E>.() -> Unit): List<E> {\n    return ArrayList<E>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>.() -> Unit): List<E> {\n    checkBuilderCapacity(capacity)\n    return ArrayList<E>(capacity).apply(builderAction).build()\n}\n\n/**\n * Returns an immutable set containing only the specified object [element].\n *\npublic fun <T> setOf(element: T): Set<T> = hashSetOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildSetInternal(builderAction: MutableSet<E>.() -> Unit): Set<E> {\n    return LinkedHashSet<E>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>.() -> Unit): Set<E> {\n    return LinkedHashSet<E>(capacity).apply(builderAction).build()\n}\n\n/**\n * Returns an immutable map, mapping only the specified key to the\n * specified value.\n *\npublic fun <K, V> mapOf(pair: Pair<K, V>): Map<K, V> = hashMapOf(pair)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal

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actual inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>().-> Unit): Map<K, V> {
    return LinkedHashMap<K, V>().apply(builderAction).build()
}

@PublishedApi
@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
internal actual inline fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>().-> Unit):
Map<K, V> {
    return LinkedHashMap<K, V>(capacity).apply(builderAction).build()
}

/**
 * Fills the list with the provided [value].
 * Each element in the list gets replaced with the [value].
 */
@SinceKotlin("1.2")
public actual fun <T> MutableList<T>.fill(value: T): Unit {
    for (index in 0..lastIndex) {
        this[index] = value
    }
}

/**
 * Randomly shuffles elements in this list.
 * See: https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm
 */
@SinceKotlin("1.2")
public actual fun <T> MutableList<T>.shuffle(): Unit = shuffle(Random())

/**
 * Returns a new list with the elements of this list randomly shuffled.
 */
@SinceKotlin("1.2")
public actual fun <T> Iterable<T>.shuffled(): List<T> = toMutableList().apply { shuffle() }

/**
 * Sorts elements in the list in-place according to their natural sort order.
 * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.
 * @sample samples.collections.Collections.Sorting.sortMutableList
 */
public actual fun <T : Comparable<T>> MutableList<T>.sort(): Unit {
    collectionsSort(this, naturalOrder())
}

/**
 * Sorts elements in the list in-place according to the order specified with [comparator].
 * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.
 * @sample samples.collections.Collections.Sorting.sortMutableListWith
 */
public actual fun <T> MutableList<T>.sortWith(comparator: Comparator<in T>): Unit {
    collectionsSort(this, comparator)
}

private fun <T> collectionsSort(list: MutableList<T>, comparator: Comparator<in T>) {
    if (list.size <= 1) return
    val array = copyToArray(list)
    sortArrayWith(array, comparator)
    for (i in 0 until array.size) {
        list[i] = array[i]
    }
}

internal actual fun <T> arrayOfNulls(reference: Array<T>, size: Int): Array<T> {
    return arrayOfNulls<Any>(size).unsafeCast<Array<T>>()
}

@SinceKotlin("1.3")
@PublishedApi
@JsName("arrayCopy")
internal fun <T> arrayCopy(source: Array<out T>, destination: Array<in T>, destinationOffset: Int,
startIndex: Int, endIndex: Int) {
    AbstractList.checkRangeIndexes(startIndex, endIndex, source.size)
    val rangeSize = endIndex - startIndex
    AbstractList.checkRangeIndexes(destinationOffset, destinationOffset + rangeSize, destination.size)
    if (arrayBufferIsView(destination) && arrayBufferIsView(source)) {
        val subrange = source.asDynamic().subarray(startIndex, endIndex)
        destination.asDynamic().set(subrange, destinationOffset)
    } else {
        if (source !== destination || destinationOffset <= startIndex) {
            for (index in 0 until rangeSize) {
                destination[destinationOffset + index] = source[startIndex + index]
            }
        } else {
            for (index in rangeSize - 1 downTo 0) {
                destination[destinationOffset + index] = source[startIndex + index]
            }
        }
    }
}

// no singleton map implementation in js, return map as is
@Suppress("NOTHING_TO_INLINE")
internal actual inline fun <K, V> Map<K, V>.toSingletonMapOrSelf(): Map<K, V> = this

@Suppress("NOTHING_TO_INLINE")
internal actual inline fun <K, V> Map<out K, V>.toSingletonMap(): Map<K, V> = this.toMutableMap()

@Suppress("NOTHING_TO_INLINE")
internal actual inline fun <T> Array<out T>.copyToArrayOfAny(isVarargs: Boolean): Array<out Any?> =
    if (isVarargs) // no need to copy vararg array in JS
        this
    else
        this.copyOf()

@PublishedApi
internal actual fun checkIndexOverflow(index: Int): Int {
    if (index < 0) throw IndexOverflow()
    return index
}

@PublishedApi
internal actual fun checkCountOverflow(count: Int): Int {
    if (count < 0) throw CountOverflow()
    return count
}

/**
 * JS map and set implementations do not make use of capacities or load factors.
 */
@PublishedApi
internal actual fun mapCapacity(expectedSize: Int) = expectedSize

/**
 * Checks a collection builder function capacity argument.
 * In JS no validation is made in Map/Set constructor yet.
 */
@SinceKotlin("1.3")
@PublishedApi
internal fun checkBuilderCapacity(capacity: Int) {
    require(capacity >= 0) { "capacity must be non-negative." }
}

internal actual fun brittleContainsOptimizationEnabled(): Boolean = false
}

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```


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```
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage\nkotlin.collections\n\n/**\n * Returns the given iterator itself. This allows to use an instance of iterator in a `for`\n loop.\n * @sample samples.collections.Iterators.iterator\n */\n@kotlin.internal.InlineOnly\npublic inline operator\nfun <T> Iterator<T>.iterator(): Iterator<T> = this\n\n/**\n * Returns an [Iterator] that wraps each element produced\n by the original iterator\n * into an [IndexedValue] containing the index of that element and the element itself.\n */\n * @sample samples.collections.Iterators.withIndexIterator\n */\npublic fun <T> Iterator<T>.withIndex():\nIterator<IndexedValue<T>> = IndexingIterator(this)\n\n/**\n * Performs the given [operation] on each element of\n this [Iterator].\n * @sample samples.collections.Iterators.forEachIterator\n */\n\npublic inline fun <T> Iterator<T>.forEach(operation: (T) -> Unit): Unit {\n    for (element in this)\n        operation(element)\n}\n\n/**\n * Iterator transforming original `iterator` into iterator of [IndexedValue], counting\n index from zero.\n */\n\ninternal class IndexingIterator<out T>(private val iterator: Iterator<T>) :  
Iterator<IndexedValue<T>> {\n    private var index = 0\n    final override fun hasNext(): Boolean =  
iterator.hasNext()\n    final override fun next(): IndexedValue<T> = IndexedValue(checkIndexOverflow(index++),  
iterator.next())\n}\n\n/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language  
contributors. Use of this source code is governed by the Apache 2.0 license that can be found in the  
license/LICENSE.txt file.
```

```
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ComparisonsKt")\n\npackage\nkotlin.comparisons\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:  
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport\nkotlin.random\n\n/**\n * Returns the greater of two values.\n * If values are equal, returns the first one.\n */\n@SinceKotlin("1.1")\npublic expect fun <T : Comparable<T>> maxOf(a: T, b: T): T\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Byte, b: Byte): Byte\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Short, b: Short): Short\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Int, b: Int): Int\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Long, b: Long): Long\n\n/**\n * Returns the greater of two values.\n * If either value is `NaN`, returns `NaN`.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Float, b: Float): Float\n\n/**\n * Returns the greater of two values.\n * If either value is `NaN`, returns `NaN`.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Double, b: Double): Double\n\n/**\n * Returns the greater of three values.\n * If there are multiple equal maximal values, returns the first of them.\n */\n@SinceKotlin("1.1")\npublic expect fun <T : Comparable<T>> maxOf(a: T, b: T, c: T): T\n\n/**\n * Returns the greater of three values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Byte, b: Byte, c: Byte): Byte\n\n/**\n * Returns the greater of three values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Short, b: Short, c: Short): Short\n\n/**\n * Returns the greater of three values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Int, b: Int, c: Int): Int\n\n/**\n * Returns the greater of three values.\n * If any value is `NaN`, returns `NaN`.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Long, b: Long, c: Long): Long\n\n/**\n * Returns the greater of three values.\n * If any value is `NaN`, returns `NaN`.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Float, b: Float, c: Float): Float\n\n/**\n * Returns the greater of three values.\n * If any value is `NaN`, returns `NaN`.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Double, b: Double, c:
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Double): Double\n\n/**\n * Returns the greater of three values according to the order specified by the given [comparator].\n * \n * If there are multiple equal maximal values, returns the first of them.\n\n * \n @SinceKotlin("1.1")\n public fun <T> maxOf(a: T, b: T, c: T, comparator: Comparator<in T>): T {\n return maxOf(a, maxOf(b, c, comparator), comparator)\n }\n\n /**\n * Returns the greater of two values according to the order specified by the given [comparator].\n * \n * If values are equal, returns the first one.\n\n * \n @SinceKotlin("1.1")\n public fun <T> maxOf(a: T, b: T, comparator: Comparator<in T>): T {\n return if (comparator.compare(a, b) >= 0) a else b\n }\n\n /**\n * Returns the greater of the given values.\n * \n * If there are multiple equal maximal values, returns the first of them.\n\n * \n @SinceKotlin("1.4")\n public expect fun <T : Comparable<T>> maxOf(a: T, vararg other: T): T\n\n /**\n * Returns the greater of the given values.\n\n * \n @SinceKotlin("1.4")\n public expect fun maxOf(a: Byte, vararg other: Byte): Byte\n\n /**\n * Returns the greater of the given values.\n\n * \n @SinceKotlin("1.4")\n public expect fun maxOf(a: Short, vararg other: Short): Short\n\n /**\n * Returns the greater of the given values.\n\n * \n @SinceKotlin("1.4")\n public expect fun maxOf(a: Int, vararg other: Int): Int\n\n /**\n * Returns the greater of the given values.\n\n * \n @SinceKotlin("1.4")\n public expect fun maxOf(a: Long, vararg other: Long): Long\n\n /**\n * Returns the greater of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n\n * \n @SinceKotlin("1.4")\n public expect fun maxOf(a: Float, vararg other: Float): Float\n\n /**\n * Returns the greater of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n\n * \n @SinceKotlin("1.4")\n public expect fun maxOf(a: Double, vararg other: Double): Double\n\n /**\n * Returns the greater of the given values according to the order specified by the given [comparator].\n * \n * If there are multiple equal maximal values, returns the first of them.\n\n * \n @SinceKotlin("1.4")\n public fun <T> maxOf(a: T, vararg other: T, comparator: Comparator<in T>): T {\n var max = a\n for (e in other) if (comparator.compare(max, e) < 0) max = e\n return max\n }\n\n /**\n * Returns the smaller of two values.\n * \n * If values are equal, returns the first one.\n\n * \n @SinceKotlin("1.1")\n public expect fun <T : Comparable<T>> minOf(a: T, b: T): T\n\n /**\n * Returns the smaller of two values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Byte, b: Byte): Byte\n\n /**\n * Returns the smaller of two values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Short, b: Short): Short\n\n /**\n * Returns the smaller of two values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Int, b: Int): Int\n\n /**\n * Returns the smaller of two values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Long, b: Long): Long\n\n /**\n * Returns the smaller of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Float, b: Float): Float\n\n /**\n * Returns the smaller of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Double, b: Double): Double\n\n /**\n * Returns the smaller of three values.\n * \n * If there are multiple equal minimal values, returns the first of them.\n\n * \n @SinceKotlin("1.1")\n public expect fun <T : Comparable<T>> minOf(a: T, b: T, c: T): T\n\n /**\n * Returns the smaller of three values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Byte, b: Byte, c: Byte): Byte\n\n /**\n * Returns the smaller of three values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Short, b: Short, c: Short): Short\n\n /**\n * Returns the smaller of three values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Int, b: Int, c: Int): Int\n\n /**\n * Returns the smaller of three values.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Long, b: Long, c: Long): Long\n\n /**\n * Returns the smaller of three values.\n * \n * If any value is `NaN`, returns `NaN`.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Float, b: Float, c: Float): Float\n\n /**\n * Returns the smaller of three values.\n * \n * If any value is `NaN`, returns `NaN`.\n\n * \n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public expect inline fun minOf(a: Double, b: Double, c: Double): Double\n\n /**\n * Returns the smaller of three values according to the order

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specified by the given [comparator].\n * \n * If there are multiple equal minimal values, returns the first of them.\n
*\n@SinceKotlin("1.1")\npublic fun <T> minOf(a: T, b: T, c: T, comparator: Comparator<in T>): T {\n    return
minOf(a, minOf(b, c, comparator), comparator)\n}\n\n/**\n * Returns the smaller of two values according to the
order specified by the given [comparator].\n * \n * If values are equal, returns
the first one.\n * \n@SinceKotlin("1.1")\npublic fun <T> minOf(a: T, b: T, comparator: Comparator<in T>): T {\n
    return if (comparator.compare(a, b) <= 0) a else b\n}\n\n/**\n * Returns the smaller of the given values.\n * \n * If
there are multiple equal minimal values, returns the first of them.\n * \n@SinceKotlin("1.4")\npublic expect fun <T
: Comparable<T>> minOf(a: T, vararg other: T): T\n\n/**\n * Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\npublic expect fun minOf(a: Byte, vararg other: Byte): Byte\n\n/**\n * Returns the
smaller of the given values.\n * \n@SinceKotlin("1.4")\npublic expect fun minOf(a: Short, vararg other: Short):
Short\n\n/**\n * Returns the smaller of the given values.\n * \n@SinceKotlin("1.4")\npublic expect fun minOf(a:
Int, vararg other: Int): Int\n\n/**\n * Returns the smaller of the given values.\n * \n@SinceKotlin("1.4")\npublic
expect fun minOf(a: Long, vararg other: Long): Long\n\n/**\n * Returns the smaller of the
given values.\n * \n * If any value is `NaN`, returns `NaN`.\n * \n@SinceKotlin("1.4")\npublic expect fun
minOf(a: Float, vararg other: Float): Float\n\n/**\n * Returns the smaller of the given values.\n * \n * If any value is
`NaN`, returns `NaN`.\n * \n@SinceKotlin("1.4")\npublic expect fun minOf(a: Double, vararg other: Double):
Double\n\n/**\n * Returns the smaller of the given values according to the order specified by the given
[comparator].\n * \n * If there are multiple equal minimal values, returns the first of them.\n
*\n@SinceKotlin("1.4")\npublic fun <T> minOf(a: T, vararg other: T, comparator: Comparator<in T>): T {\n
    var min = a\n    for (e in other) if (comparator.compare(min, e) > 0) min = e\n    return min\n}\n\n"/\n * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns the first non-null value produced by
[transform] function being applied to entries of this map in iteration order,\n * or throws
[NoSuchElementException] if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Any> Map<out K,
V>.firstNotNullOf(transform: (Map.Entry<K, V>) -> R?): R? {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the map was transformed to a non-null value.")\n}\n\n/**\n * Returns
the first non-null value produced by [transform] function being applied to entries
of this map in iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Any> Map<out K,
V>.firstNotNullOfOrNull(transform: (Map.Entry<K, V>) -> R?): R? {\n    for (element in this) {\n        val result =
transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return null\n}\n\n/**\n *
Returns a [List] containing all key-value pairs.\n * \npublic fun <K, V> Map<out K, V>.toList(): List<Pair<K, V>>
{\n    if (size == 0)\n        return emptyList()\n    val iterator = entries.iterator()\n    if (!iterator.hasNext())\n        return emptyList()\n    val first = iterator.next()\n    if (!iterator.hasNext())\n        return listOf(first.toPair())\n    val
result = ArrayList<Pair<K, V>>(size)\n    result.add(first.toPair())\n    do {\n
result.add(iterator.next().toPair())\n        }\n    while (iterator.hasNext())\n    return result\n}\n\n/**\n * Returns a single list of all elements yielded from results
of [transform] function being invoked on each entry of original map.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n * \npublic inline fun <K, V, R> Map<out K,
V>.flatMap(transform: (Map.Entry<K, V>) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being

```

```

invoked on each entry of original map.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic inline fun <K, V, R> Map<out K,
V>.flatMap(transform: (Map.Entry<K, V>) -> Sequence<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each entry of original map, to the given
[destination].\n */\npublic inline fun <K, V, R, C : MutableCollection<in R>> Map<out K,
V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>) -> Iterable<R>): C {\n    for (element in this) {\n
val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each entry of original map, to the given
[destination].\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequenceTo")\npublic inline fun <K, V, R, C :
MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>) ->
Sequence<R>): C {\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n
}\n
return destination\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n *
to each entry in the original map.\n */\n * \n * @sample samples.collections.Maps.Transformations.mapToList\n
*\npublic inline fun <K, V, R> Map<out K, V>.map(transform: (Map.Entry<K, V>) -> R): List<R> {\n    return
mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing only the non-null results of applying
the given [transform] function\n * to each entry in the original map.\n */\n * \n * @sample
samples.collections.Maps.Transformations.mapNotNull\n */\npublic inline fun <K, V, R : Any> Map<out K,
V>.mapNotNull(transform: (Map.Entry<K, V>) -> R?): List<R> {\n    return mapNotNullTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Applies the given [transform] function to each entry in the original map\n * and appends
only the non-null results to the given [destination].\n */\npublic inline fun <K, V, R : Any, C : MutableCollection<in
R>> Map<out K, V>.mapNotNullTo(destination:
C, transform: (Map.Entry<K, V>) -> R?): C {\n    forEach { element -> transform(element)?.let {
destination.add(it) } }\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each entry of
the original map\n * and appends the results to the given [destination].\n */\npublic inline fun <K, V, R, C :
MutableCollection<in R>> Map<out K, V>.mapTo(destination: C, transform: (Map.Entry<K, V>) -> R): C {\n    for
(item in this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Returns `true` if all entries
match the given [predicate].\n */\n * \n * @sample samples.collections.Collections.Aggregates.all\n */\npublic inline fun
<K, V> Map<out K, V>.all(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n    if (isEmpty()) return true\n
for (element in this) if (!predicate(element)) return false\n    return true\n}\n\n/**\n * Returns `true` if map has at
least one entry.\n */\n * \n * @sample samples.collections.Collections.Aggregates.any\n */\npublic fun <K, V> Map<out K, V>.any(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if at
least one entry matches the given [predicate].\n */\n * \n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n */\npublic inline fun <K, V> Map<out K,
V>.any(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n    if (isEmpty()) return false\n    for (element in
this) if (predicate(element)) return true\n    return false\n}\n\n/**\n * Returns the number of entries in this map.\n */\n*\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.count(): Int {\n    return size\n}\n\n/**\n * Returns the number of entries matching the given [predicate].\n */\npublic inline fun <K, V> Map<out K,
V>.count(predicate: (Map.Entry<K, V>) -> Boolean): Int {\n    if (isEmpty()) return 0\n    var count = 0\n    for
(element in this) if (predicate(element)) ++count\n    return count\n}\n\n/**\n * Performs the given [action] on each
entry.\n */\n*\n@kotlin.internal.HidesMembers\npublic
inline fun <K, V> Map<out K, V>.forEach(action: (Map.Entry<K, V>) -> Unit): Unit {\n    for (element in this)
action(element)\n}\n\n/**\n * Returns the first entry yielding the largest value of the given function.\n */\n * \n *
@throws NoSuchElementException if the map is empty.\n */\n * \n * @sample

```

```

samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@kotlin.internal.InlineOnly\n@Suppress
("CONFLICTING_OVERLOADS")\npublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxBy(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V> {\n    return entries.maxBy(selector)\n}\n\n/**\n * Returns the first entry yielding the largest value of the given function or `null` if there are no entries.\n * \n *
*\n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out
K, V>.maxByOrNull(selector: (Map.Entry<K, V>)
-> R): Map.Entry<K, V>? {\n    return entries.maxByOrNull(selector)\n}\n\n/**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException
if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.maxOf(selector:
(Map.Entry<K, V>) -> Double): Double {\n    return entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException
if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V> Map<out K, V>.maxOf(selector: (Map.Entry<K, V>) -> Float): Float {\n    return
entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each entry in the map.\n * \n * @throws NoSuchElementException if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxOf(selector: (Map.Entry<K, V>) -> R): R {\n    return entries.maxOf(selector)\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each entry in the map or `null` if there
are no entries.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V> Map<out K, V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {\n    return
entries.maxOfOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K,
V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Float): Float? {\n    return
entries.maxOfOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each entry in the map or `null` if there are no entries.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V, R : Comparable<R>> Map<out K, V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> R): R? {\n   
return entries.maxOfOrNull(selector)\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each entry in the map.\n * \n *
*\n * @throws NoSuchElementException if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R> Map<out K,
V>.maxOfWith(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R {\n    return

```

`entries.maxOfWith(comparator, selector)` Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries.

```

*\/@SinceKotlin("1.4")\/@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/@OverloadResolution
ByLambdaReturnType\/@kotlin.internal.InlineOnly\/public inline fun <K, V, R> Map<out K,
V>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R? {
  return entries.maxOfWithOrNull(comparator, selector)
}
*\/@SinceKotlin("1.7")\/@kotlin.jvm.JvmName("maxWithOrThrow")\/@kotlin.internal.InlineOnly\/@Suppress("CONFLICTING_OVERLOADS")\/public inline fun <K, V> Map<out K, V>.maxWith(comparator:
Comparator<in Map.Entry<K, V>>): Map.Entry<K, V> {
  return entries.maxWith(comparator)
}
*\/@SinceKotlin("1.4")\/@kotlin.internal.InlineOnly\/public
inline fun <K, V> Map<out K, V>.maxWithOrNull(comparator: Comparator<in Map.Entry<K, V>>):
Map.Entry<K, V>? {
  return entries.maxWithOrNull(comparator)
}
*\/@SinceKotlin("1.7")\/@kotlin.jvm.JvmName("minByOrThrow")\/@kotlin.internal.InlineOnly\/@Suppress("CONFLICTING_OVERLOADS")\/public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minBy(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V> {
  return entries.minBy(selector)
}
*\/@SinceKotlin("1.4")\/@kotlin.internal.InlineOnly\/public inline fun <K, V, R : Comparable<R>>
Map<out K, V>.minByOrNull(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? {
  return entries.minByOrNull(selector)
}
*\/@SinceKotlin("1.4")\/@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/@OverloadResolution
ByLambdaReturnType\/@kotlin.internal.InlineOnly\/public inline fun <K, V> Map<out K, V>.minOf(selector:
(Map.Entry<K, V>) -> Double): Double {
  return entries.minOf(selector)
}
*\/@SinceKotlin("1.4")\/@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/@OverloadResolution
ByLambdaReturnType\/@kotlin.internal.InlineOnly\/public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minOf(selector: (Map.Entry<K, V>) -> R): R {
  return entries.minOf(selector)
}
*\/@SinceKotlin("1.4")\/@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/@OverloadResolution
ByLambdaReturnType\/@kotlin.internal.InlineOnly\/public inline fun <K, V> Map<out K,
V>.minOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {
  return entries.minOfOrNull(selector)
}

```

Returns the smallest value among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

function.
 * If this character has no mapping equivalent, the result of calling [uppercaseChar] is returned.
 * @sample samples.text.Chars.titlecaseChar
 * @SinceKotlin("1.5")
 public actual fun Char.titlecaseChar(): Char = titlecaseCharImpl()
 * Returns `true` if this character is a Unicode high-surrogate code unit (also known as leading-surrogate code unit).
 * @public actual fun Char.isHighSurrogate(): Boolean = this in Char.MIN_HIGH_SURROGATE..Char.MAX_HIGH_SURROGATE
 * Returns `true` if this character is a Unicode low-surrogate code unit (also known as trailing-surrogate code unit).
 * @public actual fun Char.isLowSurrogate(): Boolean = this in Char.MIN_LOW_SURROGATE..Char.MAX_LOW_SURROGATE
 * Returns the Unicode general category of this character.
 * @SinceKotlin("1.5")
 public actual val Char.category: CharCategory
 get() = CharCategory.valueOf(getCategoryValue())
 * Returns `true` if this character (Unicode code point) is defined in Unicode.
 * A character is considered to be defined in Unicode if its [category] is not [CharCategory.UNASSIGNED].
 * @SinceKotlin("1.5")
 public actual fun Char.isDefined(): Boolean {
 if (this < "\u0080") {
 return true
 }
 return getCategoryValue() != CharCategory.UNASSIGNED.value
 }
 * Returns `true` if this character is a letter.
 * A character is considered to be a letter if its [category] is [CharCategory.UPPERCASE_LETTER], [CharCategory.LOWERCASE_LETTER], [CharCategory.TITLECASE_LETTER], [CharCategory.MODIFIER_LETTER], or [CharCategory.OTHER_LETTER].
 * @sample samples.text.Chars.isLetter
 * @SinceKotlin("1.5")
 public actual fun Char.isLetter(): Boolean {
 if (this in 'a..'z' || this in 'A..'Z') {
 return true
 }
 if (this < "\u0080") {
 return false
 }
 return isLetterImpl()
 }
 * Returns `true` if this character is a letter or digit.
 * @see isLetter
 * @see isDigit
 * @sample samples.text.Chars.isLetterOrDigit
 * @SinceKotlin("1.5")
 public actual fun Char.isLetterOrDigit(): Boolean {
 if (this in 'a..'z' || this in 'A..'Z' || this in '0..'9') {
 return true
 }
 if (this < "\u0080") {
 return false
 }
 return isDigitImpl() || isLetterImpl()
 }
 * Returns `true` if this character is a digit.
 * A character is considered to be a digit if its [category] is [CharCategory.DECIMAL_DIGIT_NUMBER].
 * @sample samples.text.Chars.isDigit
 * @SinceKotlin("1.5")
 public actual fun Char.isDigit(): Boolean {
 if (this in '0..'9') {
 return true
 }
 if (this < "\u0080") {
 return false
 }
 return isDigitImpl()
 }
 * Returns `true` if this character is upper case.
 * A character is considered to be an upper case character if its [category] is [CharCategory.UPPERCASE_LETTER], or it has contributory property `Other_Uppercase` as defined by the Unicode Standard.
 * @sample samples.text.Chars.isUpperCase
 * @SinceKotlin("1.5")
 public actual fun Char.isUpperCase(): Boolean {
 if (this in 'A..'Z') {
 return true
 }
 if (this < "\u0080") {
 return false
 }
 return isUpperCaseImpl()
 }
 * Returns `true` if this character is lower case.
 * A character is considered to be a lower case character if its [category] is [CharCategory.LOWERCASE_LETTER], or it has contributory property `Other_Lowercase` as defined by the Unicode Standard.
 * @sample samples.text.Chars.isLowerCase
 * @SinceKotlin("1.5")
 public actual fun Char.isLowerCase(): Boolean {
 if (this in 'a..'z') {
 return true
 }
 if (this < "\u0080") {
 return false
 }
 return isLowerCaseImpl()
 }
 * Returns `true` if this character is a title case letter.
 * A character is considered to be a title case letter if its [category] is [CharCategory.TITLECASE_LETTER].
 * @sample samples.text.Chars.isTitleCase
 * @SinceKotlin("1.5")
 public actual fun Char.isTitleCase(): Boolean {
 if (this < "\u0080") {
 return false
 }
 return getCategoryValue() == CharCategory.TITLECASE_LETTER.value
 }
 * Returns `true` if this character is an ISO control character.
 * A character is considered to be an ISO control character if its [category] is [CharCategory.CONTROL], meaning the Char is in the range `“\u0000”..“\u001F”` or in the range `“\u007F”..“\u009F”`.
 * @sample samples.text.Chars.isISOControl
 * @SinceKotlin("1.5")
 public actual fun Char.isISOControl(): Boolean {
 return this <= "\u001F" || this in "\u007F".." \u009F"
 }
 * Determines whether a character is whitespace according to the Unicode standard.
 * Returns `true` if the character is whitespace.
 * @sample samples.text.Chars.isWhitespace
 * @public actual

```

fun Char.isWhitespace(): Boolean = isWhitespaceImpl(), /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\nimport kotlin.js.RegExp\n\n/**\n * Converts
the characters in the specified array to a string.\n */\n@SinceKotlin("1.2")\n@Deprecated("Use
CharArray.concatToString() instead",
ReplaceWith("chars.concatToString()"))\n@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5")\n\npublic actual fun String(chars: CharArray): String {\n    var result = ""\n    for
(char in chars) {\n        result += char\n    }\n    return result\n}\n\n/**\n * Converts the characters from a portion of
the specified array to a string.\n */\n * @throws IndexOutOfBoundsException if either [offset] or [length] are less
than zero\n * or `offset + length` is out of [chars] array bounds.\n */\n@SinceKotlin("1.2")\n@Deprecated("Use
CharArray.concatToString(startIndex, endIndex) instead", ReplaceWith("chars.concatToString(offset, offset +
length)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5")\n\npublic actual fun String(chars:
CharArray, offset: Int, length: Int): String {\n    if (offset < 0 || length < 0 || chars.size - offset < length)\n        throw
IndexOutOfBoundsException("size: ${chars.size}; offset: $offset; length: $length")\n    var result = ""\n    for
(index in offset until offset + length)
{\n        result += chars[index]\n    }\n    return result\n}\n\n/**\n * Concatenates characters in this [CharArray] into
a String.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic actual fun
CharArray.concatToString(): String {\n    var result = ""\n    for (char in this) {\n        result += char\n    }\n
return result\n}\n\n/**\n * Concatenates characters in this [CharArray] or its subrange into a String.\n */\n * @param
startIndex the beginning (inclusive) of the subrange of characters, 0 by default.\n * @param endIndex the end
(exclusive) of the subrange of characters, size of this array by default.\n */\n * @throws
IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [startIndex] is greater than [endIndex].\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun CharArray.concatToString(startIndex: Int = 0, endIndex: Int = this.size): String {\n
AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)\n    var result = ""\n    for (index in startIndex
until endIndex) {\n        result += this[index]\n    }\n    return result\n}\n\n/**\n * Returns a [CharArray] containing
characters of this string.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic
actual fun String.toCharArray(): CharArray {\n    return CharArray(length) { get(it) }\n}\n\n/**\n * Returns a
[CharArray] containing characters of this string or its substring.\n */\n * @param startIndex the beginning (inclusive)
of the substring, 0 by default.\n * @param endIndex the end (exclusive) of the substring, length of this string by
default.\n */\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than
the length of this string.\n * @throws IllegalArgumentException if [startIndex] is greater
than [endIndex].\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\npublic
actual fun String.toCharArray(startIndex: Int = 0, endIndex: Int
= this.length): CharArray {\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n    return
CharArray(endIndex - startIndex) { get(startIndex + it) }\n}\n\n/**\n * Decodes a string from the bytes in UTF-8
encoding in this array.\n */\n * Malformed byte sequences are replaced by the replacement char `\\uFFFD`.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic actual fun
ByteArray.decodeToString(): String {\n    return decodeUtf8(this, 0, size, false)\n}\n\n/**\n * Decodes a string from
the bytes in UTF-8 encoding in this array or its subrange.\n */\n * @param startIndex the beginning (inclusive) of the
subrange to decode, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to decode, size of this
array
by default.\n */\n * @param throwOnInvalidSequence specifies whether to throw an exception on malformed byte
sequence or replace it by the replacement char `\\uFFFD`.\n */\n * @throws IndexOutOfBoundsException if
[startIndex] is less than zero or [endIndex] is greater than the size of this array.\n * @throws

```

```

IllegalArgumentException if [startIndex] is greater than [endIndex].\n * @throws CharacterCodingException if the
byte array contains malformed UTF-8 byte sequence and [throwOnInvalidSequence] is true.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun ByteArray.decodeToString(\n    startIndex: Int = 0,\n    endIndex: Int = this.size,\n    throwOnInvalidSequence: Boolean = false\n): String {\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)\n    return decodeUtf8(this, startIndex, endIndex,\n        throwOnInvalidSequence)\n}\n\n/**\n * Encodes this string to an array of bytes in
UTF-8 encoding.\n * Any malformed char sequence is replaced by the replacement byte sequence.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
String.encodeToByteArray(): ByteArray {\n    return encodeUtf8(this, 0, length, false)\n}\n\n/**\n * Encodes this
string or its substring to an array of bytes in UTF-8 encoding.\n * @param startIndex the beginning (inclusive)
of the substring to encode, 0 by default.\n * @param endIndex the end (exclusive) of the substring to encode, length
of this string by default.\n * @param throwOnInvalidSequence specifies whether to throw an exception on
malformed char sequence or replace.\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero
or [endIndex] is greater than the length of this string.\n * @throws IllegalArgumentException if [startIndex] is
greater than [endIndex].\n * @throws CharacterCodingException if this string contains malformed char sequence
and [throwOnInvalidSequence]
is true.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun String.encodeToByteArray(\n    startIndex: Int = 0,\n    endIndex: Int = this.length,\n    throwOnInvalidSequence: Boolean = false\n): ByteArray {\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n    return encodeUtf8(this, startIndex, endIndex,\n        throwOnInvalidSequence)\n}\n\n/**\n * Returns a copy of this string converted to upper case using the rules of the
default locale.\n *\n@Deprecated("Use uppercase() instead.",
ReplaceWith("uppercase()"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toUpperCase(): String =
asDynamic().toUpperCase()\n\n/**\n * Returns a copy of this string converted to upper case using Unicode mapping
rules of the invariant locale.\n * This function supports one-to-many and many-to-one character mapping,\n * thus the length of the returned string can be different from the length of the original string.\n *\n@sample
samples.text.Strings.toUpperCase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun String.toUpperCase(): String = asDynamic().toUpperCase()\n\n/**\n * Returns a copy of this string
converted to lower case using the rules of the default locale.\n *\n@Deprecated("Use lowercase() instead.",
ReplaceWith("lowercase()"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toLowerCase(): String =
asDynamic().toLowerCase()\n\n/**\n * Returns a copy of this string converted to lower case using Unicode
mapping rules of the invariant locale.\n * This function supports one-to-many and many-to-one character
mapping,\n * thus the length of the returned string can be different from the length of the original string.\n *\n@sample
samples.text.Strings.toLowerCase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun String.toLowerCase(): String = asDynamic().toLowerCase()\n\n@kotlin.internal.InlineOnly\ninternal
actual inline fun String.nativeIndexOf(str: String, fromIndex: Int): Int = asDynamic().indexOf(str,\n    fromIndex)\n\n@kotlin.internal.InlineOnly\ninternal actual inline fun String.nativeLastIndexOf(str: String,\n    fromIndex: Int): Int = asDynamic().lastIndexOf(str,\n    fromIndex)\n\n@kotlin.internal.InlineOnly\n@kotlin.js.JsPolyfill("""\nif (typeof String.prototype.startsWith ===
undefined) {\n    Object.defineProperty(String.prototype, 'startsWith', {\n        value: function (searchString,\n            position) {\n                position = position || 0;\n                return this.lastIndexOf(searchString, position) === position;\n            }\n        });\n}\n\n""")\ninternal inline fun String.nativeStartsWith(s: String, position: Int): Boolean =

```

```

asDynamic().startsWith(
    position)\n\n@kotlin.internal.InlineOnly\n@kotlin.js.JsPolyfill("\\nif (typeof String.prototype.endsWith ===
'undefined') {\n    Object.defineProperty(String.prototype, 'endsWith', {\n        value: function (searchString,
position) {\n            var subjectString = this.toString();\n            if (position === undefined || position >
subjectString.length) {\n                position = subjectString.length;\n            }\n            position -=
searchString.length;\n            var lastIndex = subjectString.indexOf(searchString, position);\n            return lastIndex
!== -1 && lastIndex === position;\n        }\n    });\n}\n\n\"\\n\ninternal inline fun String.nativeEndsWith(s: String):
Boolean = asDynamic().endsWith(s)\n\n@kotlin.internal.InlineOnly\n\npublic actual inline fun
String.substring(startIndex: Int): String = asDynamic().substring(startIndex)\n\n@kotlin.internal.InlineOnly\n\npublic
actual inline fun String.substring(startIndex: Int, endIndex: Int): String = asDynamic().substring(startIndex,
endIndex)\n\n@Deprecated(\"Use String.plus() instead\", ReplaceWith(\"this +
str\"))\n\n@DeprecatedSinceKotlin(warningSince = \"1.6\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
String.concat(str: String): String = asDynamic().concat(str)\n\n@Deprecated(\"Use Regex.findAll() instead or
invoke matches() on String dynamically:
this.asDynamic().match(regex)\")\n\n@DeprecatedSinceKotlin(warningSince =
\"1.6\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun String.match(regex: String): Array<String>? =
asDynamic().match(regex)\n\n//native public fun String.trim(): String\n\n//TODO: String.replace to implement
effective trimLeading and trimTrailing\n\n@kotlin.internal.InlineOnly\n\ninternal inline fun
String.nativeReplace(pattern: RegExp, replacement: String): String = asDynamic().replace(pattern,
replacement)\n\n\n/**\n * Compares two strings lexicographically, optionally ignoring case differences.\n * If
[ignoreCase] is true, the result of `Char.toUpperCaseChar().toLowerCaseChar()`
on each character is compared.\n
*/\n\n@SinceKotlin(\"1.2\")\n\n@Suppress(\"ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS\")\n\npublic
actual fun String.compareTo(other: String, ignoreCase: Boolean = false): Int {\n    if (ignoreCase) {\n        val n1 =
this.length\n        val n2 = other.length\n        val min = minOf(n1, n2)\n        if (min == 0) return n1 - n2\n        for
(index in 0 until min) {\n            var thisChar = this[index]\n            var otherChar = other[index]\n            if
(thisChar != otherChar) {\n                thisChar = thisChar.toUpperCaseChar()\n                otherChar =
otherChar.toUpperCaseChar()\n                if (thisChar != otherChar) {\n                    thisChar =
thisChar.toLowerCaseChar()\n                    otherChar = otherChar.toLowerCaseChar()\n                }\n                if (thisChar !=
otherChar) {\n                    return thisChar.compareTo(otherChar)\n                }\n            }\n        }\n        return n1 - n2\n    } else {\n        return compareTo(other)\n    }\n}\n\n\n/**\n * Returns `true` if the contents of
this char sequence are equal to the contents of the specified [other],\n * i.e. both char sequences contain the same
number of the same characters in the same order.\n */\n\n@sample samples.text.Strings.contentEquals\n
*/\n\n@SinceKotlin(\"1.5\")\n\npublic actual infix fun CharSequence?.contentEquals(other: CharSequence?): Boolean =
contentEqualsImpl(other)\n\n\n/**\n * Returns `true` if the contents of this char sequence are equal to the contents of
the specified [other], optionally ignoring case difference.\n */\n\n@param ignoreCase `true` to ignore character case
when comparing contents.\n */\n\n@sample samples.text.Strings.contentEquals\n\n@SinceKotlin(\"1.5\")\n\npublic
actual fun CharSequence?.contentEquals(other: CharSequence?, ignoreCase: Boolean): Boolean {\n    return if
(ignoreCase)\n        this.contentEqualsIgnoreCaseImpl(other)\n    else\n        this.contentEqualsImpl(other)\n}\n\n\nprivate
val STRING_CASE_INSENSITIVE_ORDER = Comparator<String> { a, b -> a.compareTo(b, ignoreCase = true)
}\n\n@SinceKotlin(\"1.2\")\n\npublic actual val String.Companion.CASE_INSENSITIVE_ORDER:
Comparator<String>\n    get() = STRING_CASE_INSENSITIVE_ORDER\n\n\n/*\n * Copyright 2010-2021
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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n\n@file:kotlin.jvm.JvmName(\"CharsKt\")\n\n\npackage kotlin.text\n\n\n/**\n
* Returns the numeric value of the decimal digit that this Char represents.\n * Throws an exception if this Char is

```

not a valid decimal digit.\n * A Char is considered to represent a decimal digit if [isDigit] is true for the Char.\n * In this case, the Unicode decimal digit value of the character is returned.\n * @sample samples.text.Chars.digitToInt\n

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToInt(): Int {\n    return digitOf(this, 10).also {\n        if (it < 0) throw\n        IllegalArgumentException("Char $this is not a decimal digit")\n    }\n}\n\n/**\n * Returns the numeric value of the digit that this Char represents in the specified [radix].\n * Throws an exception if the [radix] is not in the range `2..36` or if this Char is not a valid digit in the specified [radix].\n * A Char is considered to represent a digit in the specified [radix] if at least one of the following is true:\n * - [isDigit] is `true` for the Char and the Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is returned.\n * - The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix + 'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.\n * - The Char is one of the lowercase Latin letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is returned.\n * - The Char is one of the fullwidth Latin capital letters "\uFF21" through "\uFF3A" and its [code] is less than `radix + 0xFF21 - 10`. In this case, `this.code - 0xFF21 + 10` is returned.\n * - The Char is one of the fullwidth Latin small letters "\uFF41" through "\uFF5A" and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41 + 10` is returned.\n * @sample samples.text.Chars.digitToInt\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToInt(radix: Int): Int {\n    return digitToIntOrNull(radix) ?: throw IllegalArgumentException("\nChar $this is not a digit in the given radix=$radix")\n}\n\n/**\n * Returns the numeric value of the decimal digit that this Char represents, or `null` if this Char is not a valid decimal digit.\n * A Char is considered to represent a decimal digit if [isDigit] is true for the Char.\n * In this case, the Unicode decimal digit value of the character is returned.\n * @sample samples.text.Chars.digitToIntOrNull\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToIntOrNull(): Int? {\n    return digitOf(this, 10).takeIf { it >= 0 }\n}\n\n/**\n * Returns the numeric value of the digit that this Char represents in the specified [radix], or `null` if this Char is not a valid digit in the specified [radix].\n * Throws an exception if the [radix] is not in the range `2..36`.\n * A Char is considered to represent a digit in the specified [radix] if at least one of the following is true:\n * - [isDigit] is `true` for the Char and the Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is returned.\n * - The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix + 'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.\n * - The Char is one of the lowercase Latin letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is returned.\n * - The Char is one of the fullwidth Latin capital letters "\uFF21" through "\uFF3A" and its [code] is less than `radix + 0xFF21 - 10`. In this case, `this.code - 0xFF21 + 10` is returned.\n * - The Char is one of the fullwidth Latin small letters "\uFF41" through "\uFF5A" and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41 + 10` is returned.\n * @sample samples.text.Chars.digitToIntOrNull\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToIntOrNull(radix: Int): Int? {\n    checkRadix(radix)\n    return digitOf(this, radix).takeIf { it >= 0 }\n}\n\n/**\n * Returns the Char that represents this decimal digit.\n * Throws an exception if this value is not in the range `0..9`.\n * If this value is in `0..9`, the decimal digit Char with code `0'.code + this` is returned.\n * @sample samples.text.Chars.digitToChar\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(): Char {\n    if (this in 0..9) {\n        return '0' + this\n    }\n    throw IllegalArgumentException("\nInt $this is not a decimal digit")\n}\n\n/**\n * Returns the Char that represents this numeric digit value in the specified [radix].\n * Throws an exception if the [radix] is not in the range `2..36` or if this value is not in the range `0` until radix`.\n * If this
```

```

value is less than `10`, the decimal digit Char with code `0.code + this` is returned.
 * Otherwise, the uppercase Latin letter with code `A.code + this - 10` is returned.
 * @sample samples.text.Chars.digitToChar
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Int.digitToChar(radix: Int): Char {
 *     if (radix !in 2..36)
 *         throw IllegalArgumentException("Invalid radix: $radix. Valid radix values are in range 2..36")
 *     if (this < 0 || this >= radix)
 *         throw IllegalArgumentException("Digit $this does not represent a valid digit in radix $radix")
 *     return if (this < 10) {
 *         '0' + this
 *     } else {
 *         'A' + this - 10
 *     }
 * }
 *
 * Converts this character to lower case using Unicode mapping rules of the invariant locale.
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Char.lowercase(): Char {
 *     return Char.toLowerCase(this)
 * }
 *
 * Converts this character to lower case using Unicode mapping rules of the invariant locale.
 *
 * This function performs one-to-one character mapping.
 *
 * To support one-to-many character mapping use the [toLowerCase] function.
 *
 * If this character has no mapping equivalent, the character itself is returned.
 *
 * @sample samples.text.Chars.toLowerCase
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Char.toLowerCaseChar(): Char {
 *     return Char.toLowerCaseChar(this)
 * }
 *
 * Converts this character to lower case using Unicode mapping rules of the invariant locale.
 *
 * This function supports one-to-many character mapping, thus the length of the returned string can be greater than one.
 *
 * For example, `'\u0130'.toLowerCase()` returns `'\u0069\u0307'`, where `'\u0130` is the LATIN CAPITAL LETTER I WITH DOT ABOVE character (`\u0130`).
 *
 * If this character has no lower case mapping, the result of `toString()` of this char is returned.
 *
 * @sample samples.text.Chars.toLowerCase
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Char.toLowerCase(): String {
 *     return Char.toLowerCase(this)
 * }
 *
 * Converts this character to upper case using Unicode mapping rules of the invariant locale.
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Char.toUpperCase(): Char {
 *     return Char.toUpperCase(this)
 * }
 *
 * Converts this character to upper case using Unicode mapping rules of the invariant locale.
 *
 * This function performs one-to-one character mapping.
 *
 * To support one-to-many character mapping use the [toUpperCase] function.
 *
 * If this character has no mapping equivalent, the character itself is returned.
 *
 * @sample samples.text.Chars.toUpperCase
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Char.toUpperCaseChar(): Char {
 *     return Char.toUpperCaseChar(this)
 * }
 *
 * Converts this character to upper case using Unicode mapping rules of the invariant locale.
 *
 * This function supports one-to-many character mapping, thus the length of the returned string can be greater than one.
 *
 * For example, `'\uFB00'.toUpperCase()` returns `'\u0046\u0046'`, where `'\uFB00` is the LATIN SMALL LIGATURE FF character (`\ufb00`).
 *
 * If this character has no upper case mapping, the result of `toString()` of this char is returned.
 *
 * @sample samples.text.Chars.toUpperCase
 *
 * Since Kotlin("1.5")
 * WasExperimental(ExperimentalStdlibApi::class)
 * public fun Char.toUpperCase(): String {
 *     return Char.toUpperCase(this)
 * }
 *
 * Converts this character to title case using Unicode mapping rules of the invariant locale.
 *
 * This function performs one-to-one character mapping.
 *
 * To support one-to-many character mapping use the [toUpperCaseChar] function.
 *
 * If this character has no mapping equivalent, the result of calling [toUpperCaseChar] is returned.
 *
 * @sample samples.text.Chars.titlecase
 *
 * Since Kotlin("1.5")
 * public fun Char.titlecaseChar(): Char {
 *     return Char.titlecaseChar(this)
 * }
 *
 * Converts this character to title case using Unicode mapping rules of the invariant locale.
 *
 * This function supports one-to-many character mapping, thus the length of the returned string can be greater than one.
 *
 * For example, `'\uFB00'.titlecase()` returns `'\u0046\u0066'`, where `'\uFB00` is the LATIN SMALL LIGATURE FF character (`\ufb00`).
 *
 * If this character has no title case mapping, the result of [toUpperCase] is returned instead.
 *
 * @sample samples.text.Chars.titlecase
 *
 * Since Kotlin("1.5")
 * public fun Char.titlecase(): String {
 *     return Char.titlecase(this)
 * }
 *
 * Concatenates this Char and a String.
 *
 * @sample samples.text.Chars.plus
 *
 * Since Kotlin("1.5")
 * public inline operator fun Char.plus(other: String): String {
 *     return this.toString() + other
 * }

```

`other` Returns `true` if this character is equal to the `[other]` character, optionally ignoring character case. Two characters are considered equal ignoring case if `Char.toUpperCaseChar().toLowerCaseChar()` on each character produces the same result.

`@param ignoreCase true` to ignore character case when comparing characters. By default `false`.

`@sample samples.text.Chars.equals`

```

public fun Char.equals(other: Char, ignoreCase: Boolean = false): Boolean {
    if (this == other) return true
    if (!ignoreCase)
        return false
    val thisUpper = this.toUpperCaseChar()
    val otherUpper = other.toUpperCaseChar()
    return thisUpper == otherUpper || thisUpper.toLowerCaseChar() == otherUpper.toLowerCaseChar()
}

```

Returns `true` if this character is a Unicode surrogate code unit.

`@sample samples.text.Chars.isSurrogate`

```

public fun Char.isSurrogate(): Boolean = this in Char.MIN_SURROGATE..Char.MAX_SURROGATE

```

Returns the Unicode general category of this character.

`@SinceKotlin("1.5")`

```

public expect val Char.category: CharCategory

```

Returns `true` if this character (Unicode code point) is defined in Unicode. A character is considered to be defined in Unicode if its `[category]` is not `[CharCategory.UNASSIGNED]`.

`@SinceKotlin("1.5")`

```

public expect fun Char.isDefined(): Boolean

```

Returns `true` if this character is a letter. A character is considered to be a letter if its `[category]` is `[CharCategory.UPPERCASE_LETTER]`, `[CharCategory.LOWERCASE_LETTER]`, `[CharCategory.TITLECASE_LETTER]`, `[CharCategory.MODIFIER_LETTER]`, or `[CharCategory.OTHER_LETTER]`.

`@sample samples.text.Chars.isLetter`

```

@SinceKotlin("1.5")
public expect fun Char.isLetter(): Boolean

```

Returns `true` if this character is a letter or digit.

`@see isLetter`

`@see isDigit`

`@sample samples.text.Chars.isLetterOrDigit`

```

@SinceKotlin("1.5")
public expect fun Char.isLetterOrDigit(): Boolean

```

Returns `true` if this character is a digit. A character is considered to be a digit if its `[category]` is `[CharCategory.DECIMAL_DIGIT_NUMBER]`.

`@sample samples.text.Chars.isDigit`

```

@SinceKotlin("1.5")
public expect fun Char.isDigit(): Boolean

```

Returns `true` if this character is an upper case character if its `[category]` is `[CharCategory.UPPERCASE_LETTER]`, or it has contributory property `Other_Uppercase` as defined by the Unicode Standard.

`@sample samples.text.Chars.isUpperCase`

```

@SinceKotlin("1.5")
public expect fun Char.isUpperCase(): Boolean

```

Returns `true` if this character is lower case. A character is considered to be a lower case character if its `[category]` is `[CharCategory.LOWERCASE_LETTER]`, or it has contributory property `Other_Lowercase` as defined by the Unicode Standard.

`@sample samples.text.Chars.isLowerCase`

```

@SinceKotlin("1.5")
public expect fun Char.isLowerCase(): Boolean

```

Returns `true` if this character is a title case letter. A character is considered to be a title case letter if its `[category]` is `[CharCategory.TITLECASE_LETTER]`.

`@sample samples.text.Chars.isTitleCase`

```

@SinceKotlin("1.5")
public expect fun Char.isTitleCase(): Boolean

```

Returns `true` if this character is an ISO control character. A character is considered to be an ISO control character if its `[category]` is `[CharCategory.CONTROL]`, meaning the `Char` is in the range `      ..      ` or in the range `      ..      `.

`@sample samples.text.Chars.isISOControl`

```

@SinceKotlin("1.5")
public expect fun Char.isISOControl(): Boolean

```

Determines whether a character is whitespace according to the Unicode standard. Returns `true` if the character is whitespace.

`@sample samples.text.Chars.isWhitespace`

```

public expect fun Char.isWhitespace(): Boolean

```

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`package kotlin`

Creates a `Char` with the specified `[code]`, or throws an exception if the `[code]` is out of `Char.MIN_VALUE..Char.MAX_VALUE`. If the program that calls this function is written in a way that only valid `[code]` is passed as the argument, using the overload that takes a `[UShort]` argument is preferable.

`(Char(intValue.toUShort()))`. That overload doesn't check validity of the argument, and may improve program performance when the function is called routinely inside a loop.

`@sample samples.text.Chars.charFromCode`

```

@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly

```

```

c inline fun Char(code: Int): Char {
    if (code < Char.MIN_VALUE.code || code > Char.MAX_VALUE.code) {
        throw IllegalArgumentException("Invalid Char code: $code")
    }
    return code.toChar()
}

Creates a Char with the specified [code].
@sample samples.text.Chars.charFromCode

@SinceKotlin("1.5")
@WasExperimental(ExperimentalStdlibApi::class)
@Suppress("NO_ACTUAL_FOR_EXPECT")
public expect fun Char(code: UShort): Char {
    Returns the code of this Char.
    Code of a Char is the value it was constructed with, and the UTF-16 code unit corresponding to this Char.
    @sample samples.text.Chars.code

@SinceKotlin("1.5")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
@Suppress("DEPRECATION")
public inline val Char.code: Int get() = this.toInt()

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@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("SequencesKt")
package kotlin.sequences

// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
import kotlin.random.*

Returns `true` if [element] is found in the sequence.
The operation is _terminal_.
public operator fun <@kotlin.internal.OnlyInputTypes T> Sequence<T>.contains(element: T): Boolean {
    return indexOf(element) >= 0
}

Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this sequence.
The operation is _terminal_.
@sample samples.collections.Collections.Elements.elementAt
public fun <T> Sequence<T>.elementAt(index: Int): T {
    return elementAtOrElse(index) {
        throw IndexOutOfBoundsException("Sequence doesn't contain element at index $index.")
    }
}

Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this sequence.
The operation is _terminal_.
@sample samples.collections.Collections.Elements.elementAtOrElse
public fun <T> Sequence<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {
    if (index < 0)
        return defaultValue(index)
    val iterator = iterator()
    var count = 0
    while (iterator.hasNext()) {
        val element = iterator.next()
        if (index == count++)
            return element
    }
    return defaultValue(index)
}

Returns an element at the given [index] or `null` if the [index] is out of bounds of this sequence.
The operation is _terminal_.
@sample samples.collections.Collections.Elements.elementAtOrNull
public fun <T> Sequence<T>.elementAtOrNull(index: Int): T? {
    if (index < 0)
        return null
    val iterator = iterator()
    var count = 0
    while (iterator.hasNext()) {
        val element = iterator.next()
        if (index == count++)
            return element
    }
    return null
}

Returns the first element matching the given [predicate], or `null` if no such element was found.
The operation is _terminal_.
@sample samples.collections.Collections.Elements.find
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.find(predicate: (T) -> Boolean): T? {
    return firstOrNull(predicate)
}

Returns the last element matching the given [predicate], or `null` if no such element was found.
The operation is _terminal_.
@sample samples.collections.Collections.Elements.find
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.findLast(predicate: (T) -> Boolean): T? {
    return lastOrNull(predicate)
}

Returns the first element.
The operation is _terminal_.
@throws NoSuchElementException if the sequence is empty.
public fun <T> Sequence<T>.first(): T {
    val iterator = iterator()
    if (!iterator.hasNext())
        throw NoSuchElementException("Sequence is empty.")
    return iterator.next()
}

Returns the first element matching the given [predicate].
@throws [NoSuchElementException] if no such element is found.
The operation is _terminal_.
public inline fun <T> Sequence<T>.first(predicate: (T) -> Boolean): T {
    for (element in this)
        if (predicate(element))
            return element
    throw NoSuchElementException("Sequence contains no element matching

```


the predicate. Returns the first non-null value produced by [transform] function being applied to elements of this sequence in iteration order, or throws [NoSuchElementException] if no non-null value was produced. The operation is _terminal_. @sample samples.collections.Collections.Transformations.firstNotNullOf

```

*\/@SinceKotlin("1.5")\/@kotlin.internal.InlineOnly\/npublic inline fun <T, R : Any>
Sequence<T>.firstNotNullOf(transform: (T) -> R?): R {\/n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the sequence was transformed to a non-null value.")\/n}\/n
*\/Returns the first non-null value produced by [transform] function being applied to elements of this sequence in
iteration order, or `null` if no non-null value was produced. The operation is _terminal_. @sample
samples.collections.Collections.Transformations.firstNotNullOf
*\/@SinceKotlin("1.5")\/@kotlin.internal.InlineOnly\/npublic
inline fun <T, R : Any> Sequence<T>.firstNotNullOfOrNull(transform: (T) -> R?): R {\/n    for (element in this)
{\/n        val result = transform(element)\/n        if (result != null) {\/n            return result\/n        }\/n    }\/n    return
null\/n}\/n
*\/Returns the first element, or `null` if the sequence is empty. The operation is _terminal_.
*\/npublic fun <T> Sequence<T>.firstOrNull(): T? {\/n    val iterator = iterator()\/n    if (!iterator.hasNext())\/n
return null\/n    return iterator.next()\/n}\/n
*\/Returns the first element matching the given [predicate], or `null`
if element was not found. The operation is _terminal_.
*\/npublic inline fun <T>
Sequence<T>.firstOrNull(predicate: (T) -> Boolean): T? {\/n    for (element in this) if (predicate(element)) return
element\/n    return null\/n}\/n
*\/Returns first index of [element], or -1 if the sequence does not contain
element. The operation is _terminal_.
*\/npublic fun
<\/@kotlin.internal.OnlyInputTypes T> Sequence<T>.indexOf(element: T): Int {\/n    var index = 0\/n    for (item in
this) {\/n        checkIndexOverflow(index)\/n        if (element == item)\/n            return index\/n        index++\/n    }\/n
return -1\/n}\/n
*\/Returns index of the first element matching the given [predicate], or -1 if the sequence does
not contain such element. The operation is _terminal_.
*\/npublic inline fun <T>
Sequence<T>.indexOfFirst(predicate: (T) -> Boolean): Int {\/n    var index = 0\/n    for (item in this) {\/n
checkIndexOverflow(index)\/n        if (predicate(item))\/n            return index\/n        index++\/n    }\/n    return -
1\/n}\/n
*\/Returns index of the last element matching the given [predicate], or -1 if the sequence does not
contain such element. The operation is _terminal_.
*\/npublic inline fun <T>
Sequence<T>.indexOfLast(predicate: (T) -> Boolean): Int {\/n    var lastIndex = -1\/n    var index = 0\/n    for (item in
this) {\/n        checkIndexOverflow(index)\/n        if (predicate(item))\/n            lastIndex = index\/n        index++\/n
}\/n    return lastIndex\/n}\/n
*\/Returns the last element. The operation is _terminal_.
*\/n * @throws
NoSuchElementException if the sequence is empty.
*\/n * @sample
samples.collections.Collections.Elements.last
*\/npublic fun <T> Sequence<T>.last(): T {\/n    val iterator =
iterator()\/n    if (!iterator.hasNext())\/n        throw NoSuchElementException("Sequence is empty.")\/n    var last =
iterator.next()\/n    while (iterator.hasNext())\/n        last = iterator.next()\/n    return last\/n}\/n
*\/Returns the last
element matching the given [predicate]. The operation is _terminal_.
*\/n * @throws
NoSuchElementException if no such element is found.
*\/n * @sample
samples.collections.Collections.Elements.last
*\/npublic inline fun <T> Sequence<T>.last(predicate: (T) ->
Boolean): T {\/n    var last: T? = null\/n    var found = false\/n
    for (element in this) {\/n        if (predicate(element)) {\/n            last = element\/n            found = true\/n        }\/n
    }\/n    if (!found) throw NoSuchElementException("Sequence contains no element matching the predicate.")\/n
    @Suppress("UNCHECKED_CAST")\/n    return last as T\/n}\/n
*\/Returns last index of [element], or -1 if the
sequence does not contain element. The operation is _terminal_.
*\/npublic fun
<\/@kotlin.internal.OnlyInputTypes T> Sequence<T>.lastIndexOf(element: T): Int {\/n    var lastIndex = -1\/n    var
index = 0\/n    for (item in this) {\/n        checkIndexOverflow(index)\/n        if (element == item)\/n            lastIndex =
index\/n        index++\/n    }\/n    return lastIndex\/n}\/n
*\/Returns the last element, or `null` if the sequence is
empty. The operation is _terminal_.
*\/n * @sample samples.collections.Collections.Elements.last
*\/npublic fun <T> Sequence<T>.lastOrNull(): T? {\/n    val iterator = iterator()\/n

```

```

    if (!iterator.hasNext())\n        return null\n    var last = iterator.next()\n    while (iterator.hasNext())\n        last =\n        iterator.next()\n    return last\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no\n * such element was found.\n *\n * The operation is _terminal_.\n *\n * @sample\n * samples.collections.Collections.Elements.last\n */\npublic inline fun <T> Sequence<T>.lastOrNull(predicate: (T) ->\n Boolean): T? {\n    var last: T? = null\n    for (element in this) {\n        if (predicate(element)) {\n            last =\n            element\n        }\n    }\n    return last\n}\n\n/**\n * Returns the single element, or throws an exception if the\n * sequence is empty or has more than one element.\n *\n * The operation is _terminal_.\n */\npublic fun <T>\n Sequence<T>.single(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        throw\n        NoSuchElementException("Sequence is empty.")\n    val single = iterator.next()\n    if (iterator.hasNext())\n        throw IllegalArgumentException("Sequence has more than one element.")\n    return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one\n * matching element.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T> Sequence<T>.single(predicate:\n (T) -> Boolean): T {\n    var single: T? = null\n    var found = false\n    for (element in this) {\n        if\n        (predicate(element)) {\n            if (found) throw IllegalArgumentException("Sequence contains more than one\n            matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw\n    NoSuchElementException("Sequence contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\nreturn single as T\n}\n\n/**\n * Returns single element, or `null` if the\n * sequence is empty or has more than one element.\n *\n * The operation is _terminal_.\n */\npublic fun <T>\n Sequence<T>.singleOrNull():\n T? {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        return null\n    val single = iterator.next()\n    if\n    (iterator.hasNext())\n        return null\n    return single\n}\n\n/**\n * Returns the single element matching the given\n * [predicate], or `null` if element was not found or more than one element was found.\n *\n * The operation is\n * _terminal_.\n */\npublic inline fun <T> Sequence<T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single:\n    T? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return\n            null\n            single = element\n            found = true\n        }\n    }\n    if (!found) return null\n    return\n    single\n}\n\n/**\n * Returns a sequence containing all elements except first [n] elements.\n *\n * The operation is\n * _intermediate_ and _stateless_.\n *\n * @throws IllegalArgumentException if [n] is negative.\n *\n * @sample\n * samples.collections.Collections.Transformations.drop\n */\n\npublic fun <T> Sequence<T>.drop(n: Int): Sequence<T> {\n    require(n >= 0) {\n        "Requested element count $n\n        is less than zero." }\n    return when {\n        n == 0 -> this\n        this is DropTakeSequence -> this.drop(n)\n    }\n}\n\n/**\n * Returns a sequence containing all elements except first elements\n * that satisfy the given [predicate].\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample\n * samples.collections.Collections.Transformations.drop\n */\n\npublic fun <T> Sequence<T>.dropWhile(predicate: (T)\n -> Boolean): Sequence<T> {\n    return DropWhileSequence(this, predicate)\n}\n\n/**\n * Returns a sequence\n * containing only elements matching the given [predicate].\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample\n * samples.collections.Collections.Filtering.filter\n */\n\npublic fun <T> Sequence<T>.filter(predicate:\n (T) -> Boolean): Sequence<T> {\n    return FilteringSequence(this, true, predicate)\n}\n\n/**\n * Returns a sequence containing only elements matching the given [predicate].\n *\n * @param [predicate] function\n * that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the\n * element.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample\n * samples.collections.Collections.Filtering.filterIndexed\n */\n\npublic fun <T> Sequence<T>.filterIndexed(predicate:\n (index: Int, T) -> Boolean): Sequence<T> {\n    // TODO: Rewrite with generalized MapFilterIndexingSequence\n    return TransformingSequence(FilteringSequence(IndexingSequence(this), true, { predicate(it.index, it.value) }), {\n    it.value })\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *\n * @param\n * [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate\n * evaluation on the element.\n *\n * The operation is _terminal_.\n *\n * @sample\n * samples.collections.Collections.Filtering.filterIndexedTo\n
```

```

*^public inline fun <T, C : MutableCollection<in T>> Sequence<T>.filterIndexedTo(destination: C, predicate:
(index: Int, T) -> Boolean): C {
    forIndexed { index, element ->
        if (predicate(index, element))
            destination.add(element)
    }
    return destination
}

* Returns a sequence containing all elements that
are instances of specified type parameter R.
* The operation is _intermediate_ and _stateless_.

@sample samples.collections.Collections.Filtering.filterIsInstance

*^public inline fun <reified R>
Sequence<*>.filterIsInstance(): Sequence<@kotlin.internal.NoInfer R> {
    @Suppress("UNCHECKED_CAST")
    return filter { it is R } as Sequence<R>
}

* Appends all
elements that are instances of specified type parameter R to the given [destination].
* The operation is
_intermediate_.

@sample samples.collections.Collections.Filtering.filterIsInstanceTo

*^public inline
fun <reified R, C : MutableCollection<in R>> Sequence<*>.filterIsInstanceTo(destination: C): C {
    for (element
in this) if (element is R) destination.add(element)
    return destination
}

* Returns a sequence containing
all elements not matching the given [predicate].
* The operation is _intermediate_ and _stateless_.

@sample samples.collections.Collections.Filtering.filter

*^public fun <T> Sequence<T>.filterNot(predicate: (T)
-> Boolean): Sequence<T> {
    return FilteringSequence(this, false, predicate)
}

* Returns a sequence
containing all elements that are not `null`.
* The operation is _intermediate_ and _stateless_.

@sample
samples.collections.Collections.Filtering.filterNotNull

*^public fun <T : Any> Sequence<T?>.filterNotNull():
Sequence<T> {
    @Suppress("UNCHECKED_CAST")
    return filterNot { it == null } as
Sequence<T>
}

* Appends all elements that are not `null` to the given [destination].
* The operation is _terminal_.

@sample samples.collections.Collections.Filtering.filterNotNullTo

*^public fun <C : MutableCollection<in T>, T : Any> Sequence<T?>.filterNotNullTo(destination: C): C {
    for
(element in this) if (element != null) destination.add(element)
    return destination
}

* Appends all
elements not matching the given [predicate] to the given [destination].
* The operation is _terminal_.

@sample samples.collections.Collections.Filtering.filterTo

*^public inline fun <T, C : MutableCollection<in
T>> Sequence<T>.filterNotTo(destination: C, predicate: (T) -> Boolean): C {
    for (element in this) if
(!predicate(element)) destination.add(element)
    return destination
}

* Appends all elements matching
the given [predicate] to the given [destination].
* The operation is _terminal_.

@sample
samples.collections.Collections.Filtering.filterTo

*^public inline fun <T, C : MutableCollection<in T>>
Sequence<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {
    for (element in this) if
(predicate(element)) destination.add(element)
    return destination
}

* Returns a sequence containing
first [n] elements.
* The operation is _intermediate_ and _stateless_.

@throws
IllegalArgumentException if [n] is negative.

@sample
samples.collections.Collections.Transformations.take

*^public fun <T> Sequence<T>.take(n: Int): Sequence<T>
{
    require(n >= 0) { "Requested element count $n is less than zero." }
    return when {
        n == 0 ->
emptySequence()
        this is DropTakeSequence -> this.take(n)
        else -> TakeSequence(this, n)
    }
}

* Returns a sequence containing first elements satisfying the given [predicate].
* The operation
is _intermediate_ and _stateless_.

@sample samples.collections.Collections.Transformations.take

*^public fun <T> Sequence<T>.takeWhile(predicate: (T) -> Boolean): Sequence<T>
{
    return TakeWhileSequence(this, predicate)
}

* Returns a sequence that yields elements of this
sequence sorted according to their natural sort order.
* The sort is _stable_. It means that equal elements
preserve their order relative to each other after sorting.
* The operation is _intermediate_ and _stateful_.

@sample samples.collections.Collections.Sorting.sorted

*^public fun <T : Comparable<T>> Sequence<T>.sorted(): Sequence<T> {
    return object : Sequence<T> {
        override fun iterator(): Iterator<T> {
            val sortedList = this@sorted.toMutableList()
            sortedList.sort()
            return sortedList.iterator()
        }
    }
}

* Returns a sequence that yields
elements of this sequence sorted according to natural sort order of the value returned by specified [selector]
function.
* The sort is _stable_. It means that equal elements preserve their order relative to each other after
sorting.
* The operation is _intermediate_ and _stateful_.

* @sample samples.collections.Collections.Sorting.sortedBy

*^public inline fun <T, R : Comparable<R>>
Sequence<T>.sortedBy(crossinline selector: (T) -> R?): Sequence<T> {
    return

```

sortedWith(compareBy(selector))\n\n/**\n * Returns a sequence that yields elements of this sequence sorted descending according to natural sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n *\n * The operation is _intermediate_ and _stateful_.\n */\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.sortedByDescending(crossinline selector: (T) -> R?): Sequence<T> {\n return
sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a sequence that yields elements of this sequence sorted descending according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n *\n * The operation is _intermediate_ and _stateful_.\n */\npublic fun <T : Comparable<T>>
Sequence<T>.sortedDescending(): Sequence<T> {\n return sortedWith(reverseOrder())\n}\n\n/**\n * Returns a sequence that yields elements of this sequence sorted according to the specified [comparator].\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n *\n * The operation is _intermediate_ and _stateful_.\n */\npublic fun <T> Sequence<T>.sortedWith(comparator: Comparator<in T>):
Sequence<T> {\n return object : Sequence<T> {\n override fun iterator(): Iterator<T> {\n val
sortedList = this@sortedWith.toMutableList()\n sortedList.sortWith(comparator)\n return
sortedList.iterator()\n }\n }\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform]
function\n * applied to elements of the given sequence.\n * \n * If any of two pairs would have the same
key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original
sequence.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.associate\n */\npublic inline fun <T, K, V>
Sequence<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {\n return associateTo(LinkedHashMap<K,
V>(), transform)\n}\n\n/**\n * Returns a [Map] containing the elements from the given sequence indexed by the
key\n * returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry
iteration order of the original sequence.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.associateBy\n */\npublic inline fun <T, K>
Sequence<T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n return associateByTo(LinkedHashMap<K,
T>(), keySelector)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform] and indexed
by [keySelector] functions applied to elements of the given sequence.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry
iteration order of the original sequence.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.associateByWithValueTransform\n */\npublic inline fun <T, K, V>
Sequence<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {\n return
associateByTo(LinkedHashMap<K, V>(), keySelector, valueTransform)\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to
each element of the given sequence\n * and value is the element itself.\n * \n * If any two elements would have the
same
key returned by [keySelector] the last one gets added to the map.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.associateByTo\n */\npublic inline fun <T, K, M :
MutableMap<in K, in T>> Sequence<T>.associateByTo(destination: M, keySelector: (T) -> K): M {\n for
(element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the
given sequence.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets
added to the map.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.associateByToWithValueTransform\n */\npublic inline fun <T, K,
V, M : MutableMap<in K, in V>> Sequence<T>.associateByTo(destination:

M, keySelector: (T) -> K, valueTransform: (T) -> V): M {
 for (element in this) {
 destination.put(keySelector(element), valueTransform(element))
 }
 return destination
 }
 Populates and returns the [destination] mutable map with key-value pairs provided by [transform] function applied to each element of the given sequence.
 If any of two pairs would have the same key the last one gets added to the map.
 The operation is `_terminal_`.
 @sample
 samples.collections.Collections.Transformations.associateTo
 public inline fun <T, K, V, M : MutableMap<in K, in V>> Sequence<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {
 for (element in this) {
 destination += transform(element)
 }
 return destination
 }
 Returns a [Map] where keys are elements from the given sequence and values are produced by the [valueSelector] function applied to each element.
 If any two elements are equal, the last one gets added to the map.
 The returned map preserves the entry iteration order of the original sequence.
 The operation is `_terminal_`.
 @sample
 samples.collections.Collections.Transformations.associateWith
 public inline fun <K, V> Sequence<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {
 val result = LinkedHashMap<K, V>()
 return associateWithTo(result, valueSelector)
 }
 Populates and returns the [destination] mutable map with key-value pairs for each element of the given sequence, where key is the element itself and value is provided by the [valueSelector] function applied to that key.
 If any two elements are equal, the last one overwrites the former value in the map.
 The operation is `_terminal_`.
 @sample
 samples.collections.Collections.Transformations.associateWithTo
 public inline fun <K, V, M : MutableMap<in K, in V>> Sequence<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {
 for (element in this) {
 destination.put(element, valueSelector(element))
 }
 return destination
 }
 Appends all elements to the given [destination] collection.
 The operation is `_terminal_`.
 public fun <T, C : MutableCollection<in T>> Sequence<T>.toCollection(destination: C): C {
 for (item in this) {
 destination.add(item)
 }
 return destination
 }
 Returns a new [HashSet] of all elements.
 The operation is `_terminal_`.
 public fun <T> Sequence<T>.toHashSet(): HashSet<T> {
 return toCollection(HashSet<T>())
 }
 Returns a [List] containing all elements.
 The operation is `_terminal_`.
 public fun <T> Sequence<T>.toList(): List<T> {
 return this.toMutableList().optimizeReadOnlyList()
 }
 Returns a new [MutableList] filled with all elements of this sequence.
 The operation is `_terminal_`.
 public fun <T> Sequence<T>.toMutableList(): MutableList<T> {
 return toCollection(ArrayList<T>())
 }
 Returns a [Set] of all elements.
 The returned set preserves the element iteration order of the original sequence.
 The operation is `_terminal_`.
 public fun <T> Sequence<T>.toSet(): Set<T> {
 return toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()
 }
 Returns a single sequence of all elements from results of [transform] function being invoked on each element of original sequence.
 The operation is `_intermediate_` and `_stateless_`.
 @sample
 samples.collections.Collections.Transformations.flatMap
 public inline fun <T, R> Sequence<T>.flatMap(transform: (T) -> Iterable<R>): Sequence<R> {
 return FlatteningSequence(this, transform, Iterable<R>::iterator)
 }
 Returns a single sequence of all elements from results of [transform] function being invoked on each element of original sequence.
 The operation is `_intermediate_` and `_stateless_`.
 @sample
 samples.collections.Collections.Transformations.flatMap
 public fun <T, R> Sequence<T>.flatMap(transform: (T) -> Sequence<R>): Sequence<R> {
 return FlatteningSequence(this, transform, Sequence<R>::iterator)
 }
 Returns a single sequence of all elements yielded from results of [transform] function being invoked on each element and its index in the original sequence.
 The operation is `_intermediate_` and `_stateless_`.
 @sample

```

samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\npublic fun <T, R>
Sequence<T>.flatMapIndexed(transform:
(index: Int, T) -> Iterable<R>): Sequence<R> {\n    return flatMapIndexed(this, transform,
Iterable<R>::iterator)\n}\n\n/**\n * Returns a single sequence of all elements yielded from results of [transform]
function being invoked on each element\n * and its index in the original sequence.\n * \n * The operation is
_intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\npublic fun <T, R>
Sequence<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): Sequence<R> {\n    return
flatMapIndexed(this, transform, Sequence<R>::iterator)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original sequence, to the given
[destination].\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform: (index:
Int, T) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original sequence, to the given [destination].\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npu
blic inline fun <T, R, C : MutableCollection<in
R>> Sequence<T>.flatMapIndexedTo(destination: C, transform: (index: Int, T) -> Sequence<R>): C {\n    var
index = 0\n    for (element in this) {\n        val list = transform(checkIndexOverflow(index++), element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original sequence, to the given [destination].\n * \n * The
operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIterableTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function
being invoked on each element of original sequence, to the given [destination].\n * \n * The operation is
_intermediate_.\n
*\npublic inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C,
transform: (T) -> Sequence<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the original sequence by the
key returned by the given [keySelector] function\n * applied to each element and returns a map where each group
key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order
of the keys produced from the original sequence.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n *\npublic inline fun <T, K>
Sequence<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {\n    return groupByTo(LinkedHashMap<K,
MutableList<T>>(), keySelector)\n}\n\n/**\n
* Groups values returned by the [valueTransform] function applied to each element of the original sequence\n * by
the key returned by the given [keySelector] function applied to the element\n * and returns a map where each group

```

key is associated with a list of corresponding values.

```

    * The returned map preserves the entry iteration order of
    * the keys produced from the original sequence.
    * The operation is _terminal_.
    * @sample
    samples.collections.Collections.Transformations.groupByKeyAndValues
    *
    public inline fun <T, K, V>
    Sequence<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {
    return
    groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)
    }
    * Groups elements
    * of the original sequence by the key returned by the given [keySelector] function
    * applied to each element and
    * puts to the [destination] map each group key associated with a list of corresponding elements.
    * @return The
    * [destination] map.
    * The operation is _terminal_.
    * @sample
    samples.collections.Collections.Transformations.groupBy
    *
    public inline fun <T, K, M : MutableMap<in K,
    MutableList<T>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K): M {
    for (element in this)
    {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<T>() }
    list.add(element)
    }
    return destination
    }
    * Groups values returned by the [valueTransform] function
    * applied to each element of the original sequence
    * by the key returned by the given [keySelector] function applied
    * to the element
    * and puts to the [destination] map each group key associated with a list of corresponding values.
    * @return The [destination] map.
    * The operation is _terminal_.
    * @sample
    samples.collections.Collections.Transformations.groupByKeyAndValues
    *
    public inline fun <T, K, V, M :
    MutableMap<in K, MutableList<V>>> Sequence<T>.groupByTo(destination:
    M, keySelector: (T) -> K, valueTransform: (T) -> V): M {
    for (element in this)
    {
    val key =
    keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
    }
    return destination
    }
    * Creates a [Grouping] source from a
    * sequence to be used later with one of group-and-fold operations
    * using the specified [keySelector] function to
    * extract a key from each element.
    * The operation is _intermediate_ and _stateless_.
    * @sample
    samples.collections.Grouping.groupingByEachCount
    *
    @SinceKotlin("1.1")
    public inline fun <T, K>
    Sequence<T>.groupingBy(crossinline keySelector: (T) -> K): Grouping<T, K> {
    return object : Grouping<T,
    K> {
    override fun sourceIterator(): Iterator<T> = this@groupingBy.iterator()
    override fun
    keyOf(element: T): K = keySelector(element)
    }
    }
    * Returns a sequence containing the results of
    * applying
    * the given [transform] function
    * to each element in the original sequence.
    * The operation is _intermediate_
    * and _stateless_.
    * @sample
    samples.collections.Collections.Transformations.map
    *
    public fun <T, R>
    Sequence<T>.map(transform: (T) -> R): Sequence<R> {
    return TransformingSequence(this,
    transform)
    }
    * Returns a sequence containing the results of applying the given [transform] function
    * to each element and its index in the original sequence.
    * @param [transform] function that takes the index of an
    * element and the element itself
    * and returns the result of the transform applied to the element.
    * The
    * operation is _intermediate_ and _stateless_.
    *
    public fun <T, R> Sequence<T>.mapIndexed(transform: (index:
    Int, T) -> R): Sequence<R> {
    return TransformingIndexedSequence(this, transform)
    }
    * Returns a
    * sequence containing only the non-null results of applying the given [transform] function
    * to each element and its
    * index
    * in the original sequence.
    * @param [transform] function that takes the index of an element and the element
    * itself
    * and returns the result of the transform applied to the element.
    * The operation is _intermediate_ and
    * _stateless_.
    *
    public fun <T, R : Any> Sequence<T>.mapIndexedNotNull(transform: (index: Int, T) -> R?):
    Sequence<R> {
    return TransformingIndexedSequence(this, transform).filterNotNull()
    }
    * Applies the
    * given [transform] function to each element and its index in the original sequence
    * and appends only the non-null
    * results to the given [destination].
    * @param [transform] function that takes the index of an element and the
    * element itself
    * and returns the result of the transform applied to the element.
    * The operation is
    * _terminal_.
    *
    public inline fun <T, R : Any, C : MutableCollection<in R>>
    Sequence<T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {
    forEachIndexed {
    index, element -> transform(index,

```

```

element)?.let { destination.add(it) } } } return destination\n\n\n/**\n * Applies the given [transform] function to
each element and its index in the original sequence\n * and appends the results to the given [destination].\n *
@param [transform] function that takes the index of an element and the element itself\n * and returns the result of
the transform applied to the element.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T, R, C :
MutableCollection<in R>> Sequence<T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {\n
var index = 0\n for (item in this)\n destination.add(transform(checkIndexOverflow(index++), item))\n return
destination\n}\n\n/**\n * Returns a sequence containing only the non-null results of applying the given [transform]
function\n * to each element in the original sequence.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample samples.collections.Collections.Transformations.mapNotNull\n
*/\npublic fun <T, R : Any> Sequence<T>.mapNotNull(transform: (T) -> R?): Sequence<R> {\n return
TransformingSequence(this, transform).filterNotNull()\n}\n\n/**\n * Applies the given [transform] function to each
element in the original sequence\n * and appends only the non-null results to the given [destination].\n *\n * The
operation is _terminal_.\n */\npublic inline fun <T, R : Any, C : MutableCollection<in R>>
Sequence<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {\n forEach { element ->
transform(element)?.let { destination.add(it) } } } return destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original sequence\n * and appends the results to the given [destination].\n *\n * The
operation is _terminal_.\n */\npublic inline fun <T, R, C : MutableCollection<in R>>
Sequence<T>.mapTo(destination: C, transform: (T) -> R): C {\n for (item in this)\n
destination.add(transform(item))\n return destination\n}\n\n/**\n * Returns a sequence that wraps each element of the original sequence\n * into an [IndexedValue] containing the
index of that element and the element itself.\n *\n * The operation is _intermediate_ and _stateless_.\n */\npublic
fun <T> Sequence<T>.withIndex(): Sequence<IndexedValue<T>> {\n return IndexingSequence(this)\n}\n\n/**\n * Returns a sequence containing only distinct elements from the given sequence.\n * \n * Among equal elements of
the given sequence, only the first one will be present in the resulting sequence.\n * The elements in the resulting
sequence are in the same order as they were in the source sequence.\n *\n * The operation is _intermediate_ and
_stateful_.\n *\n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic
fun <T> Sequence<T>.distinct(): Sequence<T> {\n return this.distinctBy { it }\n}\n\n/**\n * Returns a sequence
containing only elements from the given sequence\n * having distinct keys returned by the given
[selector] function.\n * \n * Among elements of the given sequence with equal keys, only the first one will be
present in the resulting sequence.\n * The elements in the resulting sequence are in the same order as they were in
the source sequence.\n *\n * The operation is _intermediate_ and _stateful_.\n *\n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun <T, K>
Sequence<T>.distinctBy(selector: (T) -> K): Sequence<T> {\n return DistinctSequence(this, selector)\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given sequence.\n * \n * The returned set
preserves the element iteration order of the original sequence.\n *\n * The operation is _terminal_.\n */\npublic fun
<T> Sequence<T>.toMutableSet(): MutableSet<T> {\n val set = LinkedHashSet<T>()\n for (item in this)
set.add(item)\n return set\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n *\n * The
operation is _terminal_.\n
*\n * @sample samples.collections.Collections.Aggregates.all\n */\npublic inline fun <T>
Sequence<T>.all(predicate: (T) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if sequence has at least one element.\n *\n * The operation is
_terminal_.\n *\n * @sample samples.collections.Collections.Aggregates.any\n */\npublic fun <T>
Sequence<T>.any(): Boolean {\n return iterator().hasNext()\n}\n\n/**\n * Returns `true` if at least one element
matches the given [predicate].\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n */\npublic inline fun <T>
Sequence<T>.any(predicate: (T) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns the number of elements in this sequence.\n *\n * The operation is
_terminal_.\n */\npublic fun <T> Sequence<T>.count(): Int {\n

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    var count = 0\n    for (element in this) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *\n * The operation is _terminal_.\n */\npublic inline fun <T>
Sequence<T>.count(predicate: (T) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from left to right\n *\n * to current accumulator value and each element.\n *\n *
Returns the specified [initial] value if the sequence is empty.\n *\n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n *\n * The operation is _terminal_.\n */\n
public inline fun <T, R> Sequence<T>.fold(initial: R, operation: (acc: R, T) -> R): R {\n    var accumulator =
initial\n    for (element in this) accumulator = operation(accumulator, element)\n
    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from
left to right\n *\n * to current accumulator value and each element with its index in the original sequence.\n *\n *
Returns the specified [initial] value if the sequence is empty.\n *\n * @param [operation] function that takes the
index of an element, current accumulator value\n *\n * and the element itself, and calculates the next accumulator
value.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T, R> Sequence<T>.foldIndexed(initial: R,
operation: (index: Int, acc: R, T) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this)
accumulator = operation(checkIndexOverflow(index++), accumulator, element)\n    return accumulator\n}\n\n/**\n * Performs the given [action] on each element.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T>
Sequence<T>.forEach(action: (T) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element.\n *\n * @param [action]
function that takes the index of an element and the element itself\n *\n * and performs the action on the element.\n *\n *
The operation is _terminal_.\n */\npublic inline fun <T> Sequence<T>.forEachIndexed(action: (index: Int, T) ->
Unit): Unit {\n    var index = 0\n    for (item in this) action(checkIndexOverflow(index++), item)\n}\n\n/**\n * Returns the largest element.\n *\n * If any of elements is `NaN` returns `NaN`.\n *\n * The operation is
_terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Double>.max(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n *\n * If any of elements is
`NaN` returns `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the
sequence is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Float>.max(): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T : Comparable<T>> Sequence<T>.max(): T {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw
NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element yielding the
largest value of the given function.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException
if the sequence is empty.\n *\n * @sample samples.collections.Collections.Aggregates.maxBy\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <T, R : Comparable<R>> Sequence<T>.maxBy(selector: (T) -> R): T {\n    val iterator
= iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var maxElem = iterator.next()\n    if
(!iterator.hasNext()) return maxElem\n    var maxValue = selector(maxElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }
}

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    } while (iterator.hasNext())\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value
of the given function or `null` if there are no elements.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n *\n@SinceKotlin("1.4")\n\npublic inline fun <T, R :
Comparable<R>> Sequence<T>.maxByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if
(iterator.hasNext()) return null\n    var maxElem = iterator.next()\n    if (!iterator.hasNext()) return maxElem\n    var
maxValue = selector(maxElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (maxValue <
v) {\n            maxElem = e\n            maxValue = v\n        }\n    } while (iterator.hasNext())\n    return
maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the sequence.\n *\n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws
NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> Sequence<T>.maxOf(selector: (T) ->
Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the sequence.\n *\n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * The operation is _terminal_.\n *\n *
@throws NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> Sequence<T>.maxOf(selector: (T) ->
Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the sequence.\n *\n * The operation is
_terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.maxOf(selector: (T) -> R): R {\n
    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max Value =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (maxValue <
v) {\n            max Value = v\n        }\n    }\n    return max Value\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the sequence or `null` if there are no
elements.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * The
operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> Sequence<T>.maxOfOrNull(selector:
(T) -> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max Value =
selector(iterator.next())\n    while (iterator.hasNext())\n        {\n            val v = selector(iterator.next())\n            max Value = maxOf(max Value, v)\n        }\n    return
max Value\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the sequence or `null` if there are no elements.\n *\n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n *\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> Sequence<T>.maxOfOrNull(selector:
(T) -> Float): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max Value =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        max Value =
maxOf(max Value, v)\n    }\n    return max Value\n}\n\n/**\n * Returns the largest value among all values produced

```

by [selector] function

* applied to each element in the sequence or `null` if there are no elements.

* The operation is _terminal_

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.maxOfOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =
selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the sequence.\n * \n * @throws
NoSuchElementException if the sequence is empty.\n * \n * The operation is _terminal_.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Sequence<T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val
iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var maxValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the sequence or `null` if there are no elements.\n * \n * The operation is
_terminal_.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.maxOfWithOrNull(comparator:
Comparator<in R>, selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n *
Returns the largest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n
* \n * The operation is _terminal_.\n
*^@SinceKotlin("1.4")\npublic fun Sequence<Double>.maxOrNull():
Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n *
Returns the largest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n
* \n * The operation is _terminal_.\n
*^@SinceKotlin("1.4")\npublic
fun Sequence<Float>.maxOrNull(): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n
}\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * \n * The operation
is _terminal_.\n
*^@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Sequence<T>.maxOrNull(): T? {\n    val
iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n *
Returns the first element having the largest value according to the provided [comparator].\n * \n * The operation is
_terminal_.\n * \n * @throws NoSuchElementException if the sequence is empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("maxWithOrThrow")@Suppress("CONFLICTING_OVER
LOADS")\npublic
fun <T> Sequence<T>.maxWith(comparator: Comparator<in T>): T {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext())
{\n        val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n *
Returns the first element having the largest value according to the provided [comparator] or `null` if there are no
elements.\n * \n * The operation is _terminal_.\n
*^@SinceKotlin("1.4")\npublic fun <T>
Sequence<T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e =

```

```

iterator.next()\n    if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the\n smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is empty.\n\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Double>.min(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw\n NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =\n iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If\n any of elements is `NaN` returns `NaN`.\n * \n * The operation is _terminal_.\n * \n * @throws\n NoSuchElementException if the sequence is empty.\n\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Float>.min(): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw\n NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n\n        val e = iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest\n element.\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is\n empty.\n\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T : Comparable<T>> Sequence<T>.min(): T {\n    val iterator = iterator()\n    if\n (!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext())\n {\n        val e = iterator.next()\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element\n yielding the smallest value of the given function.\n * \n * The operation is _terminal_.\n * \n * @throws\n NoSuchElementException if the sequence is empty.\n * \n * @sample\n samples.collections.Collections.Aggregates.minBy\n\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic\n inline fun <T, R : Comparable<R>> Sequence<T>.minBy(selector: (T) -> R): T {\n    val iterator = iterator()\n    if\n (!iterator.hasNext()) throw NoSuchElementException()\n    var minElem = iterator.next()\n    if (!iterator.hasNext())\n return minElem\n    var minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v =\n selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    } while\n (iterator.hasNext())\n    return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the\n given function or `null` if there are no elements.\n * \n * The operation is _terminal_.\n * \n * @sample\n samples.collections.Collections.Aggregates.minByOrNull\n\n */\n\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Sequence<T>.minByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if\n (!iterator.hasNext()) return null\n    var minElem = iterator.next()\n    if (!iterator.hasNext())\n return minElem\n    var minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v =\n selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    } while\n (iterator.hasNext())\n    return minElem\n}\n\n/**\n * Returns the smallest value among all values produced by\n [selector] function\n * applied to each element in the sequence.\n * \n * If any of values produced by [selector]\n function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n * \n * @throws\n NoSuchElementException if the sequence is empty.\n\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOf(selector: (T) ->\n Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var\n minValue = selector(iterator.next())\n    while (iterator.hasNext())\n {\n        val v = selector(iterator.next())\n        minValue = minOf(minValue, v)\n    }\n    return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the sequence.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result\n is `NaN`.\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is\n empty.\n\n */

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOf(selector: (T) ->
Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the sequence.\n * \n *
The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.minOf(selector: (T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v
= selector(iterator.next())\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the sequence or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`,
the returned result is `NaN`.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOfOrNull(selector:
(T) -> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var minValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        minValue =
minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.minOfOrNull(selector: (T) -> Float): Float? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n
val v = selector(iterator.next())\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
sequence or `null` if there are no elements.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.minOfOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the sequence.\n * \n * @throws
NoSuchElementException if the sequence is empty.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector]
function applied to each element in the sequence or `null` if there are no elements.\n * \n * The operation is
_terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```

```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.minOfOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n  val iterator =
iterator()\n  if (!iterator.hasNext()) return null\n  var minValue = selector(iterator.next())\n  while
(iterator.hasNext()) {\n    val v = selector(iterator.next())\n    if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest element or `null` if there are
no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * The operation is _terminal_.\n
*/\n\n@SinceKotlin("1.4")\npublic
fun Sequence<Double>.minOrNull(): Double? {\n  val iterator = iterator()\n  if (!iterator.hasNext()) return null\n
var min = iterator.next()\n  while (iterator.hasNext()) {\n    val e = iterator.next()\n    min = minOf(min, e)\n
}\n  return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any of
elements is `NaN` returns `NaN`.\n * \n * The operation is _terminal_.\n */\n\n@SinceKotlin("1.4")\npublic fun
Sequence<Float>.minOrNull(): Float? {\n  val iterator = iterator()\n  if (!iterator.hasNext()) return null\n  var
min = iterator.next()\n  while (iterator.hasNext()) {\n    val e = iterator.next()\n    min = minOf(min, e)\n  }\n
return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * The operation is
_terminal_.\n */\n\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Sequence<T>.minOrNull(): T? {\n
val iterator = iterator()\n
if (!iterator.hasNext()) return null\n  var min = iterator.next()\n  while (iterator.hasNext()) {\n    val e =
iterator.next()\n    if (min > e) min = e\n  }\n  return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * The operation is _terminal_.\n * \n * @throws
NoSuchElementException if the sequence is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun <T> Sequence<T>.minWith(comparator: Comparator<in T>): T {\n  val iterator =
iterator()\n  if (!iterator.hasNext()) throw NoSuchElementException()\n  var min = iterator.next()\n  while
(iterator.hasNext()) {\n    val e = iterator.next()\n    if (comparator.compare(min, e) > 0) min = e\n  }\n  return
min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or
`null` if there are no elements.\n * \n * The
operation is _terminal_.\n */\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.minWithOrNull(comparator:
Comparator<in T>): T? {\n  val iterator = iterator()\n  if (!iterator.hasNext()) return null\n  var min =
iterator.next()\n  while (iterator.hasNext()) {\n    val e = iterator.next()\n    if (comparator.compare(min, e) >
0) min = e\n  }\n  return min\n}\n\n/**\n * Returns `true` if the sequence has no elements.\n * \n * The operation is
_terminal_.\n * \n * @sample samples.collections.Collections.Aggregates.none\n */\n\npublic fun <T>
Sequence<T>.none(): Boolean {\n  return !iterator().hasNext()\n}\n\n/**\n * Returns `true` if no elements match
the given [predicate].\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\n\npublic inline fun <T>
Sequence<T>.none(predicate: (T) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns
a sequence which performs the given [action] on each element of the original sequence as they pass through it.\n * \n
* The operation is _intermediate_ and _stateless_.\n */\n\n@SinceKotlin("1.1")\npublic fun <T>
Sequence<T>.onEach(action: (T) -> Unit): Sequence<T> {\n  return map {\n    action(it)\n    it\n
}\n}\n\n/**\n * Returns a sequence which performs the given [action] on each element of the original sequence as
they pass through it.\n * \n * @param [action] function that takes the index of an element and the element itself\n * and
performs the action on the element.\n * \n * The operation is _intermediate_ and _stateless_.\n
*/\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.onEachIndexed(action: (index: Int, T) -> Unit):
Sequence<T> {\n  return mapIndexed { index, element ->\n    action(index, element)\n    element\n
}\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to
current accumulator value
and each element.\n * \n * Throws an exception if this sequence is empty. If the sequence can be empty in an
expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param

```

[operation] function that takes current accumulator value and an element, and calculates the next accumulator value. The operation is `_terminal_`. @sample samples.collections.Collections.Aggregates.reduce

```

public inline fun <S, T : S> Sequence<T>.reduce(operation: (acc: S, T) -> S): S {
    val iterator = this.iterator()
    if (!iterator.hasNext()) throw UnsupportedOperationException("Empty sequence can't be reduced.")
    var accumulator: S = iterator.next()
    while (iterator.hasNext()) {
        accumulator = operation(accumulator, iterator.next())
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original sequence. Throws an exception if this sequence is empty. If the sequence can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. The operation is `_terminal_`.

```

public inline fun <S, T : S> Sequence<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {
    val iterator = this.iterator()
    if (!iterator.hasNext()) throw UnsupportedOperationException("Empty sequence can't be reduced.")
    var index = 1
    var accumulator: S = iterator.next()
    while (iterator.hasNext()) {
        accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original sequence. Returns `null` if the sequence is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. The operation is `_terminal_`.

```

@sample samples.collections.Collections.Aggregates.reduceOrNull
@SinceKotlin("1.4")
public inline fun <S, T : S> Sequence<T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {
    val iterator = this.iterator()
    if (!iterator.hasNext()) return null
    var index = 1
    var accumulator: S = iterator.next()
    while (iterator.hasNext()) {
        accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element. Returns `null` if the sequence is empty.

@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. The operation is `_terminal_`.

```

@sample samples.collections.Collections.Aggregates.reduceOrNull
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <S, T : S> Sequence<T>.reduceOrNull(operation: (acc: S, T) -> S): S? {
    val iterator = this.iterator()
    if (!iterator.hasNext()) return null
    var accumulator: S = iterator.next()
    while (iterator.hasNext()) {
        accumulator = operation(accumulator, iterator.next())
    }
    return accumulator
}

```

Returns a sequence containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value.

Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting sequence. The [initial] value should also be immutable (or should not be mutated) as it may be passed to [operation] function later because of sequence's lazy nature.

@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. The operation is `_intermediate_` and `_stateless_`.

```

@sample samples.collections.Collections.Aggregates.runningFold
@SinceKotlin("1.4")
public fun <T, R> Sequence<T>.runningFold(initial: R, operation: (acc: R, T) -> R): Sequence<R> {
    return sequence {
        yield(initial)
        var accumulator = initial
        for (element in this@runningFold) {
            accumulator = operation(accumulator, element)
            yield(accumulator)
        }
    }
}

```

Returns a sequence containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original sequence and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting sequence. The [initial] value should also be immutable (or should not be mutated).

as it may be passed to [operation] function later because of sequence's lazy nature.

```

    * @param [operation]
    function that takes the index of an element, current accumulator value
    * and the element itself, and calculates the
    next accumulator value.
    * The operation is _intermediate_ and _stateless_.
    * @sample
    samples.collections.Collections.Aggregates.runningFold
    * ^\n@SinceKotlin("1.4")\npublic fun <T, R>
    Sequence<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {
    \n    return
    sequence {
    \n        yield(initial)
    \n        var index = 0
    \n        var accumulator = initial
    \n        for (element in
    this@runningFoldIndexed) {
    \n            accumulator = operation(checkIndexOverflow(index++), accumulator,
    element)
    \n            yield(accumulator)
    \n        }
    \n    }
    \n}
    * Returns a sequence containing successive
    accumulation values generated by applying [operation] from left to right
    * to each element and current
    accumulator value that starts with the first element of this sequence.
    * Note that `acc` value passed to
    [operation] function should not be mutated;
    * otherwise it would affect the previous value in resulting sequence.
    * @param [operation] function that takes current accumulator value and the element, and calculates the next
    accumulator value.
    * The operation is _intermediate_ and _stateless_.
    * @sample
    samples.collections.Collections.Aggregates.runningReduce
    * ^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
    fun <S, T : S> Sequence<T>.runningReduce(operation: (acc: S, T) -> S): Sequence<S> {
    \n    return sequence {
    \n        val iterator = iterator()
    \n        if (iterator.hasNext()) {
    \n            var accumulator: S = iterator.next()
    \n            yield(accumulator)
    \n            while (iterator.hasNext()) {
    \n                accumulator = operation(accumulator,
    iterator.next())
    \n                yield(accumulator)
    \n            }
    \n        }
    \n    }
    \n}
    * Returns a sequence containing
    successive accumulation values generated by applying [operation] from left to right
    * to each element, its index in
    the original sequence and current accumulator value that starts with the first element of this sequence.
    * Note
    that `acc` value passed to [operation] function should not be mutated;
    * otherwise it would affect the previous
    value in resulting sequence.
    * @param [operation] function that takes the index of an element, current
    accumulator value
    * and the
    element itself, and calculates the next accumulator value.
    * The operation is _intermediate_ and _stateless_.
    * @sample
    samples.collections.Collections.Aggregates.runningReduce
    * ^\n@SinceKotlin("1.4")\npublic fun
    <S, T : S> Sequence<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): Sequence<S> {
    \n    return
    sequence {
    \n        val iterator = iterator()
    \n        if (iterator.hasNext()) {
    \n            var accumulator: S =
    iterator.next()
    \n            yield(accumulator)
    \n            var index = 1
    \n            while (iterator.hasNext()) {
    \n                accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())
    \n                yield(accumulator)
    \n            }
    \n        }
    \n    }
    \n}
    * Returns a sequence containing successive accumulation
    values generated by applying [operation] from left to right
    * to each element and current accumulator value that
    starts with [initial] value.
    * Note that `acc` value passed to [operation]
    function should not be mutated;
    * otherwise it would affect the previous value in resulting sequence.
    * The
    [initial] value should also be immutable (or should not be mutated)
    * as it may be passed to [operation] function
    later because of sequence's lazy nature.
    * @param [operation] function that takes current accumulator value
    and an element, and calculates the next accumulator value.
    * The operation is _intermediate_ and
    _stateless_.
    * @sample
    samples.collections.Collections.Aggregates.scan
    * ^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T, R>
    Sequence<T>.scan(initial: R, operation: (acc: R, T) -> R): Sequence<R> {
    \n    return runningFold(initial,
    operation)
    \n}
    * Returns a sequence containing successive accumulation values generated by applying
    [operation] from left to right
    * to each element, its index in the original sequence and current accumulator value
    that starts with [initial] value.
    *
    * Note that `acc` value passed to [operation] function should not be mutated;
    * otherwise it would affect the
    previous value in resulting sequence.
    * The [initial] value should also be immutable (or should not be mutated)
    * as it may be passed to [operation] function later because of sequence's lazy nature.
    * @param [operation]
    function that takes the index of an element, current accumulator value
    * and the element itself, and calculates the
    next accumulator value.
    * The operation is _intermediate_ and _stateless_.
    * @sample
  
```



```

samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T, R>
Sequence<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the sequence.\n *\n * The operation is _terminal_.\n
*\n@Deprecated("Use sumOf instead.")\n
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Sequence<T>.sumBy(selector: (T) -> Int): Int {\n  var sum: Int = 0\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the sequence.\n *\n * The operation is _terminal_.\n *\n@Deprecated("Use sumOf
instead.")\n ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline
fun <T> Sequence<T>.sumByDouble(selector: (T) -> Double): Double {\n  var sum: Double = 0.0\n  for (element
in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the sequence.\n *\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.sumOf(selector: (T) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for
(element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the sequence.\n *\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Sequence<T>.sumOf(selector: (T) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the sequence.\n *\n * The operation
is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Sequence<T>.sumOf(selector: (T) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this)
{\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the sequence.\n *\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.sumOf(selector: (T) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
sequence.\n *\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedType
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.sumOf(selector: (T) -> ULong):
ULong {\n  var sum: ULong = 0.toULong()\n  for (element in this) {\n    sum += selector(element)\n  }\n
return sum\n}\n\n/**\n * Returns an original collection containing all the non-`null` elements, throwing an
[IllegalArgumentException] if there are any `null` elements.\n *\n * The operation is _intermediate_ and
_stateless_.\n *\npublic fun <T : Any> Sequence<T>.requireNonNulls(): Sequence<T> {\n  return map { it ? :
throw IllegalArgumentException("null element found in $this.") }\n}\n\n/**\n * Splits this sequence
into a sequence of lists each not exceeding the given [size].\n *\n * The last list in the resulting sequence may have
fewer elements than the given [size].\n *\n * @param size the number of elements to take in each list, must be
positive and can be greater than the number of elements in this sequence.\n *\n * The operation is _intermediate_

```

and `_stateful_`.
`@sample samples.collections.Collections.Transformations.chunked`
`*\n@SinceKotlin("1.2")\npublic fun <T> Sequence<T>.chunked(size: Int): Sequence<List<T>> {`
`return`
`windowed(size, size, partialWindows = true)\n}\n\n/**\n * Splits this sequence into several lists each not exceeding`
`the given [size]\n * and applies the given [transform] function to an each.\n * \n * @return sequence of results of the`
`[transform] applied to an each list.\n * \n * Note that the list passed to the [transform] function is ephemeral and is`
`valid only inside that function.\n * You should not store it or allow it to escape in some way, unless`
`you made a snapshot of it.\n * The last list may have fewer elements than the given [size].\n * \n * @param size the`
`number of elements to take in each list, must be positive and can be greater than the number of elements in this`
`sequence.\n *\n * The operation is _intermediate_ and _stateful_.
@sample
samples.text.Strings.chunkedTransform
*\n@SinceKotlin("1.2")\npublic fun <T, R>
Sequence<T>.chunked(size: Int, transform: (List<T>) -> R): Sequence<R> {
return
windowed(size, size,
partialWindows = true, transform = transform)\n}\n\n/**\n * Returns a sequence containing all elements of the
original sequence without the first occurrence of the given [element].\n * \n * The operation is _intermediate_ and
stateless.
@npublic operator fun <T> Sequence<T>.minus(element: T): Sequence<T> {
return
object:
Sequence<T> {
override fun iterator(): Iterator<T> {
var removed = false
return
this@minus.filter { if (!removed && it == element)
{ removed = true; false } else true }.iterator()\n }
}\n}\n\n/**\n * Returns a sequence containing all
elements of original sequence except the elements contained in the given [elements] array.\n * \n * Note that the
source sequence and the array being subtracted are iterated only when an `iterator` is requested from\n * the
resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.\n * \n * Before
Kotlin 1.6, the [elements] array may have been converted to a [HashSet] to speed up the operation, thus the elements
were required to have\n * a correct and stable implementation of `hashCode()` that didn't change between successive
invocations.\n * On JVM, you can enable this behavior back with the system property
`kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.\n *\n * The operation is _intermediate_ and
stateful.
@npublic operator fun <T> Sequence<T>.minus(elements: Array<out T>): Sequence<T> {
if
(elements.isEmpty()) return this\n return
object: Sequence<T> {
override fun iterator(): Iterator<T> {
val other = elements.convertToSetForSetOperation()\n return
this@minus.filterNot { it in other
}.iterator()\n }
}\n}\n\n/**\n * Returns a sequence containing all elements of original sequence except the
elements contained in the given [elements] collection.\n * \n * Note that the source sequence and the collection
being subtracted are iterated only when an `iterator` is requested from\n * the resulting sequence. Changing any of
them between successive calls to `iterator` may affect the result.\n * \n * Before Kotlin 1.6, the [elements] collection
may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have\n * a
correct and stable implementation of `hashCode()` that didn't change between successive invocations.\n * On JVM,
you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll`
set to `true`.\n *\n * The operation is _intermediate_ and _stateful_.
@npublic operator fun <T>
Sequence<T>.minus(elements: Iterable<T>): Sequence<T> {
return
object: Sequence<T> {
override fun
iterator(): Iterator<T> {
val other = elements.convertToSetForSetOperation()\n if (other.isEmpty())\n
return
this@minus.iterator()\n else\n
return
this@minus.filterNot { it in other }.iterator()\n
}\n}\n}\n\n/**\n * Returns a sequence containing all elements of original sequence except the elements
contained in the given [elements] sequence.\n * \n * Note that the source sequence and the sequence being
subtracted are iterated only when an `iterator` is requested from\n * the resulting sequence. Changing any of them
between successive calls to `iterator` may affect the result.\n * \n * The operation is _intermediate_ for this sequence
and _terminal_ and _stateful_
for the [elements] sequence.\n * \n * Before Kotlin 1.6, the [elements] sequence may have been converted to a
[HashSet] to speed up the operation, thus the elements were required to have\n * a correct and stable implementation
of `hashCode()` that didn't change between successive invocations.\n * On JVM, you can enable this behavior back
with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.\n *\n * @npublic operator
fun <T> Sequence<T>.minus(elements: Sequence<T>): Sequence<T> {
return
object: Sequence<T> {`

```

override fun iterator(): Iterator<T> {
    val other = elements.convertToSetForSetOperation()
    if (other.isEmpty())
        return this@minus.iterator()
    else
        return this@minus.filterNot { it in other }.iterator()
}

Returns a sequence containing all elements of the original sequence without the first occurrence of the given [element].

The operation is _intermediate_ and _stateless_.
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.minusElement(element: T): Sequence<T> {
    return minus(element)
}

Splits the original sequence into pair of lists, where *first* list contains elements for which [predicate] yielded `true`, while *second* list contains elements for which [predicate] yielded `false`.

The operation is _terminal_.
@sample samples.collections.Sequences.Transformations.partition
public inline fun <T> Sequence<T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {
    val first = ArrayList<T>()
    val second = ArrayList<T>()
    for (element in this) {
        if (predicate(element))
            first.add(element)
        else
            second.add(element)
    }
    return Pair(first, second)
}

Returns a sequence containing all elements of the original sequence and then the given [element].

The operation is _intermediate_ and _stateless_.
public operator fun <T> Sequence<T>.plus(element: T): Sequence<T> {
    return sequenceOf(this, sequenceOf(element)).flatten()
}

Returns a sequence containing all elements of original sequence and then all elements of the given [elements] array.

Note that the source sequence and the array being added are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is _intermediate_ and _stateless_.
public operator fun <T> Sequence<T>.plus(elements: Array<out T>): Sequence<T> {
    return this.plus(elements.asList())
}

Returns a sequence containing all elements of original sequence and then all elements of the given [elements] collection.

Note that the source sequence and the collection being added are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is _intermediate_ and _stateless_.
public operator fun <T> Sequence<T>.plus(elements: Iterable<T>): Sequence<T> {
    return sequenceOf(this, elements.asSequence()).flatten()
}

Returns a sequence containing all elements of original sequence and then all elements of the given [elements] sequence.

Note that the source sequence and the sequence being added are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is _intermediate_ and _stateless_.
public operator fun <T> Sequence<T>.plus(elements: Sequence<T>): Sequence<T> {
    return sequenceOf(this, elements).flatten()
}

Returns a sequence containing all elements of the original sequence and then the given [element].

The operation is _intermediate_ and _stateless_.
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.plusElement(element: T): Sequence<T> {
    return plus(element)
}

Returns a sequence of snapshots of the window of the given [size] sliding along this sequence with the given [step], where each snapshot is a list.

Several last lists may have fewer elements than the given [size].

Both [size] and [step] must be positive and can be greater than the number of elements in this sequence.

@param size the number of elements to take in each window
@param step the number of elements to move the window forward by on an each step, by default 1
@param partialWindows controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved

@sample samples.collections.Sequences.Transformations.takeWindows
@SinceKotlin("1.2")
public fun <T> Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<List<T>> {
    return windowedSequence(size, step, partialWindows, reuseBuffer = false)
}

Returns a sequence of results of applying the given [transform] function to an each list representing a view over the window of the given [size] sliding along this sequence with the given [step].

Note that the list passed to the [transform] function is ephemeral and is valid only inside that function.

You should not store it or allow it to escape in some way, unless you made a snapshot of it.

Several last lists may have fewer elements than the given [size].

Both [size] and [step] must be positive and can be greater than the number of elements in this sequence.

@param size the number of elements

```

to take in each window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample samples.collections.Sequences.Transformations.averageWindows\n * \n @SinceKotlin("1.2")\n public fun <T, R> Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) -> R): Sequence<R> {\n return windowedSequence(size, step, partialWindows, reuseBuffer = true).map(transform)\n }\n \n /**\n * Returns a sequence of values built from the elements of `this` sequence and the [other] sequence with the same index.\n * The resulting sequence ends as soon as the shortest input sequence ends.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample samples.collections.Sequences.Transformations.zip\n * \n public infix fun <T, R> Sequence<T>.zip(other: Sequence<R>): Sequence<Pair<T, R>> {\n return MergingSequence(this, other) { t1, t2 -> t1 to t2 }\n }\n \n /**\n * Returns a sequence of values built from the elements of `this` sequence and the [other] sequence with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The resulting sequence ends as soon as the shortest input sequence ends.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample samples.collections.Sequences.Transformations.zipWithTransform\n * \n public fun <T, R, V> Sequence<T>.zip(other: Sequence<R>, transform: (a: T, b: R) -> V): Sequence<V> {\n return MergingSequence(this, other, transform)\n }\n \n /**\n * Returns a sequence of pairs of each two adjacent elements in this sequence.\n * \n * The returned sequence is empty if this sequence contains less than two elements.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNext\n * \n @SinceKotlin("1.2")\n public fun <T> Sequence<T>.zipWithNext(): Sequence<Pair<T, T>> {\n return zipWithNext { a, b -> a to b }\n }\n \n /**\n * Returns a sequence containing the results of applying the given [transform] function to an each pair of two adjacent elements in this sequence.\n * \n * The returned sequence is empty if this sequence contains less than two elements.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n * \n @SinceKotlin("1.2")\n public fun <T, R> Sequence<T>.zipWithNext(transform: (a: T, b: T) -> R): Sequence<R> {\n return sequence result@ {\n val iterator = iterator()\n if (!iterator.hasNext()) return@result\n var current = iterator.next()\n while (iterator.hasNext()) {\n val next = iterator.next()\n yield(transform(current, next))\n current = next\n }\n }\n }\n \n /**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit] elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * The operation is _terminal_.\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n * \n public fun <T, A : Appendable> Sequence<T>.joinTo(buffer: A, separator: CharSequence = "\", \"", prefix: CharSequence = "\"\", postfix: CharSequence = "\"\", limit: Int = -1, truncated: CharSequence = "...\", transform: ((T) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n buffer.appendElement(element, transform)\n } else break\n }\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n }\n \n /**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit] elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * The operation is _terminal_.\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \n public fun <T> Sequence<T>.joinToString(separator: CharSequence = "\", \"", prefix: CharSequence = "\"\", postfix: CharSequence = "\"\", limit: Int = -1, truncated: CharSequence = "...\", transform: ((T) -> CharSequence)? =

```

null): String {\n    return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original sequence returning its
elements when being iterated.\n */\n\npublic fun <T> Sequence<T>.asIterable(): Iterable<T> {\n    return Iterable {\n
this.iterator() }\n}\n\n/**\n * Returns this sequence as a [Sequence].\n */\n\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.asSequence(): Sequence<T> {\n    return this\n}\n\n/**\n * Returns an average value
of elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("averageOfByte")\n\npublic fun Sequence<Byte>.average(): Double {\n    var sum:
Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("averageOfShort")\n\npublic fun Sequence<Short>.average(): Double {\n    var sum:
Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("averageOfInt")\n\npublic fun Sequence<Int>.average(): Double {\n    var sum: Double
= 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("averageOfLong")\n\npublic fun
Sequence<Long>.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n    checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("averageOfFloat")\n\npublic fun Sequence<Float>.average(): Double {\n    var sum:
Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n *
Returns an average value of elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("averageOfDouble")\n\npublic fun Sequence<Double>.average(): Double {\n    var sum:
Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n
checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
the sum of all elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("sumOfByte")\n\npublic fun Sequence<Byte>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the
sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("sumOfShort")\n\npublic fun
Sequence<Short>.sum(): Int {\n    var sum: Int = 0\n    for (element
in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the
sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("sumOfInt")\n\npublic fun
Sequence<Int>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("sumOfLong")\n\npublic fun Sequence<Long>.sum(): Long {\n    var sum: Long = 0L\n
for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in
the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("sumOfFloat")\n\npublic fun
Sequence<Float>.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n
}\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n */\n\n * The operation is _terminal_.\n\n
*\n\n@kotlin.jvm.JvmName("sumOfDouble")\n\npublic fun Sequence<Double>.sum(): Double {\n    var sum:
Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/\n\n * Copyright 2010-
2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n\n@file:kotlin.jvm.JvmName("SetsKt")\n\n\npackage
kotlin.collections\n\n/\n\n/\n\nNOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n\n// See:

```

```

https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
import kotlin.random.*
import kotlin.ranges.contains
import kotlin.ranges.reversed

/** Returns a set containing all elements of the original
set except the given [element].
The returned set preserves the element iteration order of the original set.
public operator fun <T> Set<T>.minus(element:
T): Set<T> {
    val result = LinkedHashSet<T>(mapCapacity(size))
    var removed = false
    return this.filterTo(result) { if (!removed && it == element) { removed = true; false } else true }
}

/** Returns a set containing all elements of the original set except the elements contained in the given [elements] array.
The returned set preserves the element iteration order of the original set.
Before Kotlin 1.6, the [elements] array may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have
a correct and stable implementation of `hashCode()` that didn't change between successive invocations.
On JVM, you can enable this behavior back with the system property
`kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.
public operator fun <T> Set<T>.minus(elements: Array<out T>): Set<T> {
    val result = LinkedHashSet<T>(this)
    result.removeAll(elements)
    return result
}

/** Returns a set containing all elements of the original set except the elements contained in the given [elements] collection.
The returned set preserves the element iteration order of the original set.
Before Kotlin 1.6, the [elements] collection may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have
a correct and stable implementation of `hashCode()` that didn't change between successive invocations.
On JVM, you can enable this behavior back with the system property
`kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.
public operator fun <T> Set<T>.minus(elements: Iterable<T>): Set<T> {
    val other = elements.convertToSetForSetOperationWith(this)
    if (other.isEmpty())
        return this.toSet()
    if (other is Set)
        return this.filterNotTo(LinkedHashSet<T>()) { it in other }
    val result = LinkedHashSet<T>(this)
    result.removeAll(other)
    return result
}

/** Returns a set containing all elements of the original set except the elements contained in the given [elements] sequence.
The returned set preserves the element iteration order of the original set.
Before Kotlin 1.6, the [elements] sequence may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have
a correct and stable implementation of `hashCode()` that didn't change between successive invocations.
On JVM, you can enable this behavior back with the system property
`kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.
public operator fun <T> Set<T>.minus(elements: Sequence<T>): Set<T> {
    val result = LinkedHashSet<T>(this)
    result.removeAll(elements)
    return result
}

/** Returns a set containing all elements of the original set except the given [element].
The returned set preserves the element iteration order of the original set.
public @kotlin.internal.InlineOnly
inline fun <T> Set<T>.minusElement(element: T): Set<T> {
    return minus(element)
}

/** Returns a set containing all elements of the original set and then the given [element] if it isn't already in this set.
The returned set preserves the element iteration order of the original set.
public operator fun <T> Set<T>.plus(element: T): Set<T> {
    val result = LinkedHashSet<T>(mapCapacity(size + 1))
    result.addAll(this)
    result.add(element)
    return result
}

/** Returns a set containing all elements of the original set and the given [elements] array, which aren't already in this set.
The returned set preserves the element iteration order of the original set.
public operator fun <T> Set<T>.plus(elements: Array<out T>): Set<T> {
    val result = LinkedHashSet<T>(mapCapacity(this.size + elements.size))
    result.addAll(this)
    result.addAll(elements)
    return result
}

/** Returns a set containing all elements of the original set and the given [elements] collection, which aren't already in this set.
The returned set preserves the element iteration order of the original set.
public operator fun <T> Set<T>.plus(elements: Iterable<T>): Set<T> {
    val result = LinkedHashSet<T>(mapCapacity(elements.collectionSizeOrNull()?.let { this.size + it } ?: this.size * 2))
    result.addAll(this)
    result.addAll(elements)
    return result
}

/** Returns a set containing all elements of the original set and the given [elements] sequence, which aren't already

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in this set.\n * \n * The returned set preserves the element iteration order of the original set.\n */\npublic operator fun
<T> Set<T>.plus(elements: Sequence<T>): Set<T> {\n    val result = LinkedHashSet<T>(mapCapacity(this.size *
2))\n    result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/**\n * Returns a set containing all
elements of the original set and then the given [element] if
it isn't already in this set.\n * \n * The returned set preserves the element iteration order of the original set.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> Set<T>.plusElement(element: T): Set<T> {\n    return
plus(element)\n}\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage
kotlin.text\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns a
character at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this char
sequence.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic expect fun
CharSequence.elementAt(index:
Int): Char\n\n/**\n * Returns a character at the given [index] or the result of calling the [defaultValue] function if
the [index] is out of bounds of this char sequence.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns a character at the given [index] or `null` if
the [index] is out of bounds of this char sequence.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.elementAtOrNull(index: Int): Char? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns the first
character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.find(predicate: (Char) -> Boolean): Char? {\n    return firstOrNull(predicate)\n}\n\n/**\n *
Returns the last character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.findLast(predicate: (Char) -> Boolean): Char? {\n    return lastOrNull(predicate)\n}\n\n/**\n *
Returns the first character.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n */\npublic
fun CharSequence.first(): Char {\n    if (isEmpty())\n        throw NoSuchElementException("Char sequence is
empty.")\n    return this[0]\n}\n\n/**\n * Returns the first character matching the given [predicate].\n * @throws
[NoSuchElementException] if no such character is found.\n */\npublic inline fun CharSequence.first(predicate:
(Char) -> Boolean): Char {\n    for (element in this) if (predicate(element)) return
element\n    throw NoSuchElementException("Char sequence contains no character matching the
predicate.")\n}\n\n/**\n * Returns the first non-null value produced by [transform] function being applied to
characters of this char sequence in iteration order,\n * or throws [NoSuchElementException] if no non-null value
was produced.\n * \n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n
*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <R : Any>
CharSequence.firstNotNullOf(transform: (Char) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the char sequence was transformed to a non-null value.")\n}\n\n/**\n *
Returns the first non-null value produced by [transform] function being applied to characters of this char sequence in
iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Any> CharSequence.firstNotNullOfOrNull(transform: (Char) -> R?): R? {\n    for (element in this)
{\n        val result = transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return
null\n}\n\n/**\n * Returns the first character, or `null` if the char sequence is empty.\n */\npublic fun

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CharSequence.firstOrNull(): Char? {\n  return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first
character matching the given [predicate], or `null` if character was not found.\n */\npublic inline fun
CharSequence.firstOrNull(predicate: (Char) -> Boolean): Char? {\n  for (element in this) if (predicate(element))
return element\n  return null\n}\n\n/**\n * Returns a character at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this char sequence.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.getOrNull(index:
Int, defaultValue: (Int) -> Char): Char {\n  return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns a character at the given [index] or `null` if the [index] is out of bounds of
this char sequence.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n */\npublic fun
CharSequence.getOrNull(index: Int): Char? {\n  return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns index of the first character matching the given [predicate], or -1 if the char sequence does
not contain such character.\n */\npublic inline fun CharSequence.indexOfFirst(predicate: (Char) -> Boolean): Int {\n
  for (index in indices) {\n    if (predicate(this[index])) {\n      return index\n    }\n  }\n  return -
1\n}\n\n/**\n * Returns index of the last character matching the given [predicate], or -1 if the char sequence does
not contain such character.\n */\npublic inline fun CharSequence.indexOfLast(predicate:
(Char) -> Boolean): Int {\n  for (index in indices.reversed()) {\n    if (predicate(this[index])) {\n      return
index\n    }\n  }\n  return -1\n}\n\n/**\n * Returns the last character.\n * \n * @throws
NoSuchElementException if the char sequence is empty.\n * \n * @sample samples.text.Strings.last\n */\npublic fun
CharSequence.last(): Char {\n  if (isEmpty())\n    throw NoSuchElementException("Char sequence is
empty.")\n  return this[lastIndex]\n}\n\n/**\n * Returns the last character matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such character is found.\n * \n * @sample samples.text.Strings.last\n
*/\npublic inline fun CharSequence.last(predicate: (Char) -> Boolean): Char {\n  for (index in
this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n
throw NoSuchElementException("Char sequence contains no character matching the predicate.")\n}\n\n/**\n
* Returns the last character, or `null` if the char sequence is empty.\n * \n * @sample samples.text.Strings.last\n
*/\npublic fun CharSequence.lastOrNull(): Char? {\n  return if (isEmpty()) null else this[length - 1]\n}\n\n/**\n
* Returns the last character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample
samples.text.Strings.last\n */\npublic inline fun CharSequence.lastOrNull(predicate: (Char) -> Boolean): Char? {\n
  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return element\n
  }\n  return null\n}\n\n/**\n * Returns a random character from this char sequence.\n * \n * @throws
NoSuchElementException if this char sequence is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.random(): Char {\n
  return random(Random)\n}\n\n/**\n * Returns a random character from this char sequence using the specified
source of randomness.\n * \n * @throws NoSuchElementException if this char sequence is empty.\n */\n@SinceKotlin("1.3")\npublic fun
CharSequence.random(random: Random): Char {\n  if (isEmpty())\n    throw NoSuchElementException("Char
sequence is empty.")\n  return get(random.nextInt(length))\n}\n\n/**\n * Returns a random character from this
char sequence, or `null` if this char sequence is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.randomOrNull(): Char? {\n  return randomOrNull(Random)\n}\n\n/**\n * Returns a
random character from this char sequence using the specified source of randomness, or `null` if this char sequence is
empty.\n * \n * @SinceKotlin("1.4")\n * @WasExperimental(ExperimentalStdlibApi::class)\n */\npublic fun
CharSequence.randomOrNull(random: Random): Char? {\n  if (isEmpty())\n    return null\n  return
get(random.nextInt(length))\n}\n\n/**\n * Returns the single character,
or throws an exception if the char sequence is empty or has more than one character.\n */\npublic fun
CharSequence.single(): Char {\n  return when (length) {\n    0 -> throw NoSuchElementException("Char
sequence is empty.")\n    1 -> this[0]\n    else -> throw IllegalArgumentException("Char sequence has more
than one element.")\n  }\n}\n\n/**\n * Returns the single character matching the given [predicate], or throws

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exception if there is no or more than one matching character.\n */\npublic inline fun CharSequence.single(predicate:
(Char) -> Boolean): Char {\n    var single: Char? = null\n    var found = false\n    for (element in this) {\n        if
(predicate(element)) {\n            if (found) throw IllegalArgumentException("Char sequence contains more than one
matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw
NoSuchElementException("Char sequence contains no character matching the predicate.")\n
    @Suppress("UNCHECKED_CAST")\n    return single as Char\n}\n\n/**\n * Returns single character, or `null`
if the char sequence is empty or has more than one character.\n */\npublic fun CharSequence.singleOrNull(): Char?
{\n    return if (length == 1) this[0] else null\n}\n\n/**\n * Returns the single character matching the given
[predicate], or `null` if character was not found or more than one character was found.\n */\npublic inline fun
CharSequence.singleOrNull(predicate: (Char) -> Boolean): Char? {\n    var single: Char? = null\n    var found =
false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single =
element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a
subsequence of this char sequence with the first [n] characters removed.\n * \n * @throws
IllegalArgumentOutOfRangeException if [n] is negative.\n * \n * @sample samples.text.Strings.drop\n
*/\npublic fun CharSequence.drop(n: Int): CharSequence {\n    require(n >= 0) { "Requested character count $n is
less than zero." }\n    return subSequence(n.coerceAtMost(length), length)\n}\n\n/**\n * Returns a string with the
first [n] characters removed.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.text.Strings.drop\n */\npublic fun String.drop(n: Int): String {\n    require(n >= 0) { "Requested character
count $n is less than zero." }\n    return substring(n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of
this char sequence with the last [n] characters removed.\n * \n * @throws IllegalArgumentException if [n] is
negative.\n * \n * @sample samples.text.Strings.drop\n */\npublic fun CharSequence.dropLast(n: Int):
CharSequence {\n    require(n >= 0) { "Requested character count $n is less than zero." }\n    return take((length -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a string with the last [n] characters removed.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.drop\n */\npublic
fun String.dropLast(n: Int): String {\n    require(n >= 0) { "Requested character count $n is less than zero." }\n
return take((length - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a subsequence of this char sequence containing all
characters except last characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.drop\n
*/\npublic inline fun CharSequence.dropLastWhile(predicate: (Char) -> Boolean): CharSequence {\n    for (index in
lastIndex downTo 0)\n        if (!predicate(this[index]))\n            return subSequence(0, index + 1)\n    return
""\n}\n\n/**\n * Returns a string containing all characters except last characters that satisfy the given [predicate].\n
* \n * @sample samples.text.Strings.drop\n */\npublic inline fun String.dropLastWhile(predicate: (Char) ->
Boolean): String {\n    for (index in lastIndex downTo 0)\n        if (!predicate(this[index]))\n            return
substring(0, index + 1)\n    return ""\n}\n\n/**\n * Returns a subsequence of this char sequence
containing all characters except first characters that satisfy the given [predicate].\n * \n * @sample
samples.text.Strings.drop\n */\npublic inline fun CharSequence.dropWhile(predicate: (Char) -> Boolean):
CharSequence {\n    for (index in this.indices)\n        if (!predicate(this[index]))\n            return subSequence(index,
length)\n    return ""\n}\n\n/**\n * Returns a string containing all characters except first characters that satisfy the
given [predicate].\n * \n * @sample samples.text.Strings.drop\n */\npublic inline fun String.dropWhile(predicate:
(Char) -> Boolean): String {\n    for (index in this.indices)\n        if (!predicate(this[index]))\n            return
substring(index)\n    return ""\n}\n\n/**\n * Returns a char sequence containing only those characters from the
original char sequence that match the given [predicate].\n
* \n * @sample samples.text.Strings.filter\n */\npublic inline fun CharSequence.filter(predicate: (Char) ->
Boolean): CharSequence {\n    return filterTo(StringBuilder(), predicate)\n}\n\n/**\n * Returns a string containing
only those characters from the original string that match the given [predicate].\n * \n * @sample
samples.text.Strings.filter\n */\npublic inline fun String.filter(predicate: (Char) -> Boolean): String {\n    return
filterTo(StringBuilder(), predicate).toString()\n}\n\n/**\n * Returns a char sequence containing only those
characters from the original char sequence that match the given [predicate].\n * @param [predicate] function that
takes the index of a character and the character itself\n * and returns the result of predicate evaluation on the

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character.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n *^\npublic inline fun
CharSequence.filterIndexed(predicate: (index: Int, Char) -> Boolean): CharSequence {\n return
filterIndexedTo(StringBuilder(),
predicate)\n}\n\n/**\n * Returns a string containing only those characters from the original string that match the
given [predicate].\n * @param [predicate] function that takes the index of a character and the character itself\n * and
returns the result of predicate evaluation on the character.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n *^\npublic inline fun String.filterIndexed(predicate: (index:
Int, Char) -> Boolean): String {\n return filterIndexedTo(StringBuilder(), predicate).toString()\n}\n\n/**\n *
Appends all characters matching the given [predicate] to the given [destination].\n * @param [predicate] function
that takes the index of a character and the character itself\n * and returns the result of predicate evaluation on the
character.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n *^\npublic inline fun <C :
Appendable> CharSequence.filterIndexedTo(destination: C, predicate: (index: Int, Char) -> Boolean):
C {\n forEachIndexed { index, element ->\n if (predicate(index, element)) destination.append(element)\n
}\n return destination\n}\n\n/**\n * Returns a char sequence containing only those characters from the original
char sequence that do not match the given [predicate].\n * \n * @sample samples.text.Strings.filterNot\n *^\npublic
inline fun CharSequence.filterNot(predicate: (Char) -> Boolean): CharSequence {\n return
filterNotTo(StringBuilder(), predicate)\n}\n\n/**\n * Returns a string containing only those characters from the
original string that do not match the given [predicate].\n * \n * @sample samples.text.Strings.filterNot\n *^\npublic
inline fun String.filterNot(predicate: (Char) -> Boolean): String {\n return filterNotTo(StringBuilder(),
predicate).toString()\n}\n\n/**\n * Appends all characters not matching the given [predicate] to the given
[destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun
<C : Appendable> CharSequence.filterNotTo(destination: C, predicate: (Char) -> Boolean): C {\n for (element in
this) if (!predicate(element)) destination.append(element)\n return destination\n}\n\n/**\n * Appends all characters
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : Appendable>
CharSequence.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n for (index in 0 until length) {\n val
element = get(index)\n if (predicate(element)) destination.append(element)\n }\n return
destination\n}\n\n/**\n * Returns a char sequence containing characters of the original char sequence at the
specified range of [indices].\n *^\npublic fun CharSequence.slice(indices: IntRange): CharSequence {\n if
(indices.isEmpty()) return ""\n return subSequence(indices)\n}\n\n/**\n * Returns a string containing characters
of the original string at the specified
range of [indices].\n *^\npublic fun String.slice(indices: IntRange): String {\n if (indices.isEmpty()) return ""\n
return substring(indices)\n}\n\n/**\n * Returns a char sequence containing characters of the original char sequence
at specified [indices].\n *^\npublic fun CharSequence.slice(indices: Iterable<Int>): CharSequence {\n val size =
indices.collectionSizeOrDefault(10)\n if (size == 0) return ""\n val result = StringBuilder(size)\n for (i in
indices) {\n result.append(get(i))\n }\n return result\n}\n\n/**\n * Returns a string containing characters of
the original string at specified [indices].\n *^\n@kotlin.internal.InlineOnly\npublic inline fun String.slice(indices:
Iterable<Int>): String {\n return (this as CharSequence).slice(indices).toString()\n}\n\n/**\n * Returns a
subsequence of this char sequence containing the first [n] characters from this char sequence, or the entire char
sequence if this char sequence is shorter.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n *^\npublic fun
CharSequence.take(n: Int): CharSequence {\n require(n >= 0) { "Requested character count $n is less than zero."
}\n return subSequence(0, n.coerceAtMost(length))\n}\n\n/**\n * Returns a string containing the first [n]
characters from this string, or the entire string if this string is shorter.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.text.Strings.take\n *^\npublic fun String.take(n: Int): String {\n require(n
>= 0) { "Requested character count $n is less than zero." }\n return substring(0,
n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of this char sequence containing the last [n]
characters from this char sequence, or the entire char sequence if this char sequence is shorter.\n * \n * @throws

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IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n */\npublic fun
CharSequence.takeLast(n:
    Int): CharSequence {\n    require(n >= 0) { "\"Requested character count $n is less than zero.\""}\n    val length =
length\n    return subSequence(length - n.coerceAtMost(length), length)\n}\n\n/**\n * Returns a string containing
the last [n] characters from this string, or the entire string if this string is shorter.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n */\npublic fun
String.takeLast(n: Int): String {\n    require(n >= 0) { "\"Requested character count $n is less than zero.\""}\n    val
length = length\n    return substring(length - n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of this
char sequence containing last characters that satisfy the given [predicate].\n * \n * @sample
samples.text.Strings.take\n */\npublic inline fun CharSequence.takeLastWhile(predicate: (Char) -> Boolean):
CharSequence {\n    for (index in lastIndex downTo 0) {\n        if (!predicate(this[index])) {\n
            return subSequence(index + 1, length)\n        }\n    }\n    return subSequence(0, length)\n}\n\n/**\n * Returns
a string containing last characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.take\n
*/\npublic inline fun String.takeLastWhile(predicate: (Char) -> Boolean): String {\n    for (index in lastIndex
downTo 0) {\n        if (!predicate(this[index])) {\n            return substring(index + 1)\n        }\n    }\n    return
this\n}\n\n/**\n * Returns a subsequence of this char sequence containing the first characters that satisfy the given
[predicate].\n * \n * @sample samples.text.Strings.take\n */\npublic inline fun CharSequence.takeWhile(predicate:
(Char) -> Boolean): CharSequence {\n    for (index in 0 until length)\n        if (!predicate(get(index))) {\n
            return subSequence(0, index)\n        }\n    return subSequence(0, length)\n}\n\n/**\n * Returns a string containing
the first characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.take\n */\npublic inline fun String.takeWhile(predicate: (Char) -> Boolean):
String {\n    for (index in 0 until length)\n        if (!predicate(get(index))) {\n            return substring(0, index)\n
        }\n    return this\n}\n\n/**\n * Returns a char sequence with characters in reversed order.\n */\npublic fun
CharSequence.reversed(): CharSequence {\n    return StringBuilder(this).reverse()\n}\n\n/**\n * Returns a string
with characters in reversed order.\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.reversed(): String {\n
return (this as CharSequence).reversed().toString()\n}\n\n/**\n * Returns a [Map] containing key-value pairs
provided by [transform] function\n * applied to characters of the given char sequence.\n * \n * If any of two pairs
would have the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original char sequence.\n * \n * @sample samples.text.Strings.associate\n */\npublic inline fun <K, V>
CharSequence.associate(transform: (Char) -> Pair<K, V>): Map<K, V> {\n    val
capacity = mapCapacity(length).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing the characters from the given char sequence indexed by the
key\n * returned from [keySelector] function applied to each character.\n * \n * If any two characters would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry
iteration order of the original char sequence.\n * \n * @sample samples.text.Strings.associateBy\n */\npublic inline
fun <K> CharSequence.associateBy(keySelector: (Char) -> K): Map<K, Char> {\n    val capacity =
mapCapacity(length).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Char>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform] and indexed by
[keySelector]
functions applied to characters of the given char sequence.\n * \n * If any two characters would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original char sequence.\n * \n * @sample samples.text.Strings.associateByWithValueTransform\n */\npublic inline fun <K, V>
CharSequence.associateBy(keySelector: (Char) -> K, valueTransform: (Char) -> V):
Map<K, V> {\n    val capacity = mapCapacity(length).coerceAtLeast(16)\n    return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function
applied to each character of the given char sequence\n * and value is the character itself.\n * \n * If any two
characters would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample

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samples.text.Strings.associateByTo\n
*/\npublic inline fun <K, M : MutableMap<in K, in Char>> CharSequence.associateByTo(destination: M,
keySelector: (Char) -> K): M {\n  for (element in this) {\n    destination.put(keySelector(element), element)\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function
applied to characters of the given char sequence.\n * \n * If any two characters would have the same key returned by
[keySelector] the last one gets added to the map.\n * \n * @sample
samples.text.Strings.associateByToWithValueTransform\n
*/\npublic inline fun <K, V, M : MutableMap<in K, in
V>> CharSequence.associateByTo(destination: M, keySelector: (Char) -> K, valueTransform: (Char) -> V): M {\n
for (element in this) {\n  destination.put(keySelector(element), valueTransform(element))\n } \n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function
applied to each character of the given char sequence.\n * \n * If any of two pairs would have the same key the last
one gets added to the map.\n * \n * @sample
samples.text.Strings.associateTo\n
*/\npublic inline fun <K, V, M :
MutableMap<in K, in V>> CharSequence.associateTo(destination: M, transform: (Char) -> Pair<K, V>): M {\n
for (element in this) {\n  destination += transform(element)\n } \n return destination\n}\n\n/**\n * Returns a
[Map] where keys are characters from the given char sequence and values are\n * produced by the [valueSelector]
function applied to each character.\n * \n * If any two characters are equal, the last one gets added to the map.\n * \n
* The returned map preserves the entry iteration order of the original char sequence.\n * \n * @sample
samples.text.Strings.associateWith\n
*/\n@SinceKotlin("1.3")\npublic inline
fun <V> CharSequence.associateWith(valueSelector: (Char) -> V): Map<Char, V> {\n  val result =
LinkedHashMap<Char, V>(mapCapacity(length.coerceAtMost(128)).coerceAtLeast(16))\n  return
associateWithTo(result, valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-
value pairs for each character of the given char sequence,\n * where key is the character itself and value is provided
by the [valueSelector] function applied to that key.\n * \n * If any two characters are equal, the last one overwrites
the former value in the map.\n * \n * @sample
samples.text.Strings.associateWithTo\n
*/\n@SinceKotlin("1.3")\npublic inline fun <V, M : MutableMap<in Char, in V>>
CharSequence.associateWithTo(destination: M, valueSelector: (Char) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n } \n return destination\n}\n\n/**\n * Appends all characters to
the given [destination] collection.\n */\npublic fun
<C : MutableCollection<in Char>> CharSequence.toCollection(destination: C): C {\n  for (item in this) {\n
destination.add(item)\n } \n return destination\n}\n\n/**\n * Returns a new [HashSet] of all characters.\n */\npublic fun
CharSequence.toHashSet(): HashSet<Char> {\n  return
toCollection(HashSet<Char>(mapCapacity(length.coerceAtMost(128))))\n}\n\n/**\n * Returns a [List] containing
all characters.\n */\npublic fun CharSequence.toList(): List<Char> {\n  return when (length) {\n    0 ->
emptyList()\n    1 -> listOf(this[0])\n    else -> this.toMutableList()\n  }\n}\n\n/**\n * Returns a new
[MutableList] filled with all characters of this char sequence.\n */\npublic fun CharSequence.toMutableList():
MutableList<Char> {\n  return toCollection(ArrayList<Char>(length))\n}\n\n/**\n * Returns a [Set] of all
characters.\n * \n * The returned set preserves the element iteration order of the original char sequence.\n */\npublic
fun CharSequence.toSet(): Set<Char>
{\n  return when (length) {\n    0 -> emptySet()\n    1 -> setOf(this[0])\n    else ->
toCollection(LinkedHashSet<Char>(mapCapacity(length.coerceAtMost(128))))\n  }\n}\n\n/**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each character of original char
sequence.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*/\npublic inline fun <R>
CharSequence.flatMap(transform: (Char) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each character\n * and its index in the original char sequence.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharSequence.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each character\n * and its index in the original char sequence, to the given
[destination].\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <R, C : MutableCollection<in R>> CharSequence.flatMapIndexedTo(destination: C, transform: (index:
Int, Char) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each character

```

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of original char sequence, to the given [destination].\n *\npublic inline fun <R, C : MutableCollection<in R>>
CharSequence.flatMapTo(destination: C, transform: (Char) -> Iterable<R>): C {\n for (element in this) {\n val
list = transform(element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Groups characters
of the original char sequence by the key returned by the given [keySelector] function\n * applied to each character
and returns a map where each group key is associated with a list of corresponding characters.\n * \n * The returned
map preserves the entry iteration order of the keys produced from the original char sequence.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n *\npublic inline fun <K>

```

```

CharSequence.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {\n return
groupByTo(LinkedHashMap<K, MutableList<Char>>(), keySelector)\n}\n\n/**\n * Groups values returned by the
[valueTransform] function

```

```

applied to each character of the original char sequence\n * by the key returned by the given [keySelector] function
applied to the character\n * and returns a map where each group key is associated with a list of corresponding
values.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original char
sequence.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n *\npublic

```

```

inline fun <K, V> CharSequence.groupBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K,
List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups characters of the original char sequence by the key returned by the given
[keySelector] function\n * applied to each character and puts to the [destination] map each group key associated
with a list of corresponding characters.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n

```

```

*\npublic inline fun <K, M : MutableMap<in K, MutableList<Char>>> CharSequence.groupByTo(destination: M,
keySelector: (Char) -> K): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<Char>() }\n list.add(element)\n }\n return destination\n}\n\n/**\n *
Groups values returned by the [valueTransform] function applied to each character of the original char sequence\n *
by the key returned by the given [keySelector] function applied to the character\n * and puts to the [destination]
map each group key associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n *
@sample samples.collections.Collections.Transformations.groupByKeysAndValues\n *\npublic inline fun <K, V,

```

```

M : MutableMap<in K, MutableList<V>>> CharSequence.groupByTo(destination: M, keySelector: (Char) -> K,
valueTransform: (Char) -> V): M {\n for (element in this) {\n val key
= keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n }\n return destination\n}\n\n/**\n * Creates a [Grouping] source from a
char sequence to be used later with one of group-and-fold operations\n * using the specified [keySelector] function
to extract a key from each character.\n * \n * @sample samples.collections.Grouping.groupingByEachCount\n

```

```

*\n@SinceKotlin("1.1")\npublic inline fun <K> CharSequence.groupingBy(crossinline keySelector: (Char) -> K):
Grouping<Char, K> {\n return object : Grouping<Char, K> {\n override fun sourceIterator(): Iterator<Char>
= this@groupingBy.iterator()\n override fun keyOf(element: Char): K = keySelector(element)\n }\n}\n\n/**\n

```

* Returns a list containing the results of applying the given [transform] function\n * to each character in the original char sequence.\n * \n * @sample samples.text.Strings.map\n */\npublic inline fun <R>
CharSequence.map(transform:
(Char) -> R): List<R> {\n return mapTo(ArrayList<R>(length), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each character and its index in the original char sequence.\n * @param [transform] function that takes the index of a character and the character itself\n * and returns the result of the transform applied to the character.\n */\npublic inline fun <R>
CharSequence.mapIndexed(transform: (index: Int, Char) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(length), transform)\n}\n\n/**\n * Returns a list containing only the non-null results of applying the given [transform] function\n * to each character and its index in the original char sequence.\n * @param [transform] function that takes the index of a character and the character itself\n * and returns the result of the transform applied to the character.\n */\npublic inline fun <R : Any>
CharSequence.mapIndexedNotNull(transform: (index: Int, Char)
-> R?): List<R> {\n return mapIndexedNotNullTo(ArrayList<R>(), transform)\n}\n\n/**\n * Applies the given [transform] function to each character and its index in the original char sequence\n * and appends only the non-null results to the given [destination].\n * @param [transform] function that takes the index of a character and the character itself\n * and returns the result of the transform applied to the character.\n */\npublic inline fun <R : Any,
C : MutableCollection<in R>> CharSequence.mapIndexedNotNullTo(destination: C, transform: (index: Int, Char) -
> R?): C {\n forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }\n return
destination\n}\n\n/**\n * Applies the given [transform] function to each character and its index in the original char
sequence\n * and appends the results to the given [destination].\n * @param [transform] function that takes the
index of a character and the character itself\n * and returns the result of the
transform applied to the character.\n */\npublic inline fun <R, C : MutableCollection<in R>>
CharSequence.mapIndexedTo(destination: C, transform: (index: Int, Char) -> R): C {\n var index = 0\n for (item
in this)\n destination.add(transform(index++, item))\n return destination\n}\n\n/**\n * Returns a list
containing only the non-null results of applying the given [transform] function\n * to each character in the original
char sequence.\n * \n * @sample samples.collections.Collections.Transformations.mapNotNull\n */\npublic inline
fun <R : Any> CharSequence.mapNotNull(transform: (Char) -> R?): List<R> {\n return
mapNotNullTo(ArrayList<R>(), transform)\n}\n\n/**\n * Applies the given [transform] function to each character
in the original char sequence\n * and appends only the non-null results to the given [destination].\n */\npublic inline
fun <R : Any, C : MutableCollection<in R>> CharSequence.mapNotNullTo(destination: C, transform: (Char) ->
R?): C {\n forEach {\n element -> transform(element)?.let { destination.add(it) } }\n return destination\n}\n\n/**\n * Applies the given
[transform] function to each character of the original char sequence\n * and appends the results to the given
[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> CharSequence.mapTo(destination: C,
transform: (Char) -> R): C {\n for (item in this)\n destination.add(transform(item))\n return
destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each character of the original char sequence\n * into an
[IndexedValue] containing the index of that character and the character itself.\n */\npublic fun
CharSequence.withIndex(): Iterable<IndexedValue<Char>> {\n return IndexingIterable { iterator() }\n}\n\n/**\n * Returns `true` if all characters match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n */\npublic inline fun CharSequence.all(predicate: (Char) ->
Boolean): Boolean {\n for (element in
this) if (!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if char sequence has at least
one character.\n * \n * @sample samples.collections.Collections.Aggregates.any\n */\npublic fun
CharSequence.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if at least one character matches
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n */\npublic
inline fun CharSequence.any(predicate: (Char) -> Boolean): Boolean {\n for (element in this) if
(predicate(element)) return true\n return false\n}\n\n/**\n * Returns the length of this char sequence.\n */\n

```

*\/n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.count(): Int {\n  return length\n}\n\n/**\n * Returns the number of characters matching the given [predicate].\n */\npublic inline fun CharSequence.count(predicate: (Char) -> Boolean): Int {\n  var count = 0\n  for (element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each character.\n */\n * Returns the specified [initial] value if the char sequence is empty.\n */\n * @param [operation] function that takes current accumulator value and a character, and calculates the next accumulator value.\n */\npublic inline fun <R> CharSequence.fold(initial: R, operation: (acc: R, Char) -> R): R {\n  var accumulator = initial\n  for (element in this) accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each character with its index in the original char sequence.\n */\n * Returns the specified [initial] value if the char sequence is empty.\n */\n * @param [operation] function that takes the index of a character, current accumulator value\n * and the character itself, and calculates the next accumulator value.\n */\npublic inline fun <R> CharSequence.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): R {\n  var index = 0\n  var accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each character and current accumulator value.\n */\n * Returns the specified [initial] value if the char sequence is empty.\n */\n * @param [operation] function that takes a character and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R> CharSequence.foldRight(initial: R, operation: (Char, acc: R) -> R): R {\n  var index = lastIndex\n  var accumulator = initial\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each character with its index in the original char sequence and current accumulator value.\n */\n * Returns the specified [initial] value if the char sequence is empty.\n */\n * @param [operation] function that takes the index of a character, the character itself\n * and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R> CharSequence.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {\n  var index = lastIndex\n  var accumulator = initial\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Performs the given [action] on each character.\n */\npublic inline fun CharSequence.forEach(action: (Char) -> Unit): Unit {\n  for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each character, providing sequential index with the character.\n */\n * @param [action] function that takes the index of a character and the character itself\n * and performs the action on the character.\n */\npublic inline fun CharSequence.forEachIndexed(action: (index: Int, Char) -> Unit): Unit {\n  var index = 0\n  for (item in this) action(index++, item)\n}\n\n/**\n * Returns the largest character.\n */\n * @throws NoSuchElementException if the char sequence is empty.\n */\n\n*\/n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharSequence.max(): Char {\n  if (isEmpty()) throw NoSuchElementException()\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the first character yielding the largest value of the given function.\n */\n * @throws NoSuchElementException if the char sequence is empty.\n */\n * @sample samples.collections.Collections.Aggregates.maxBy\n\n*\/n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrNull")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> CharSequence.maxBy(selector: (Char) -> R): Char {\n  if (isEmpty()) throw NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return maxElem\n  var maxValue = selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first character yielding the largest value of the given function or `null` if there are no characters.\n */\n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
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*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> CharSequence.maxByOrNull(selector: (Char) -> R): Char? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each character in the char sequence.\n * \n * If any of values produced by [selector] function is `NaN`, the\n * returned result is `NaN`.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOf(selector: (Char) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values\n * produced by [selector] function\n * applied to each character in the char sequence.\n * \n * If any of values produced\n * by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the char\n * sequence is empty.\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOf(selector: (Char) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return\n    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence.\n * \n * @throws NoSuchElementException\n * if the char sequence is empty.\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nCharSequence.maxOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n           \n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values\n * produced by [selector] function\n * applied to each character in the char sequence or `null` if there are no\n * characters.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOfOrNull(selector:\n(Char) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in\n    1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return\n    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence or `null` if there are no characters.\n * \n * If any of values produced by\n * [selector] function is `NaN`, the returned result is `NaN`.\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOfOrNull(selector:\n(Char) -> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in\n    1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return\n    maxValue\n}\n\n/**\n * Returns the largest value\n * among all values produced by [selector] function\n * applied to each character in the char sequence or `null` if there\n * are no characters.\n */\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nCharSequence.maxOfOrNull(selector: (Char) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue =\n    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n           \n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided

```



```

[comparator]\n * among all values produced by [selector] function applied to each character in the char sequence.\n
* \n * @throws NoSuchElementException if the char sequence is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharSequence.maxOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {\n if
(isEmpty()) throw NoSuchElementException()\n var max = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (comparator.compare(max, v) < 0) {\n max = v\n }\n }\n
return max\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all
values produced by [selector] function applied to each character in the char sequence or `null` if there are no
characters.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
CharSequence.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n if (isEmpty())
return null\n var max = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (comparator.compare(max, v) < 0) {\n max = v\n }\n }\n
return max\n}\n\n/**\n * Returns the largest character or `null` if there are no characters.\n
*\n@SinceKotlin("1.4")\npublic fun CharSequence.maxOrNull(): Char? {\n if (isEmpty()) return null\n var
max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return
max\n}\n\n/**\n * Returns the first character having the largest value according to the provided [comparator].\n *
*\n * @throws NoSuchElementException if the char sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun CharSequence.maxWith(comparator: Comparator<in Char>): Char {\n if (isEmpty())
throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0)\n max = e\n }\n return max\n}\n\n/**\n * Returns the first character having the largest value according to the
provided [comparator] or `null` if there are no characters.\n
*\n@SinceKotlin("1.4")\npublic fun
CharSequence.maxWithOrNull(comparator: Comparator<in Char>): Char? {\n if (isEmpty()) return null\n var
max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n
}\n return max\n}\n\n/**\n * Returns the smallest character.\n * \n * @throws NoSuchElementException if the
char sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun CharSequence.min(): Char {\n if (isEmpty()) throw NoSuchElementException()\n var min =
this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n *
Returns the first character yielding the smallest value of the given function.\n
*\n * \n * @throws NoSuchElementException if the char sequence is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <R : Comparable<R>> CharSequence.minBy(selector: (Char) -> R): Char {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var min = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (min > v) {\n minElem = e\n min = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first character yielding the smallest value of the given function or
`null` if there are no characters.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>>
CharSequence.minByOrNull(selector: (Char) -> R): Char? {\n if (isEmpty()) return null\n var minElem =
this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var min =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (min > v)\n
{\n minElem = e\n min = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the smallest

```

value among all values produced by [selector] function\n * applied to each character in the char sequence.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOf(selector: (Char) ->
Double): Double {\n    if (isEmpty()) throw
NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each character in the char sequence.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the char sequence is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOf(selector: (Char) ->
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each character in the char sequence.\n * \n *
@throws NoSuchElementException if the char sequence is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharSequence.minOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each character in the char sequence or `null` if there are no
characters.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.minOfOrNull(selector: (Char) -> Double): Double? {\n    if (isEmpty()) return null\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue =
minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each character in the char sequence or `null` if there are no characters.\n * \n *
If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

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```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOfOrNull(selector:
(Char) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex)
{\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each character in the char
sequence or `null` if there are no characters.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharSequence.minOfOrNull(selector: (Char) -> R): R? {\n    if (isEmpty()) return null\n    var minValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each character in the char sequence.\n
 * \n * @throws NoSuchElementException if the
char sequence is empty.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharSequence.minOfWith(comparator:

```

```

Comparator<in R>, selector: (Char) -> R): R { \n  if (isEmpty()) throw NoSuchElementException()\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) { \n    val v = selector(this[i])\n    if
(comparator.compare(minValue, v) > 0) { \n      minValue = v\n    } \n  }\n  return minValue\n}\n\n/**
Returns the smallest value according to the provided [comparator] among all values produced by [selector]
function applied to each character in the char sequence or `null` if there are no characters.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
CharSequence.minOfWithOrNull(comparator: Comparator<in
R>, selector: (Char) -> R): R? { \n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in
1..lastIndex) { \n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) { \n      minValue =
v\n    } \n  }\n  return minValue\n}\n\n/**
Returns the smallest character or `null` if there are no
characters.\n
*/\n\n@SinceKotlin("1.4")\npublic fun CharSequence.minOrNull(): Char? { \n  if (isEmpty()) return
null\n  var min = this[0]\n  for (i in 1..lastIndex) { \n    val e = this[i]\n    if (min > e) min = e\n  }\n  return
min\n}\n\n/**
Returns the first character having the smallest value according to the provided [comparator].\n
*/\n\n * @throws NoSuchElementException if the char sequence is empty.\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun CharSequence.minWith(comparator: Comparator<in Char>): Char { \n  if (isEmpty()) throw
NoSuchElementException()\n  var min = this[0]\n  for (i in 1..lastIndex) { \n    val e = this[i]\n    if
(comparator.compare(min, e) > 0) min = e\n  }\n  return min\n}\n\n/**
Returns the first character having the
smallest value according to the provided [comparator] or `null` if there are no characters.\n
*/\n\n@SinceKotlin("1.4")\npublic fun CharSequence.minWithOrNull(comparator: Comparator<in Char>): Char?
{ \n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) { \n    val e = this[i]\n    if
(comparator.compare(min, e) > 0) min = e\n  }\n  return min\n}\n\n/**
Returns `true` if the char sequence has
no characters.\n
*/\n\n * @sample samples.collections.Collections.Aggregates.none\n
*/\n\npublic fun
CharSequence.none(): Boolean { \n  return isEmpty()\n}\n\n/**
Returns `true` if no characters match the given
[predicate].\n
*/\n\n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*/\n\npublic inline
fun CharSequence.none(predicate: (Char) -> Boolean): Boolean { \n  for (element in this) if (predicate(element))
return false\n  return true\n}\n\n/**
Performs the given [action] on each character and returns the char sequence
itself afterwards.\n
*/\n\n@SinceKotlin("1.1")\npublic inline fun <S : CharSequence> S.onEach(action: (Char) ->
Unit): S { \n  return apply { for (element in this) action(element) }\n}\n\n/**
Performs the given [action] on
each character, providing sequential index with the character,\n
*/\n\n * and returns the char sequence itself afterwards.\n
*/\n\n * @param [action] function that takes the index of a character and the character itself\n
*/\n\n * and performs the action on
the character.\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <S : CharSequence> S.onEachIndexed(action: (index:
Int, Char) -> Unit): S { \n  return apply { forEachIndexed(action) }\n}\n\n/**
Accumulates value starting with
the first character and applying [operation] from left to right\n
*/\n\n * to
current accumulator value and each character.\n
*/\n\n * Throws an exception if this char sequence is empty. If the
char sequence can be empty in an expected way,\n
*/\n\n * please use [reduceOrNull] instead. It returns `null` when its
receiver is empty.\n
*/\n\n * @param [operation] function that takes current accumulator value and a character,\n
*/\n\n * and calculates the next accumulator value.\n
*/\n\n * @sample samples.collections.Collections.Aggregates.reduce\n
*/\n\npublic inline fun CharSequence.reduce(operation: (acc: Char, Char) -> Char): Char { \n  if (isEmpty())\n  throw UnsupportedOperationException("Empty char sequence can't be reduced.")\n  var accumulator = this[0]\n
for (index in 1..lastIndex) { \n    accumulator = operation(accumulator, this[index])\n  }\n  return
accumulator\n}\n\n/**
Accumulates value starting with the first character and applying [operation] from left to
right\n
*/\n\n * to current accumulator value and each character with its index in the original
char sequence.\n
*/\n\n * Throws an exception if this char sequence is empty. If the char sequence can be empty in an
expected way,\n
*/\n\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n
*/\n\n * @param [operation] function that takes the index of a character, current accumulator value and the character itself,\n
*/\n\n * and calculates the next accumulator value.\n
*/\n\n * @sample samples.collections.Collections.Aggregates.reduce\n

```

```

*public inline fun CharSequence.reduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): Char {
    if (isEmpty())
        throw UnsupportedOperationException("Empty char sequence can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first character and applying [operation] from left to right to current accumulator value and each character with its index in the original char sequence. Returns `null` if the char sequence is empty.
 @param [operation] function that takes the index of a character, current accumulator value and the character itself, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceOrNull

```

@SinceKotlin("1.4")
public inline fun CharSequence.reduceIndexedOrNull(operation: (index: Int, acc: Char, Char) -> Char): Char? {
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first character and applying [operation] from left to right to current accumulator value and each character. Returns `null` if the char sequence is empty.
 @param [operation] function that takes current accumulator value and a character, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceOrNull

```

@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun CharSequence.reduceOrNull(operation: (acc: Char, Char) -> Char): Char? {
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the last character and applying [operation] from right to left to each character and current accumulator value. Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes a character and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRight

```

public inline fun CharSequence.reduceRight(operation: (Char, acc: Char) -> Char): Char {
    var index = lastIndex
    if (index < 0)
        throw UnsupportedOperationException("Empty char sequence can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last character and applying [operation] from right to left to each character with its index in the original char sequence and current accumulator value. Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes the index of a character, the character itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRight

```

public inline fun CharSequence.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {
    var index = lastIndex
    if (index < 0)
        throw UnsupportedOperationException("Empty char sequence can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last character and applying [operation] from right to left to each character with its index in the original char sequence and current accumulator value. Returns `null` if the char sequence is empty.
 @param [operation] function that takes the index of a character, the character itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRightOrNull

```

@SinceKotlin("1.4")
public inline fun CharSequence.reduceRightIndexedOrNull(operation: (index: Int, Char, acc: Char) -> Char): Char? {
    var index = lastIndex
    if (index < 0)
        return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last character and applying [operation] from right to left to each character and current accumulator value. Returns `null` if the char sequence is empty.
 @param [operation] function that takes a character and current accumulator value, and calculates

```

the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharSequence.reduceRightOrNull(operation: (Char, acc: Char) ->
Char): Char? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while
(index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each character and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes current accumulator value and a character, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <R> CharSequence.runningFold(initial: R, operation: (acc: R, Char) ->
R): List<R> {\n    if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(length
+ 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n        accumulator =
operation(accumulator, element)\n        result.add(accumulator)\n    }\n    return result}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each character,
its index in the original char sequence and current accumulator value that starts with [initial] value.\n * \n * Note
that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous
value in resulting list.\n * \n * @param [operation] function that takes the index of a character, current accumulator
value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <R>
CharSequence.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R>
{\n    if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(length + 1).apply { add(initial) }\n    var
accumulator = initial\n    for (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n
        result.add(accumulator)\n    }\n    return result}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each character and current accumulator value that
starts with the first character of this char sequence.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and a character, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic inline fun
CharSequence.runningReduce(operation: (acc: Char, Char)
-> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result =
ArrayList<Char>(length).apply { add(accumulator) }\n    for (index in 1 until length) {\n        accumulator =
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each character,
its index in the original char sequence and current accumulator value that starts with the first character of this char
sequence.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character,
current accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic inline fun CharSequence.runningReduceIndexed(operation: (index: Int, acc:
Char, Char) -> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result
= ArrayList<Char>(length).apply { add(accumulator) }\n    for (index in 1 until length) {\n        accumulator =
operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each character and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes current accumulator value and a character, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n

```

```

*\/n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R>
CharSequence.scan(initial: R, operation: (acc: R, Char) -> R): List<R> {\n  return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each character, its index in the original char sequence and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of a character, current accumulator value\n * and the character itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\/n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R>
CharSequence.scanIndexed(initial: R,
operation: (index: Int, acc: R, Char) -> R): List<R> {\n  return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each character in the char sequence.\n
*\/n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharSequence.sumBy(selector: (Char) -> Int): Int {\n  var sum: Int = 0\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each character in the char sequence.\n *\/n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharSequence.sumByDouble(selector: (Char) -> Double): Double {\n  var sum: Double = 0.0\n  for (element in
this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns
the sum of all values produced by [selector] function applied to each character in the char sequence.\n
*\/n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.sumOf(selector: (Char) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in
this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each character in the char sequence.\n
*\/n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.sumOf(selector: (Char) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum
+= selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each character in the
char sequence.\n
*\/n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.sumOf(selector: (Char) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each character in the char sequence.\n
*\/n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.sumOf(selector: (Char) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n  for (element
in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each character in the char sequence.\n
*\/n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.sumOf(selector: (Char) -> ULong):
ULong {\n  var sum: ULong = 0.toULong()\n  for (element in this) {\n    sum += selector(element)\n  }\n
return sum\n}\n\n/**\n * Splits this char sequence into a list of strings each not exceeding the given [size].\n * \n *

```

The last string in the resulting list may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each string, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample

```
samples.text.Strings.chunked\n *^\n@SinceKotlin("1.2")\npublic fun CharSequence.chunked(size: Int):
```

```
List<String> {\n    return windowed(size, size, partialWindows = true)\n}\n\n/**\n * Splits this char sequence into several char sequences each not exceeding the given [size]\n * and applies the given [transform] function to an each.\n * \n * @return list of results of the [transform] applied to an each char sequence.\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * The last char sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample
```

```
samples.text.Strings.chunkedTransform\n *^\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.chunked(size: Int, transform: (CharSequence) -> R): List<R> {\n    return windowed(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n * Splits this char sequence into a sequence of strings each not exceeding the given [size].\n * \n * The last string in the resulting sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each string, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample samples.collections.Collections.Transformations.chunked\n
```

```
*^\n@SinceKotlin("1.2")\npublic fun CharSequence.chunkedSequence(size: Int): Sequence<String> {\n    return chunkedSequence(size) { it.toString() }\n}\n\n/**\n * Splits this char sequence into several char sequences each not exceeding the given [size]\n * and applies the given [transform] function to an each.\n * \n * @return sequence of results of the [transform] applied to an each char sequence.\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * The last char sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample
```

```
samples.text.Strings.chunkedTransformToSequence\n *^\n@SinceKotlin("1.2")\npublic fun <R>
```

```
CharSequence.chunkedSequence(size: Int, transform: (CharSequence) -> R): Sequence<R> {\n    return windowedSequence(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n * Splits the original char sequence into pair of char sequences,\n * where *first* char sequence contains characters for which [predicate] yielded `true`,\n * while *second* char sequence contains characters for which [predicate] yielded `false`.\n * \n * @sample samples.text.Strings.partition\n
```

```
*^\npublic inline fun CharSequence.partition(predicate: (Char) -> Boolean): Pair<CharSequence, CharSequence> {\n    val first = StringBuilder()\n    val second = StringBuilder()\n    for (element in this) {\n        if (predicate(element))\n            first.append(element)\n        else {\n            second.append(element)\n        }\n    }\n    return Pair(first, second)\n}\n\n/**\n * Splits the original string into pair of strings,\n * where *first* string contains characters for which [predicate] yielded `true`,\n * while *second* string contains characters for which [predicate] yielded `false`.\n * \n * @sample samples.text.Strings.partition\n
```

```
*^\npublic inline fun String.partition(predicate: (Char) -> Boolean): Pair<String, String> {\n    val first = StringBuilder()\n    val second = StringBuilder()\n    for (element in this) {\n        if (predicate(element))\n            first.append(element)\n        else {\n            second.append(element)\n        }\n    }\n    return Pair(first.toString(), second.toString())\n}\n\n/**\n * Returns a list of snapshots of the window of the given [size]\n * sliding along this char sequence with the given [step], where each\n * snapshot is a string.\n * \n * Several last strings may have fewer characters than the given [size].\n * \n * Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n * \n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward by on each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample
```

```
samples.collections.Sequences.Transformations.takeWindows\n *^\n@SinceKotlin("1.2")\npublic fun
```

```

CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): List<String> {
    return windowed(size, step, partialWindows) { it.toString() }
}

Returns a list of results of applying the given [transform] function to an each char sequence representing a view over the window of the given [size] sliding along this char sequence with the given [step]. Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function. You should not store it or allow it to escape in some way, unless you made a snapshot of it. Several last char sequences may have fewer characters than the given [size]. Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.

@param size the number of elements to take in each window
@param step the number of elements to move the window forward by on an each step, by default 1
@param partialWindows controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved

@sample samples.collections.Sequences.Transformations.averageWindows

@SinceKotlin("1.2")
public fun <R> CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (CharSequence) -> R): List<R> {
    checkWindowSizeStep(size, step)
    val thisSize = this.length
    val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1
    val result = ArrayList<R>(resultCapacity)
    var index = 0
    while (index in 0 until thisSize) {
        val end = index + size
        val coercedEnd = if (end < 0 || end > thisSize) { if (partialWindows) thisSize else break } else end
        result.add(transform(subSequence(index, coercedEnd)))
        index += step
    }
    return result
}

Returns a sequence of snapshots of the window of the given [size] sliding along this char sequence with the given [step], where each snapshot is a string. Several last strings may have fewer characters than the given [size]. Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.

@param size the number of elements to take in each window
@param step the number of elements to move the window forward by on an each step, by default 1
@param partialWindows controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved

@sample samples.collections.Sequences.Transformations.takeWindows

@SinceKotlin("1.2")
public fun CharSequence.windowedSequence(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<String> {
    return windowedSequence(size, step, partialWindows) { it.toString() }
}

Returns a sequence of results of applying the given [transform] function to an each char sequence representing a view over the window of the given [size] sliding along this char sequence with the given [step]. Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function. You should not store it or allow it to escape in some way, unless you made a snapshot of it. Several last char sequences may have fewer characters than the given [size]. Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.

@param size the number of elements to take in each window
@param step the number of elements to move the window forward by on an each step, by default 1
@param partialWindows controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved

@sample samples.collections.Sequences.Transformations.averageWindows

@SinceKotlin("1.2")
public fun <R> CharSequence.windowedSequence(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (CharSequence) -> R): Sequence<R> {
    checkWindowSizeStep(size, step)
    val windows = (if (partialWindows) indices else 0 until length - size + 1) step step
    return windows.asSequence().map { index -> val end = index + size
        val coercedEnd = if (end < 0 || end > length) length else end
        transform(subSequence(index, coercedEnd)) }
}

Returns a list of pairs built from the characters of `this` and the [other] char sequences with the same index. The returned list has length of the shortest char sequence.

@sample samples.text.Strings.zip

@SinceKotlin("1.2")
public infix fun CharSequence.zip(other: CharSequence): List<Pair<Char, Char>> {
    return zip(other) { c1, c2 -> c1 to c2 }
}

Returns a list of values built from the characters of `this` and the [other] char sequences with the same index using the provided [transform] function applied to each pair of characters. The returned list has length of the shortest char sequence.

@sample

```



```

samples.text.Strings.zipWithTransform\n *\npublic inline fun <V> CharSequence.zip(other: CharSequence,
transform: (a: Char, b: Char) -> V): List<V> {\n    val length = minOf(this.length, other.length)\n    val list =
ArrayList<V>(length)\n    for (i in 0 until length) {\n        list.add(transform(this[i], other[i]))\n    }\n    return
list}\n}\n\n/**\n * Returns a list of pairs of each two adjacent characters in this char sequence.\n * \n * The returned
list is empty if this char sequence contains less than two characters.\n * \n * @sample
samples.collections.Collections.Transformations.zipWithNext\n *\n@SinceKotlin("1.2")\npublic fun
CharSequence.zipWithNext(): List<Pair<Char, Char>> {\n    return zipWithNext { a, b -> a to b }\n}\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to an each pair of two adjacent
characters in this char sequence.\n * \n * The returned list is empty if this char sequence contains less than two
characters.\n
* \n * @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n
*\n@SinceKotlin("1.2")\npublic inline fun <R> CharSequence.zipWithNext(transform: (a: Char, b: Char) -> R):
List<R> {\n    val size = length - 1\n    if (size < 1) return emptyList()\n    val result = ArrayList<R>(size)\n    for
(index in 0 until size) {\n        result.add(transform(this[index], this[index + 1]))\n    }\n    return result}\n}\n\n/**\n *
Creates an [Iterable] instance that wraps the original char sequence returning its characters when being iterated.\n
*\n@npublic fun CharSequence.asIterable(): Iterable<Char> {\n    if (this is String && isEmpty()) return emptyList()\n
return Iterable { this.iterator() }\n}\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original char sequence
returning its characters when being iterated.\n *\n@npublic fun CharSequence.asSequence(): Sequence<Char> {\n    if
(this is String && isEmpty()) return emptySequence()\n    return Sequence {
this.iterator() }\n}\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n@n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage
kotlin.text\n\nimport kotlin.contracts.contract\nimport kotlin.jvm.JvmName\n\n/**\n * Returns a copy of this string
converted to upper case using the rules of the default locale.\n *\n@Deprecated("Use uppercase() instead.",
ReplaceWith("uppercase()"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
String.toUpperCase(): String\n\n/**\n * Returns a copy of this string converted to upper case using Unicode
mapping rules of the invariant locale.\n * \n * This function supports one-to-many and many-to-one character
mapping,\n * thus the length of the returned string can be different from the length of the original string.\n * \n *
@sample samples.text.Strings.uppercase\n
*\n@n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
String.uppercase(): String\n\n/**\n * Returns a copy of this string converted to lower case using the rules of the
default locale.\n *\n@Deprecated("Use lowercase() instead.",
ReplaceWith("lowercase()"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
String.toLowerCase(): String\n\n/**\n * Returns a copy of this string converted to lower case using Unicode
mapping rules of the invariant locale.\n * \n * This function supports one-to-many and many-to-one character
mapping,\n * thus the length of the returned string can be different from the length of the original string.\n * \n *
@sample samples.text.Strings.lowercase\n
*\n@n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
String.lowercase(): String\n\n/**\n * Returns a copy of this string having its first letter titlecased using the rules of
the default locale,\n
* or the original string if it's empty or already starts with a title case letter.\n * \n * The title case of a character is
usually the same as its upper case with several exceptions.\n * The particular list of characters with the special title
case form depends on the underlying platform.\n * \n * @sample samples.text.Strings.capitalize\n
*\n@n@Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { if (it.isLowerCase())
it.titlecase() else it.toString() }"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
String.capitalize(): String\n\n/**\n * Returns a copy of this string having its first letter lowercased using the rules of
the default locale,\n
* or the original string if it's empty or already starts with a lower case letter.\n * \n * @sample

```

```

samples.text.Strings.decapitalize\n *^n@Deprecated("Use replaceFirstChar instead.\",
ReplaceWith("replaceFirstChar { it.lowercase() }")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic
expect fun String.decapitalize(): String\n\n/**\n * Returns a sub sequence of this char sequence having leading and
trailing characters matching the [predicate] removed.\n *^npublic inline fun CharSequence.trim(predicate: (Char) ->
Boolean): CharSequence {\n    var startIndex = 0\n    var endIndex = length - 1\n    var startFound = false\n\n    while (startIndex <= endIndex) {\n        val index = if (!startFound) startIndex else endIndex\n        val match =
predicate(this[index])\n        if (!startFound) {\n            if (!match)\n                startFound = true\n            else\n                startIndex += 1\n        } else {\n            if (!match)\n                break\n            else\n                endIndex -= 1\n        }\n    }\n    return subSequence(startIndex, endIndex + 1)\n}\n\n/**\n * Returns a string having leading and
trailing characters matching the [predicate] removed.\n *^npublic inline fun String.trim(predicate: (Char) ->
Boolean): String =\n    (this as CharSequence).trim(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having
leading characters matching the [predicate] removed.\n *^npublic inline fun CharSequence.trimStart(predicate:
(Char) -> Boolean): CharSequence {\n    for (index in this.indices)\n        if (!predicate(this[index]))\n            return
subSequence(index, length)\n    return ""\n}\n\n/**\n * Returns a string having leading characters matching the
[predicate] removed.\n *^npublic inline fun String.trimStart(predicate: (Char) -> Boolean): String =\n    (this as
CharSequence).trimStart(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having
trailing characters matching the [predicate] removed.\n *^npublic inline fun CharSequence.trimEnd(predicate:
(Char) -> Boolean): CharSequence {\n    for (index in this.indices.reversed())\n        if (!predicate(this[index]))\n
return subSequence(0, index + 1)\n    return ""\n}\n\n/**\n * Returns
a string having trailing characters matching the [predicate] removed.\n *^npublic inline fun
String.trimEnd(predicate: (Char) -> Boolean): String =\n    (this as
CharSequence).trimEnd(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having
leading and trailing characters from the [chars] array removed.\n *^npublic fun CharSequence.trim(vararg chars:
Char): CharSequence = trim { it in chars }\n\n/**\n * Returns a string having leading and trailing characters from
the [chars] array removed.\n *^npublic fun String.trim(vararg chars: Char): String = trim { it in chars }\n\n/**\n *
Returns a sub sequence of this char sequence having leading characters from the [chars] array removed.\n *^npublic
fun CharSequence.trimStart(vararg chars: Char): CharSequence = trimStart { it in chars }\n\n/**\n * Returns a string
having leading characters from the [chars] array removed.\n *^npublic fun String.trimStart(vararg chars: Char):
String = trimStart { it in chars
}\n\n/**\n * Returns a sub sequence of this char sequence having trailing characters from the [chars] array
removed.\n *^npublic fun CharSequence.trimEnd(vararg chars: Char): CharSequence = trimEnd { it in chars
}\n\n/**\n * Returns a string having trailing characters from the [chars] array removed.\n *^npublic fun
String.trimEnd(vararg chars: Char): String = trimEnd { it in chars }\n\n/**\n * Returns a sub sequence of this char
sequence having leading and trailing whitespace removed.\n *^npublic fun CharSequence.trim(): CharSequence =
trim(Char::isWhitespace)\n\n/**\n * Returns a string having leading and trailing whitespace removed.\n\n
*^n@kotlin.internal.InlineOnly\npublic inline fun String.trim(): String = (this as
CharSequence).trim().toString()\n\n/**\n * Returns a sub sequence of this char sequence having leading whitespace
removed.\n *^npublic fun CharSequence.trimStart(): CharSequence = trimStart(Char::isWhitespace)\n\n/**\n *
Returns a string having leading whitespace removed.\n\n
*^n@kotlin.internal.InlineOnly\npublic inline fun String.trimStart(): String = (this as
CharSequence).trimStart().toString()\n\n/**\n * Returns a sub sequence of this char sequence having trailing
whitespace removed.\n *^npublic fun CharSequence.trimEnd(): CharSequence =
trimEnd(Char::isWhitespace)\n\n/**\n * Returns a string having trailing whitespace removed.\n\n
*^n@kotlin.internal.InlineOnly\npublic inline fun String.trimEnd(): String = (this as
CharSequence).trimEnd().toString()\n\n/**\n * Returns a char sequence with content of this char sequence padded
at the beginning\n * to the specified [length] with the specified character or space.\n *^n * @param length the desired
string length.\n * @param padChar the character to pad string with, if it has length less than the [length] specified.

```

Space is used by default.

`@return` Returns a char sequence of length at least [length] consisting of `this` char sequence prepended with [padChar] as many times as are necessary to reach that length.

`@sample` `samples.text.Strings.padStart`

```

public fun CharSequence.padStart(length: Int, padChar: Char = ' '): CharSequence {
    if (length < 0) throw IllegalArgumentException("Desired length $length is less than zero.")
    if (length <= this.length) return this.subSequence(0, this.length)
    val sb = StringBuilder(length)
    for (i in 1..(length - this.length)) sb.append(padChar)
    sb.append(this)
    return sb
}

```

Pads the string to the specified [length] at the beginning with the specified character or space.

`@param` length the desired string length.

`@param` padChar the character to pad string with, if it has length less than the [length] specified. Space is used by default.

`@return` Returns a string of length at least [length] consisting of `this` string prepended with [padChar] as many times as are necessary to reach that length.

`@sample` `samples.text.Strings.padStart`

```

public fun String.padStart(length: Int, padChar: Char = ' '): String =
    (this as CharSequence).padStart(length, padChar).toString()

```

Returns a char sequence with content of this char sequence padded at the end to the specified [length] with the specified character or space.

`@param` length the desired string length.

`@param` padChar the character to pad string with, if it has length less than the [length] specified. Space is used by default.

`@return` Returns a char sequence of length at least [length] consisting of `this` char sequence appended with [padChar] as many times as are necessary to reach that length.

`@sample` `samples.text.Strings.padEnd`

```

public fun CharSequence.padEnd(length: Int, padChar: Char = ' '): CharSequence {
    if (length < 0) throw IllegalArgumentException("Desired length $length is less than zero.")
    if (length <= this.length) return this.subSequence(0, this.length)
    val sb = StringBuilder(length)
    sb.append(this)
    for (i in 1..(length - this.length)) sb.append(padChar)
    return sb
}

```

Pads the string to the specified [length] at the end with the specified character or space.

`@param` length the desired string length.

`@param` padChar the character to pad string with, if it has length less than the [length] specified. Space is used by default.

`@return` Returns a string of length at least [length] consisting of `this` string appended with [padChar] as many times as are necessary to reach that length.

`@sample` `samples.text.Strings.padEnd`

```

public fun String.padEnd(length: Int, padChar: Char = ' '): String =
    (this as CharSequence).padEnd(length, padChar).toString()

```

Returns `true` if this nullable char sequence is either `null` or empty.

`@sample` `samples.text.Strings.stringIsNullOrEmpty`

```

@kotlin.internal.InlineOnly
public inline fun CharSequence?.isNullOrEmpty(): Boolean {
    contract {
        returns(false)
        implies (this@isNullOrEmpty != null)
    }
    return this == null || this.length == 0
}

```

Returns `true` if this char sequence is empty (contains no characters).

`@sample` `samples.text.Strings.stringIsEmpty`

```

@kotlin.internal.InlineOnly
public inline fun CharSequence.isEmpty(): Boolean = length == 0

```

Returns `true` if this char sequence is not empty.

`@sample` `samples.text.Strings.stringIsNotEmpty`

```

@kotlin.internal.InlineOnly
public inline fun CharSequence.isNotEmpty(): Boolean = length > 0

```

implemented differently in JVM and JS

```

public fun String.isBlank(): Boolean = length() == 0 || all { it.isWhitespace() }

```

Returns `true` if this char sequence is not empty and contains some characters except of whitespace characters.

`@sample` `samples.text.Strings.stringIsNotBlank`

```

@kotlin.internal.InlineOnly
public inline fun CharSequence.isNotBlank(): Boolean = !isBlank()

```

Returns `true` if this nullable char sequence is either `null` or empty or consists solely of whitespace characters.

`@sample` `samples.text.Strings.stringIsNullOrBlank`

```

@kotlin.internal.InlineOnly
public inline fun CharSequence?.isNullOrBlank(): Boolean {
    contract {
        returns(false)
        implies (this@isNullOrBlank != null)
    }
    return this == null || this.isBlank()
}

```

Iterator for characters of the given char sequence.

```

public operator fun CharSequence.iterator(): CharIterator = object : CharIterator() {
    private var index = 0
    public override fun nextChar(): Char = get(index++)
    public override fun hasNext(): Boolean = index < length
}

```

Returns the string if it is not `null`, or the empty string otherwise.

```

@kotlin.internal.InlineOnly
public inline fun String?.orEmpty(): String = this ?: ""

```

Returns this

```

char sequence if it's not empty\n * or the result of calling [defaultValue] function if the char sequence is empty.\n
*\n * @sample
samples.text.Strings.stringIfEmpty\n *^\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C,
R> C.ifEmpty(defaultValue: () -> R): R where C : CharSequence, C : R =\n if (isEmpty()) defaultValue() else
this\n\n/**\n * Returns this char sequence if it is not empty and doesn't consist solely of whitespace characters,\n *
or the result of calling [defaultValue] function otherwise.\n *\n * @sample samples.text.Strings.stringIfBlank\n
*^\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifBlank(defaultValue: () -> R):
R where C : CharSequence, C : R =\n if (isBlank()) defaultValue() else this\n\n/**\n * Returns the range of valid
character indices for this char sequence.\n *\npublic val CharSequence.indices: IntRange\n get() = 0..length -
1\n\n/**\n * Returns the index of the last character in the char sequence or -1 if it is empty.\n *\npublic val
CharSequence.lastIndex: Int\n get() = this.length - 1\n\n/**\n * Returns `true`
if this CharSequence has Unicode surrogate pair at the specified [index].\n *\npublic fun
CharSequence.hasSurrogatePairAt(index: Int): Boolean {\n return index in 0..length - 2\n &&
this[index].isHighSurrogate()\n && this[index + 1].isLowSurrogate()\n}\n\n/**\n * Returns a substring
specified by the given [range] of indices.\n *\npublic fun String.substring(range: IntRange): String =
substring(range.start, range.endInclusive + 1)\n\n/**\n * Returns a subsequence of this char sequence specified by
the given [range] of indices.\n *\npublic fun CharSequence.subSequence(range: IntRange): CharSequence =
subSequence(range.start, range.endInclusive + 1)\n\n/**\n * Returns a subsequence of this char sequence.\n *\n
This extension is chosen only for invocation with old-named parameters.\n * Replace parameter names with the
same as those of [CharSequence.subSequence].\n
*\n@kotlin.internal.InlineOnly\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false
warning\n@Deprecated("Use
parameters named startIndex and endIndex.", ReplaceWith("subSequence(startIndex = start, endIndex =
end)"))\npublic inline fun String.subSequence(start: Int, end: Int): CharSequence = subSequence(start,
end)\n\n/**\n * Returns a substring of chars from a range of this char sequence starting at the [startIndex] and
ending right before the [endIndex].\n *\n * @param startIndex the start index (inclusive).\n * @param endIndex the
end index (exclusive). If not specified, the length of the char sequence is used.\n
*\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.substring(startIndex: Int, endIndex: Int = length):
String = subSequence(startIndex, endIndex).toString()\n\n/**\n * Returns a substring of chars at indices from the
specified [range] of this char sequence.\n *\npublic fun CharSequence.substring(range: IntRange): String =
subSequence(range.start, range.endInclusive + 1).toString()\n\n/**\n * Returns a substring before the first
occurrence of
[delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the
original string.\n *\npublic fun String.substringBefore(delimiter: Char, missingDelimiterValue: String = this):
String {\n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(0,
index)\n}\n\n/**\n * Returns a substring before the first occurrence of [delimiter].\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n *\npublic fun
String.substringBefore(delimiter: String, missingDelimiterValue: String = this): String {\n val index =
indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(0, index)\n}\n\n/**\n * Returns
a substring after the first occurrence of [delimiter].\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n *\npublic fun String.substringAfter(delimiter:
Char, missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1)
missingDelimiterValue else substring(index + 1, length)\n}\n\n/**\n * Returns a substring after the first occurrence
of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the
original string.\n *\npublic fun String.substringAfter(delimiter: String, missingDelimiterValue: String = this):
String {\n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(index +
delimiter.length, length)\n}\n\n/**\n * Returns a substring before the last occurrence of [delimiter].\n * If the string
does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n *\npublic

```

```

fun String.substringBeforeLast(delimiter: Char, missingDelimiterValue: String = this): String {
    val index = lastIndexOf(delimiter)
    return if (index == -1) missingDelimiterValue else substring(0, index)
}

fun String.substringBeforeLast(delimiter: String, missingDelimiterValue: String = this): String {
    val index = lastIndexOf(delimiter)
    return if (index == -1) missingDelimiterValue else substring(0, index)
}

fun String.substringAfterLast(delimiter: Char, missingDelimiterValue: String = this): String {
    val index = lastIndexOf(delimiter)
    return if (index == -1) missingDelimiterValue else substring(index + 1, length)
}

fun String.substringAfterLast(delimiter: String, missingDelimiterValue: String = this): String {
    val index = lastIndexOf(delimiter)
    return if (index == -1) missingDelimiterValue else substring(index + delimiter.length, length)
}

fun CharSequence.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence): CharSequence {
    if (endIndex < startIndex) throw IndexOutOfBoundsException("End index ($endIndex) is less than start index ($startIndex).")
    val sb = StringBuilder()
    sb.appendRange(this, 0, startIndex)
    sb.append(replacement)
    sb.appendRange(this, endIndex, length)
    return sb
}

fun String.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence): String = (this as CharSequence).replaceRange(startIndex, endIndex, replacement).toString()

fun CharSequence.replaceRange(range: IntRange, replacement: CharSequence): CharSequence = replaceRange(range.start, range.endInclusive + 1, replacement)

fun String.replaceRange(range: IntRange, replacement: CharSequence): String = (this as CharSequence).replaceRange(range, replacement).toString()

fun CharSequence.removeRange(startIndex: Int, endIndex: Int): CharSequence {
    if (endIndex < startIndex) throw IndexOutOfBoundsException("End index ($endIndex) is less than start index ($startIndex).")
    if (endIndex == startIndex) return this.subSequence(0, length)
    val sb = StringBuilder(length - (endIndex - startIndex))
    sb.appendRange(this, 0, startIndex)
    sb.appendRange(this, endIndex, length)
    return sb
}

fun String.removeRange(startIndex: Int, endIndex: Int): String = (this as CharSequence).removeRange(startIndex, endIndex).toString()

fun CharSequence.removeRange(range: IntRange): CharSequence = removeRange(range.start, range.endInclusive + 1)

```

the part of a string at the given [range].\n * The end index of the [range] is included in the removed part.\n *
`@kotlin.internal.InlineOnly\npublic inline fun String.removeRange(range: IntRange): String =\n (this as CharSequence).removeRange(range).toString()\n\n/**\n * If this char sequence starts with the given [prefix], returns a new char sequence\n * with the prefix removed. Otherwise, returns a new char sequence with the same characters.\n */\npublic fun CharSequence.removePrefix(prefix: CharSequence): CharSequence {\n if (startsWith(prefix)) {\n return subSequence(prefix.length, length)\n }\n return subSequence(0, length)\n}\n\n/**\n * If this string starts with the given [prefix], returns a copy of this string\n * with the prefix removed. Otherwise, returns this string.\n */\npublic fun String.removePrefix(prefix: CharSequence): String {\n if (startsWith(prefix)) {\n return substring(prefix.length)\n }\n return this\n}\n\n/**\n * If this char sequence ends with the given [suffix], returns a new char sequence\n * with the suffix removed. Otherwise, returns a new char sequence with the same characters.\n */\npublic fun CharSequence.removeSuffix(suffix: CharSequence): CharSequence {\n if (endsWith(suffix)) {\n return subSequence(0, length - suffix.length)\n }\n return subSequence(0, length)\n}\n\n/**\n * If this string ends with the given [suffix], returns a copy of this string\n * with the suffix removed. Otherwise, returns this string.\n */\npublic fun String.removeSuffix(suffix: CharSequence): String {\n if (endsWith(suffix)) {\n return substring(0, length - suffix.length)\n }\n return this\n}\n\n/**\n * When this char sequence starts with the given [prefix] and ends with the given [suffix],\n * returns a new char sequence having both the given [prefix] and [suffix] removed.\n * Otherwise returns a new char sequence with the same characters.\n */\npublic fun CharSequence.removeSurrounding(prefix: CharSequence, suffix: CharSequence): CharSequence {\n if ((length >= prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix)) {\n return subSequence(prefix.length, length - suffix.length)\n }\n return subSequence(0, length)\n}\n\n/**\n * Removes from a string both the given [prefix] and [suffix] if and only if\n * it starts with the [prefix] and ends with the [suffix].\n * Otherwise returns this string unchanged.\n */\npublic fun String.removeSurrounding(prefix: CharSequence, suffix: CharSequence): String {\n if ((length >= prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix)) {\n return substring(prefix.length, length - suffix.length)\n }\n return this\n}\n\n/**\n * When this char sequence starts with and ends with the given [delimiter],\n * returns a new char sequence having this [delimiter] removed both from the start and end.\n * Otherwise returns a new char sequence with the same characters.\n */\npublic fun CharSequence.removeSurrounding(delimiter: CharSequence): CharSequence = removeSurrounding(delimiter, delimiter)\n\n/**\n * Removes the given [delimiter] string from both the start and the end of this string\n * if and only if it starts with and ends with the [delimiter].\n * Otherwise returns this string unchanged.\n */\npublic fun String.removeSurrounding(delimiter: CharSequence): String = removeSurrounding(delimiter, delimiter)\n\n/**\n * Replace part of string before the first occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceBefore(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n/**\n * Replace part of string before the first occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceBefore(delimiter: String, replacement: String, missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n/**\n * Replace part of string after the first occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfter(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)\n}\n\n/**\n * Replace part of string after the first occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfter(delimiter: String, replacement: String, missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1)`

```

missingDelimiterValue else replaceRange(index + delimiter.length, length, replacement)\n}\n\n/**\n * Replace part
of string after the last occurrence of given delimiter with the [replacement] string.\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun
String.replaceAfterLast(delimiter: String, replacement: String, missingDelimiterValue: String = this): String {\n
val index = lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else replaceRange(index +
delimiter.length, length, replacement)\n}\n\n/**\n * Replace part of string after the last occurrence
of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfterLast(delimiter:
Char, replacement: String, missingDelimiterValue: String = this): String {\n    val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)\n}\n\n/**\n *
Replace part of string before the last occurrence of given delimiter with the [replacement] string.\n * If the string
does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic
fun String.replaceBeforeLast(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {\n
val index = lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else replaceRange(0, index,
replacement)\n}\n\n/**\n * Replace part of string before the last occurrence
of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceBeforeLast(delimiter:
String, replacement: String, missingDelimiterValue: String = this): String {\n    val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n// public fun
String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean): String // JVM- and JS-specific\n// public fun
String.replace(oldValue: String, newValue: String, ignoreCase: Boolean): String // JVM- and JS-specific\n\n/**\n *
Returns a new string obtained by replacing each substring of this char sequence that matches the given regular
expression\n * with the given [replacement].\n * The [replacement] can consist of any combination of literal text
and $-substitutions. To treat the replacement string\n * literally escape it with the
[kotlin.text.Regex.Companion.escapeReplacement] method.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replace(regex: Regex, replacement: String): String = regex.replace(this, replacement)\n\n/**\n *
Returns a new string obtained by replacing each substring of this char sequence that matches the given regular
expression\n * with the result of the given function [transform] that takes [MatchResult] and returns a string to be
used as a\n * replacement for that match.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replace(regex: Regex, noinline transform: (MatchResult) -> CharSequence): String =\n
regex.replace(this, transform)\n\n/**\n * Replaces the first occurrence of the given regular expression [regex] in this
char sequence with specified [replacement] expression.\n * \n * @param replacement A replacement expression that
can include substitutions. See [Regex.replaceFirst] for details.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replaceFirst(regex:
Regex, replacement: String): String = regex.replaceFirst(this, replacement)\n\n/**\n * Returns a copy of this string
having its first character replaced with the result of the specified [transform],\n * or the original string if it's empty.\n
*\n * @param transform function that takes the first character and returns the result of the transform applied to the
character.\n * \n * @sample samples.text.Strings.replaceFirstChar\n
*\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@OptIn(kotlin.experimental.Exper
imentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@JvmName("\replaceFirstCharWithC
har")\n@kotlin.internal.InlineOnly\npublic inline fun String.replaceFirstChar(transform: (Char) -> Char): String {\n
return if (isEmpty()) transform(this[0]) + substring(1) else this\n}\n\n/**\n * Returns a copy of this string
having its first character replaced with the result of the specified [transform],\n * or the original
string if it's empty.\n * \n * @param transform function that takes the first character and returns the result of the
transform applied to the character.\n * \n * @sample samples.text.Strings.replaceFirstChar\n
*\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@OptIn(kotlin.experimental.Exper
imentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@JvmName("\replaceFirstCharWithC
harSequence")\n@kotlin.internal.InlineOnly\npublic inline fun String.replaceFirstChar(transform: (Char) ->

```

```

CharSequence): String {\n    return if (isEmpty()) transform(this[0]).toString() + substring(1) else
this}\n}\n\n/**\n * Returns `true` if this char sequence matches the given regular expression.\n
*/\n@kotlin.internal.InlineOnly\npublic inline infix fun CharSequence.matches(regex: Regex): Boolean =
regex.matches(this)\n\n/**\n * Implementation of [regionMatches] for CharSequences.\n * Invoked when it's
already known that arguments are not Strings, so that no additional
type checks are performed.\n */\ninternal fun CharSequence.regionMatchesImpl(thisOffset: Int, other:
CharSequence, otherOffset: Int, length: Int, ignoreCase: Boolean): Boolean {\n    if ((otherOffset < 0) || (thisOffset <
0) || (thisOffset > this.length - length) || (otherOffset > other.length - length)) {\n        return false\n    }\n\n    for
(index in 0 until length) {\n        if (!this[thisOffset + index].equals(other[otherOffset + index], ignoreCase))\n        return false\n    }\n    return true\n}\n\n/**\n * Returns `true` if this char sequence starts with the specified
character.\n */\npublic fun CharSequence.startsWith(char: Char, ignoreCase: Boolean = false): Boolean =\nthis.length > 0 && this[0].equals(char, ignoreCase)\n\n/**\n * Returns `true` if this char sequence ends with the
specified character.\n */\npublic fun CharSequence.endsWith(char: Char, ignoreCase: Boolean = false): Boolean =\nthis.length > 0 && this[lastIndex].equals(char, ignoreCase)\n\n/**\n * Returns `true` if this char sequence starts with the specified prefix.\n */\npublic fun
CharSequence.startsWith(prefix: CharSequence, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase &&
this is String && prefix is String)\n        return this.startsWith(prefix)\n    else\n        return regionMatchesImpl(0,
prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if a substring of this char sequence starting at the
specified offset [startIndex] starts with the specified prefix.\n */\npublic fun CharSequence.startsWith(prefix:
CharSequence, startIndex: Int, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase && this is String &&
prefix is String)\n        return this.startsWith(prefix, startIndex)\n    else\n        return regionMatchesImpl(startIndex,
prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if this char sequence ends with the specified
suffix.\n */\npublic fun CharSequence.endsWith(suffix: CharSequence, ignoreCase: Boolean
= false): Boolean {\n    if (!ignoreCase && this is String && suffix is String)\n        return this.endsWith(suffix)\n    else\n        return regionMatchesImpl(length - suffix.length, suffix, 0, suffix.length, ignoreCase)\n}\n\n// common
prefix and suffix\n\n/**\n * Returns the longest string `prefix` such that this char sequence and [other] char sequence
both start with this prefix,\n * taking care not to split surrogate pairs.\n * If this and [other] have no common prefix,
returns the empty string.\n */\n * @param ignoreCase `true` to ignore character case when matching a character. By
default `false`.\n * @sample samples.text.Strings.commonPrefixWith\n */\npublic fun
CharSequence.commonPrefixWith(other: CharSequence, ignoreCase: Boolean = false): String {\n    val
shortestLength = minOf(this.length, other.length)\n    var i = 0\n    while (i < shortestLength &&
this[i].equals(other[i], ignoreCase = ignoreCase)) {\n        i++\n    }\n    if (this.hasSurrogatePairAt(i - 1) ||
other.hasSurrogatePairAt(i
- 1)) {\n        i--\n    }\n    return subSequence(0, i).toString()\n}\n\n/**\n * Returns the longest string `suffix` such
that this char sequence and [other] char sequence both end with this suffix,\n * taking care not to split surrogate
pairs.\n * If this and [other] have no common suffix, returns the empty string.\n */\n * @param ignoreCase `true` to
ignore character case when matching a character. By default `false`.\n * @sample
samples.text.Strings.commonSuffixWith\n */\npublic fun CharSequence.commonSuffixWith(other: CharSequence,
ignoreCase: Boolean = false): String {\n    val thisLength = this.length\n    val otherLength = other.length\n    val
shortestLength = minOf(thisLength, otherLength)\n    var i = 0\n    while (i < shortestLength && this[thisLength -
i - 1].equals(other[otherLength - i - 1], ignoreCase = ignoreCase)) {\n        i++\n    }\n    if
(this.hasSurrogatePairAt(thisLength - i - 1) || other.hasSurrogatePairAt(otherLength - i - 1)) {\n        i--\n    }\n    return subSequence(thisLength - i, thisLength).toString()\n}\n\n// indexOfAny()\n\n/**\n * Finds
the index of the first occurrence of any of the specified [chars] in this char sequence,\n * starting from the specified
[startIndex] and optionally ignoring the case.\n */\n * @param ignoreCase `true` to ignore character case when
matching a character. By default `false`.\n * @return An index of the first occurrence of matched character from
[chars] or -1 if none of [chars] are found.\n */\n */\npublic fun CharSequence.indexOfAny(chars: CharArray,
startIndex: Int = 0, ignoreCase: Boolean = false): Int {\n    if (!ignoreCase && chars.size == 1 && this is String) {\n

```



```

*\n@Suppress("INAPPLICABLE_OPERATOR_MODIFIER")\npublic operator fun CharSequence.contains(char:
Char, ignoreCase: Boolean = false): Boolean =\n    indexOf(char, ignoreCase = ignoreCase) >= 0\n\n/**\n * Returns
`true` if this char sequence contains at least one match of the specified regular expression [regex].\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun CharSequence.contains(regex: Regex): Boolean =
regex.containsMatchIn(this)\n\n// rangesDelimitedBy\n\nprivate class DelimitedRangesSequence(\n    private
val input: CharSequence,\n    private val startIndex: Int,\n    private val limit: Int,\n    private val getNextMatch:
CharSequence.(currentIndex: Int) -> Pair<Int, Int>? ) : Sequence<IntRange> {\n\n    override fun iterator():
Iterator<IntRange> = object : Iterator<IntRange>
{\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n        var currentStartIndex: Int =
startIndex.coerceIn(0, input.length)\n        var nextSearchIndex: Int = currentStartIndex\n        var nextItem:
IntRange? = null\n        var counter: Int = 0\n\n        private fun calcNext() {\n            if (nextSearchIndex < 0) {\n
                nextState = 0\n                nextItem = null\n            } else {\n                if (limit > 0 && ++counter >= limit ||
nextSearchIndex > input.length) {\n                    nextItem = currentStartIndex..input.lastIndex\n
                    nextSearchIndex = -1\n                } else {\n                    val match = input.getNextMatch(nextSearchIndex)\n
                    if (match == null) {\n                        nextItem = currentStartIndex..input.lastIndex\n
                        nextSearchIndex = -1\n                    } else {\n                        val (index, length) = match\n
                        nextItem = currentStartIndex until index\n                        currentStartIndex = index + length\n
                        nextSearchIndex = currentStartIndex + if (length == 0) 1 else 0\n                    }\n                }\n                nextState =
1\n            }\n        }\n\n        override fun next(): IntRange {\n            if (nextState == -1)\n                calcNext()\n            if (nextState == 0)\n                throw NoSuchElementException()\n            val result = nextItem as IntRange\n            // Clean next to avoid keeping reference on yielded instance\n            nextItem = null\n            nextState = -1\n            return result\n        }\n\n        override fun hasNext(): Boolean {\n            if (nextState == -1)\n                calcNext()\n            return nextState == 1\n        }\n    }\n\n/**\n * Returns a sequence of index ranges of
substrings in this char sequence around occurrences of the specified [delimiters].\n * @param
delimiters One or more characters to be used as delimiters.\n * @param startIndex The index to start searching
delimiters from.\n * No range having its start value less than [startIndex] is returned.\n * [startIndex] is coerced to
be non-negative and not greater than length of this string.\n * @param ignoreCase `true` to ignore character case
when matching a delimiter. By default `false`.\n * @param limit The maximum number of substrings to return. Zero
by default means no limit is set.\n\nprivate fun CharSequence.rangesDelimitedBy(delimiters: CharArray,
startIndex: Int = 0, ignoreCase: Boolean = false, limit: Int = 0): Sequence<IntRange> {\n
    requireNonNegativeLimit(limit)\n    return DelimitedRangesSequence(this, startIndex, limit, { currentIndex ->\n
        indexOfAny(delimiters, currentIndex, ignoreCase = ignoreCase).let { if (it < 0) null else it to 1 }\n
    })\n\n/**\n * Returns a sequence of index ranges of substrings in this char sequence around occurrences of
the specified [delimiters].\n * @param delimiters One or more strings to be used as delimiters.\n * @param
startIndex The index to start searching delimiters from.\n * No range having its start value less than [startIndex] is
returned.\n * [startIndex] is coerced to be non-negative and not greater than length of this string.\n * @param
ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n * @param limit The
maximum number of substrings to return. Zero by default means no limit is set.\n * @param To avoid ambiguous results
when strings in [delimiters] have characters in common, this method proceeds from\n * the beginning to the end of
this string, and finds at each position the first element in [delimiters]\n * that matches this string at that position.\n
*\nprivate fun CharSequence.rangesDelimitedBy(delimiters: Array<out String>, startIndex: Int = 0, ignoreCase:
Boolean = false, limit: Int = 0): Sequence<IntRange> {\n    requireNonNegativeLimit(limit)\n
    val delimitersList = delimiters.asList()\n    return DelimitedRangesSequence(this, startIndex, limit, {\n
        currentIndex -> findAnyOf(delimitersList, currentIndex, ignoreCase = ignoreCase, last = false)?.let { it.first to
it.second.length } })\n\ninternal fun requireNonNegativeLimit(limit: Int) =\n    require(limit >= 0) { "\nLimit
must be non-negative, but was $limit" }\n\n// split\n\n/**\n * Splits this char sequence to a sequence of strings
around occurrences of the specified [delimiters].\n * @param delimiters One or more strings to be used as
delimiters.\n * @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n *

```

@param limit The maximum number of substrings to return. Zero by default means no limit is set.

To avoid ambiguous results when strings in [delimiters] have characters in common, this method proceeds from the beginning to the end of this string, and finds at each position the first element in [delimiters] that matches this string at that position.

```

public fun CharSequence.splitToSequence(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0): Sequence<String> =
    rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map { substring(it) }

```

Splits this char sequence to a list of strings around occurrences of the specified [delimiters].

@param delimiters One or more strings to be used as delimiters.

@param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.

@param limit The maximum number of substrings to return. Zero by default means no limit is set.

To avoid ambiguous results when strings in [delimiters] have characters in common, this method proceeds from the beginning to the end of this string, and matches at each position the first element in [delimiters] that is equal to a delimiter in this instance at that position.

```

public fun CharSequence.split(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0): List<String> {
    if (delimiters.size == 1) {
        val delimiter = delimiters[0]
        if (!delimiter.isEmpty()) {
            return split(delimiter, ignoreCase, limit)
        }
    }
    return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).asIterable().map {
        substring(it)
    }
}

```

Splits this char sequence to a sequence of strings around occurrences of the specified [delimiters].

@param delimiters One or more characters to be used as delimiters.

@param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.

@param limit The maximum number of substrings to return.

```

public fun CharSequence.splitToSequence(vararg delimiters: Char, ignoreCase: Boolean = false, limit: Int = 0): Sequence<String> =
    rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map { substring(it) }

```

Splits this char sequence to a list of strings around occurrences of the specified [delimiters].

@param delimiters One or more characters to be used as delimiters.

@param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.

@param limit The maximum number of substrings to return.

```

public fun CharSequence.split(vararg delimiters: Char, ignoreCase: Boolean = false, limit: Int = 0): List<String> {
    if (delimiters.size == 1) {
        return split(delimiters[0].toString(), ignoreCase, limit)
    }
    return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).asIterable().map { substring(it) }
}

```

Splits this char sequence to a list of strings around occurrences of the specified [delimiter].

This is specialized version of split which receives single non-empty delimiter and offers better performance.

@param delimiter String used as delimiter

@param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.

@param limit The maximum number of substrings to return.

```

private fun CharSequence.split(delimiter: String, ignoreCase: Boolean, limit: Int): List<String> {
    requireNonNegativeLimit(limit)
    var currentOffset = 0
    var nextIndex = indexOf(delimiter, currentOffset, ignoreCase)
    if (nextIndex == -1 || limit == 1) {
        return listOf(this.toString())
    }
    val isLimited = limit > 0
    val result = ArrayList<String>(if (isLimited) limit.coerceAtMost(10) else 10)
    do {
        result.add(substring(currentOffset, nextIndex))
        currentOffset = nextIndex + delimiter.length // Do not search for next occurrence if we're reaching limit
        if (isLimited && result.size == limit - 1) break
        nextIndex = indexOf(delimiter, currentOffset, ignoreCase)
    } while (nextIndex != -1)
    result.add(substring(currentOffset, length))
    return result
}

```

Splits this char sequence to a list of strings around matches of the given regular expression.

@param limit Non-negative value specifying the maximum number of substrings to return. Zero by default means no limit is set.

```

@kotlin.internal.InlineOnly
public inline fun CharSequence.split(regex: Regex, limit: Int = 0): List<String> =
    regex.split(this, limit)

```

Splits this char sequence to a sequence of strings around matches of the given regular expression.

@param limit Non-negative value specifying the maximum number of substrings to return. Zero by default means no limit is set.

@sample samples.text.Strings.splitToSequence

```

@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun CharSequence.splitToSequence(regex: Regex, limit: Int = 0): Sequence<String> =

```

`regex.splitToSequence(this, limit)` Splits this char sequence to a sequence of lines delimited by any of the following character sequences:

```
CRLF, LF or CR.

The lines returned do not include terminating line separators.

public fun
CharSequence.lineSequence(): Sequence<String> = splitToSequence("\\r\\n", "\\n", "\\r")

Splits this
char sequence to a list of lines delimited by any of the following character sequences: CRLF, LF or CR.

The
lines returned do not include terminating line separators.

public fun CharSequence.lines(): List<String> =
lineSequence().toList()

Returns `true` if the contents of this char sequence are equal to the contents of the
specified [other], i.e. both char sequences contain the same number of the same characters in the same order.

@sample samples.text.Strings.contentEquals

Since Kotlin(1.5)
public expect infix fun
CharSequence?.contentEquals(other: CharSequence?): Boolean

Returns `true` if the contents of this char
sequence are equal to the contents of the specified [other], optionally ignoring case difference.

@param ignoreCase `true` to ignore character case when comparing contents.

@sample
samples.text.Strings.contentEquals

Since Kotlin(1.5)
public expect fun
CharSequence?.contentEquals(other: CharSequence?, ignoreCase: Boolean): Boolean

internal fun
CharSequence?.contentEqualsIgnoreCaseImpl(other: CharSequence?): Boolean {
    if (this is String && other is
String) {
        return this.equals(other, ignoreCase = true)
    }
    if (this === other) return true
    if (this ==
null || other == null || this.length != other.length) return false
    for (i in 0 until length) {
        if
(!this[i].equals(other[i], ignoreCase = true)) {
            return false
        }
    }
    return true
}

internal fun
CharSequence?.contentEqualsImpl(other: CharSequence?): Boolean {
    if (this is String && other is String) {
        return this == other
    }
    if (this === other) return true
    if (this == null || other == null || this.length
!= other.length) return false
    for (i in 0 until length) {
        if (this[i] != other[i]) {
            return false
        }
    }
    return true
}

Returns `true` if the content of this string is equal to the word "true", `false`
if it is equal to "false", and throws an exception otherwise.

There is also a lenient version of the
function available on nullable String, [String?.toBoolean].

Note that this function is case-sensitive.

@sample samples.text.Strings.toBooleanStrict

Since Kotlin(1.5)
public fun String.toBooleanStrict():
Boolean = when (this) {
    "true" -> true
    "false" -> false
    else -> throw IllegalArgumentException("The
string doesn't represent a boolean value: $this")
}

Returns `true` if the content of this string is equal to
the word "true", `false` if it is equal to "false", and `null` otherwise.

There is also a lenient version of
the function available
on nullable String, [String?.toBoolean].

Note that this function is case-sensitive.

@sample
samples.text.Strings.toBooleanStrictOrNull

Since Kotlin(1.5)
public fun
String.toBooleanStrictOrNull(): Boolean? = when (this) {
    "true" -> true
    "false" -> false
    else ->
null
},

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package kotlin

import
kotlin.jvm.

Since Kotlin(1.3)
@ExperimentalUnsignedTypes
@JvmInline
public value class
UByteArray

@PublishedApi
internal constructor(@PublishedApi internal val storage: ByteArray) :
Collection<UByte> {

    /** Creates a new array of the specified [size], with all elements initialized to zero.

    public constructor(size: Int) : this(ByteArray(size))

    /** Returns the array
element at the given [index]. This method can be called using the index operator.

    * If the [index] is out of
bounds of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is
unspecified.

    public operator fun get(index: Int): UByte = storage[index].toUByte()

    /** Sets
the element at the given [index] to the given [value]. This method can be called using the index operator.

    * If the [index] is out of bounds of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS where
the behavior is unspecified.

    public operator fun set(index: Int, value: UByte) {
storage[index] = value.toByte()
    }

    /** Returns the number of elements in the array.

    public override
val size: Int get() = storage.size

    /** Creates an iterator over the elements of the array.

    public override
operator fun iterator(): kotlin.collections.Iterator<UByte>
```



```

= Iterator(storage)\n\n private class Iterator(private val array: ShortArray) : kotlin.collections.Iterator<UShort>
{\n private var index = 0\n override fun hasNext() = index < array.size\n override fun next() = if (index
< array.size) array[index++].toUShort() else throw NoSuchElementException(index.toString())\n }\n\n override
fun contains(element: UShort): Boolean {\n // TODO: Eliminate this check after KT-30016 gets fixed.\n //
Currently JS BE does not generate special bridge method for this method.\n
@Suppress("USELESS_CAST")\n if ((element as Any?) !is UShort) return false\n\n return
storage.contains(element.toShort())\n }\n\n override fun containsAll(elements: Collection<UShort>): Boolean
{\n return (elements as Collection<*>).all { it is UShort && storage.contains(it.toShort()) }\n }\n\n override
fun isEmpty(): Boolean = this.storage.size == 0\n}\n\n**\n * Creates a new
array of the specified [size], where each element is calculated by calling the specified\n * [init] function.\n *\n *
The function [init] is called for each array element sequentially starting from the first one.\n * It should return the
value for an array element given its index.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray(size: Int, init: (Int) -> UShort): UShortArray {\n return UShortArray(ShortArray(size) { index ->
init(index).toShort()
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ushortArrayOf(vararg elements: UShort): UShortArray = elements\n", /*\n * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UArraysKt")\n@file:kotlin.jvm.JvmPacka
geName("kotlin.collections.unsigned")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n**\n * Returns 1st *element* from the array.\n *\n * If the
size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UIntArray.component1(): UInt {\n return get(0)\n}\n\n**\n * Returns 1st *element* from the
array.\n *\n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n
* where the behavior is unspecified.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component1():
ULong {\n return get(0)\n}\n\n**\n * Returns 1st *element* from the array.\n *\n * If the size of this array is
less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component1(): UByte {\n return get(0)\n}\n\n**\n * Returns 1st *element* from the array.\n *\n * If
the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component1(): UShort {\n return get(0)\n}\n\n**\n * Returns 2nd *element* from the array.\n *\n *
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UIntArray.component2(): UInt {\n return get(1)\n}\n\n**\n * Returns 2nd *element* from the
array.\n *\n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n
* where the behavior is unspecified.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component2(): ULong {\n return get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n *\n *
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the

```


behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component2(): UByte {\n return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n *
If the size of this array is less than 2, throws an [IndexOutOfBoundsException]
except in Kotlin/JS\n * where the behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component2(): UShort {\n return get(1)\n}\n\n/**\n * Returns 3rd *element* from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.component3(): UInt {\n return get(2)\n}\n\n/**\n * Returns 3rd *element* from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component3(): ULong {\n return get(2)\n}\n\n/**\n * Returns 3rd *element*
from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component3(): UByte {\n return get(2)\n}\n\n/**\n * Returns 3rd *element* from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component3(): UShort {\n return get(2)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n *
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
operator fun UIntArray.component4(): UInt {\n return get(3)\n}\n\n/**\n * Returns 4th *element* from the
array.\n * \n *
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n *
where the behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component4(): ULong {\n return get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n *
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component4(): UByte {\n return get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n *
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UShortArray.component4(): UShort {\n return get(3)\n}\n\n/**\n * Returns 5th *element*
from the array.\n * \n *
If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.component5(): UInt {\n return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n *
If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun ULongArray.component5(): ULong {\n return get(4)\n}\n\n/**\n * Returns 5th *element* from
the array.\n * \n *
If the size of this array is less than 5, throws an

[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component5(): UByte {\n    return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n *
If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component5(): UShort {\n    return get(4)\n}\n\n/**\n * Returns an element at the given [index] or
throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UIntArray.elementAt(index: Int):
UInt\n\n/**\n * Returns an element at the given [index] or throws
an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun ULongArray.elementAt(index: Int):
ULong\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UByteArray.elementAt(index: Int):
UByte\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UShortArray.elementAt(index: Int):
UShort\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UInt): UInt {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> ULong): ULong {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function
if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UByte): UByte {\n    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result
of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UShort): UShort {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or
`null` if the [index] is out of bounds of this array.\n
* \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.elementAtOrNull(index: Int): UInt? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrNull(index: Int): ULong? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrNull(index: Int): UByte? {\n    return this.getOrNull(index)\n}\n\n/**\n
 * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.elementAtOrNull(index: Int): UShort? {\n    return this.getOrNull(index)\n}\n\n/**\n
 * Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.find(predicate: (UInt) -> Boolean): UInt? {\n    return firstOrNull(predicate)\n}\n\n/**\n
 * Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.find(predicate: (ULong) -> Boolean): ULong? {\n    return
firstOrNull(predicate)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.find(predicate: (UByte) -> Boolean): UByte? {\n    return firstOrNull(predicate)\n}\n\n/**\n
 * Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.find(predicate: (UShort) -> Boolean): UShort? {\n    return firstOrNull(predicate)\n}\n\n/**\n
 * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.findLast(predicate: (UInt) -> Boolean): UInt? {\n    return lastOrNull(predicate)\n}\n\n/**\n
 * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.findLast(predicate: (ULong) -> Boolean): ULong? {\n    return lastOrNull(predicate)\n}\n\n/**\n
 * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.findLast(predicate: (UByte) -> Boolean): UByte? {\n    return lastOrNull(predicate)\n}\n\n/**\n
 * Returns
the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.findLast(predicate: (UShort) -> Boolean): UShort? {\n    return lastOrNull(predicate)\n}\n\n/**\n
 * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.first(): UInt {\n    return storage.first().toUInt()\n}\n\n/**\n * Returns the first element.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

ULongArray.first(): ULong {\n  return storage.first().toULong()\n}\n\n/**\n * Returns the first element.\n * \n *  

@throws NoSuchElementException if the array is empty.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  

UByteArray.first(): UByte {\n  return storage.first().toUByte()\n}\n\n/**\n * Returns the first element.\n * \n *  

@throws NoSuchElementException if the array is empty.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  

UShortArray.first(): UShort {\n  return storage.first().toUShort()\n}\n\n/**\n * Returns the first element matching  

the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  

UIntArray.first(predicate: (UInt) -> Boolean): UInt {\n  for (element in this) if (predicate(element)) return  

element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n *  

Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException]  

if no such element is found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  

ULongArray.first(predicate: (ULong) -> Boolean): ULong {\n  for (element in this) if (predicate(element)) return  

element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n *  

Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such  

element is found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  

UByteArray.first(predicate: (UByte) -> Boolean): UByte {\n  for (element in this) if (predicate(element)) return  

element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n *  

Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such  

element is found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  

inline fun UShortArray.first(predicate: (UShort) -> Boolean): UShort {\n  for (element in this) if  

(predicate(element)) return element\n  throw NoSuchElementException("Array contains no element matching the  

predicate.")\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.firstOrNull(): UInt? {\n  return  

if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.firstOrNull(): ULong? {\n  

return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.firstOrNull(): UByte? {\n  

return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.firstOrNull(): UShort? {\n  

return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null`  

if element was not found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  

UIntArray.firstOrNull(predicate: (UInt) -> Boolean): UInt? {\n  for (element in this) if (predicate(element)) return  

element\n  return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element  

was not found.\n *  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  

inline fun ULongArray.firstOrNull(predicate: (ULong) -> Boolean): ULong? {\n  for (element in this) if  

(predicate(element)) return element\n  return null\n}\n\n/**\n * Returns the first element matching the given  

[predicate], or `null` if element was not found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  

inline fun UByteArray.firstOrNull(predicate: (UByte) -> Boolean): UByte? {\n  for (element in this) if  

(predicate(element)) return element\n  return null\n}\n\n/**\n * Returns the first element matching the given  

[predicate], or `null` if element was not found.\n  

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

UShortArray.firstOrNull(predicate: (UShort) -> Boolean): UShort? {\n  for (element in this) if (predicate(element))
return element\n  return null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this array.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.getOrNull(index: Int, defaultValue: (Int) -> UInt): UInt {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.getOrNull(index: Int, defaultValue: (Int) -> ULong): ULong {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.getOrNull(index: Int, defaultValue: (Int) -> UByte): UByte {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.getOrNull(index: Int, defaultValue: (Int) -> UShort): UShort {\n  return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or
`null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.getOrNull(index: Int): UInt? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n
* Returns an element at the given
[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.getOrNull(index: Int):
ULong? {\n  return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n
* Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.getOrNull(index: Int): UByte?
{\n  return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n
* Returns an element at the
given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.getOrNull(index: Int):
UShort? {\n  return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n
* Returns first index of
[element], or -1 if the array does not contain element.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOf(element: UInt): Int {\n  return storage.indexOf(element.toInt())\n}\n\n/**\n
* Returns
first index of [element], or -1 if the array does not contain element.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOf(element: ULong): Int {\n  return storage.indexOf(element.toLong())\n}\n\n/**\n
* Returns
first index of [element], or -1 if the array does not contain element.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOf(element: UByte): Int {\n  return storage.indexOf(element.toByte())\n}\n\n/**\n
* Returns
first index of [element], or -1 if the array does not contain element.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOf(element: UShort): Int {\n  return storage.indexOf(element.toShort())\n}\n\n/**\n
* Returns
index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.indexOfFirst(predicate: (UInt) -> Boolean): Int {\n  return storage.indexOfFirst {
predicate(it.toUInt()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOfFirst(predicate: (ULong) -> Boolean): Int {\n  return storage.indexOfFirst {
predicate(it.toULong()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfFirst(predicate: (UByte) -> Boolean): Int {\n  return storage.indexOfFirst {
predicate(it.toUByte()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if
the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfFirst(predicate: (UShort) -> Boolean): Int {\n  return storage.indexOfFirst {
predicate(it.toUShort()) }\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOfLast(predicate: (UInt) -> Boolean): Int {\n  return storage.indexOfLast { predicate(it.toUInt())
}\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain
such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.indexOfLast(predicate: (ULong) -> Boolean): Int {\n  return storage.indexOfLast {
predicate(it.toULong()) }\n}\n\n/**\n * Returns
index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfLast(predicate: (UByte) -> Boolean): Int {\n  return storage.indexOfLast {
predicate(it.toUByte()) }\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfLast(predicate: (UShort) -> Boolean): Int {\n  return storage.indexOfLast {
predicate(it.toUShort()) }\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.last(): UInt {\n  return storage.last().toUInt()\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.last(): ULong {\n  return storage.last().toULong()\n}\n\n/**\n * Returns the last element.\n * \n *
@throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.last(): UByte {\n  return storage.last().toUByte()\n}\n\n/**\n * Returns the last element.\n * \n *
@throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.last(): UShort {\n  return
storage.last().toUShort()\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.last(predicate: (UInt) -> Boolean): UInt {\n  for (index in this.indices.reversed()) {\n    val element =
this[index]\n    if (predicate(element)) return element\n  }\n  throw NoSuchElementException("Array contains
no element matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.last(predicate: (ULong) -> Boolean): ULong {\n  for (index in this.indices.reversed())
{\n    val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.last(predicate: (UByte) -> Boolean): UByte {\n  for (index in this.indices.reversed()) {\n    val
element = this[index]\n    if (predicate(element)) return element\n  }\n  throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.last(predicate: (UShort) -> Boolean): UShort {\n  for (index in this.indices.reversed()) {\n
val element = this[index]\n    if (predicate(element)) return element\n  }\n  throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns last index
of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.lastIndexOf(element: UInt): Int {\n  return storage.lastIndexOf(element.toInt())\n}\n\n/**\n * Returns
last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastIndexOf(element: ULong): Int {\n  return storage.lastIndexOf(element.toLong())\n}\n\n/**\n *
Returns last index of [element],\n * or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastIndexOf(element: UByte): Int {\n  return storage.lastIndexOf(element.toByte())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.lastIndexOf(element: UShort): Int {\n  return storage.lastIndexOf(element.toShort())\n}\n\n/**\n *
Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.lastOrNull(): UInt? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.lastOrNull(): ULong? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the
last element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.lastOrNull(): UByte? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.lastOrNull(): UShort? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element matching the given [predicate], or
`null` if no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.lastOrNull(predicate:
    (UInt) -> Boolean): UInt? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastOrNull(predicate: (ULong) -> Boolean): ULong? {\n    for (index in this.indices.reversed()) {\n
val element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the
last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastOrNull(predicate:
    (UByte) -> Boolean): UByte? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.lastOrNull(predicate: (UShort) -> Boolean): UShort? {\n    for (index in this.indices.reversed()) {\n
val element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns a
random element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.random(): UInt {\n    return random(Random)\n}\n\n/**\n * Returns a random element
from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.random(): ULong {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this
array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.random(): UByte {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this
array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.random(): UShort {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this
array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.random(random: Random): UInt {\n    if (isEmpty())\n        throw NoSuchElementException("Array
is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the
specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.random(random: Random):
ULong {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.random(random: Random):
UByte {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random
element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if
this array is empty.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.random(random: Random): UShort {\n    if (isEmpty())\n        throw
NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random

```


element from this array, or `null` if this array is empty.\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.randomOrNull(): UInt? {\n    return
```

```
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.randomOrNull(): ULong? {\n    return
```

```
randomOrNull(Random)\n}\n\n/**\n * Returns
```

```
a random element from this array, or `null` if this array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.randomOrNull(): UByte? {\n    return
```

```
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.randomOrNull(): UShort? {\n    return
```

```
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun UIntArray.randomOrNull(random: Random): UInt? {\n    if (isEmpty())\n        return null\n    return
```

```
get(random.nextInt(size))\n}\n\n/**\n * Returns
```

```
a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ULongArray.randomOrNull(random: Random): ULong? {\n    if (isEmpty())\n        return null\n    return
```

```
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
```

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\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun UByteArray.randomOrNull(random: Random): UByte? {\n    if (isEmpty())\n        return null\n    return
```

```
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
```

```
\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun UShortArray.randomOrNull(random:
```

```
Random): UShort? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
UIntArray.single(): UInt {\n    return storage.single().toUInt()\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
ULongArray.single(): ULong {\n    return storage.single().toULong()\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
UByteArray.single(): UByte {\n    return storage.single().toUByte()\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
UShortArray.single(): UShort {\n    return storage.single().toUShort()\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
UIntArray.single(predicate: (UInt) -> Boolean): UInt {\n    var single: UInt? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException("Array contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if
```

```
(!found) throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n
```

```

@Suppress("UNCHECKED_CAST")\n
    return single as UInt\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception\n if there is no or more than one matching element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.single(predicate: (ULong) -> Boolean): ULong {\n    var single: ULong? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException("Array\n contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if\n (!found) throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n    return single as ULong\n}\n\n/**\n * Returns the single element\n matching the given [predicate], or throws exception if there is no or more than one matching element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun UByteArray.single(predicate: (UByte) -> Boolean): UByte {\n    var single: UByte? = null\n    var found\n = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw\n IllegalArgumentException("Array contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Array contains no element matching\n the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n    return single as UByte\n}\n\n/**\n * Returns the\n single element matching the given [predicate], or throws exception if there is no or more than one matching\n element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun UShortArray.single(predicate: (UShort) -> Boolean): UShort {\n    var single: UShort? = null\n    var found =\n false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw\n IllegalArgumentException("Array contains more than one matching element.")\n            single\n = element\n            found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Array contains no\n element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n    return single as\n UShort\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.singleOrNull(): UInt? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more\n than one element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun\nUIntArray.singleOrNull(): ULong? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single\n element, or `null` if the array is empty or has more than one element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun\nUByteArray.singleOrNull(): UByte? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single\n element, or `null` if the array is empty or has more than one element.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.singleOrNull(): UShort? {\n    return\n if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single element matching the given [predicate], or\n `null` if element was not found or more than one element was found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.singleOrNull(predicate: (UInt) -> Boolean): UInt? {\n    var single: UInt? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the single element\n matching the given [predicate], or `null`\n if element was not found or more than one element was found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.singleOrNull(predicate: (ULong) -> Boolean): ULong? {\n    var single: ULong? = null\n    var found\n = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single =\n element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns the\n single element matching the given [predicate], or `null` if element was not found or more than one element was\n found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun UByteArray.singleOrNull(predicate: (UByte) -> Boolean): UByte? {\n    var single: UByte? = null\n    var found

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= false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =
element\n
found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the single
element matching the given [predicate], or `null` if element was not found or more than one element was found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.singleOrNull(predicate: (UShort) -> Boolean): UShort? {\n var single: UShort? = null\n var found
= false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =
element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns a list
containing all elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n *
*\n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.drop(n: Int): List<UInt>
{\n require(n >= 0) { "Requested element count $n is less than zero." }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.drop(n: Int): List<ULong> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.drop(n: Int): List<UByte> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.drop(n: Int): List<UShort> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.dropLast(n: Int): List<UInt> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.dropLast(n: Int):
List<ULong> {\n require(n >= 0) { "Requested element count $n is less than zero." }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.dropLast(n: Int): List<UByte>
{\n require(n >= 0) { "Requested element count $n is less than zero." }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.dropLast(n: Int):
List<UShort> {\n require(n >= 0) { "Requested element count $n is less than zero." }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given

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[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.dropLastWhile(predicate: (UInt) -> Boolean): List<UInt> {\n  for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n    return take(index + 1)\n  } \n } \n return emptyList()\n}\n\n/**\n *
Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.dropLastWhile(predicate: (ULong) -> Boolean): List<ULong> {\n  for (index in lastIndex
downTo 0) {\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    } \n } \n return
emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.dropLastWhile(predicate: (UByte) -> Boolean): List<UByte> {\n  for (index in lastIndex downTo 0)
{\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    } \n } \n return emptyList()\n}\n\n/**\n *
Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.dropLastWhile(predicate: (UShort) -> Boolean): List<UShort> {\n  for (index in lastIndex
downTo 0) {\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    } \n } \n return
emptyList()\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.dropWhile(predicate: (UInt) -> Boolean): List<UInt> {\n  var yielding = false\n  val list =
ArrayList<UInt>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n      yielding = true\n    } \n  return list\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.dropWhile(predicate: (ULong) -> Boolean): List<ULong> {\n  var yielding = false\n  val list =
ArrayList<ULong>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    } \n  return list\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.dropWhile(predicate: (UByte) -> Boolean): List<UByte> {\n  var yielding = false\n  val list =
ArrayList<UByte>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    } \n  return list\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.dropWhile(predicate: (UShort) -> Boolean): List<UShort> {\n  var yielding = false\n  val list =
ArrayList<UShort>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    } \n  return list\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filter(predicate:
(UInt) -> Boolean): List<UInt> {\n  return filterTo(ArrayList<UInt>(), predicate)\n}\n\n/**\n * Returns a list
containing only elements matching the given [predicate].\n * \n * @sample

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samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filter(predicate: (ULong) -> Boolean): List<ULong> {\n    return filterTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filter(predicate: (UByte) -> Boolean): List<UByte> {\n    return filterTo(ArrayList<UByte>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.filter(predicate: (UShort) -> Boolean): List<UShort> {\n    return filterTo(ArrayList<UShort>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filterIndexed(predicate: (index: Int, UInt) -> Boolean): List<UInt> {\n    return
filterIndexedTo(ArrayList<UInt>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation
on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filterIndexed(predicate: (index: Int, ULong) -> Boolean): List<ULong> {\n    return
filterIndexedTo(ArrayList<ULong>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filterIndexed(predicate: (index: Int, UByte) -> Boolean): List<UByte> {\n    return
filterIndexedTo(ArrayList<UByte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.filterIndexed(predicate: (index: Int, UShort) -> Boolean): List<UShort> {\n    return
filterIndexedTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate]
to the given [destination].\n * @param [predicate] function that takes the index of an element and the element
itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterIndexedTo(destination: C, predicate: (index: Int,
UInt) -> Boolean): C {\n    forEachIndexed { index, element ->\n        if (predicate(index, element))
destination.add(element)\n    }\n    return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterIndexedTo(destination: C, predicate: (index: Int, ULong) ->
Boolean): C {\n    forEachIndexed { index, element ->\n        if (predicate(index, element))

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destination.add(element)\n } \n return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of
an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterIndexedTo(destination: C, predicate: (index: Int, UByte) ->
Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n } \n return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>>
UShortArray.filterIndexedTo(destination: C, predicate: (index: Int, UShort) -> Boolean): C {\n forEachIndexed {
index, element ->\n if (predicate(index, element)) destination.add(element)\n } \n return
destination\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filterNot(predicate: (UInt) -> Boolean): List<UInt> {\n return filterNotTo(ArrayList<UInt>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filterNot(predicate: (ULong) -> Boolean): List<ULong> {\n return filterNotTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filterNot(predicate: (UByte) -> Boolean): List<UByte> {\n return filterNotTo(ArrayList<UByte>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.filterNot(predicate: (UShort) -> Boolean): List<UShort> {\n return
filterNotTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements not matching the given [predicate]
to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <C : MutableCollection<in UInt>> UIntArray.filterNotTo(destination: C, predicate: (UInt) -> Boolean):
C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n *
Appends all elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterNotTo(destination: C, predicate: (ULong) -> Boolean): C {\n
for (element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends
all elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in
UByte>> UByteArray.filterNotTo(destination: C, predicate: (UByte) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not

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matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterNotTo(destination: C, predicate: (UShort) -> Boolean): C {\n
for (element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends
all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterTo(destination:
C, predicate: (UInt) -> Boolean): C {\n for (element in this) if (predicate(element)) destination.add(element)\n
return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
\n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterTo(destination: C, predicate: (ULong) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterTo(destination: C, predicate: (UByte) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterTo(destination: C, predicate: (UShort) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Returns a list
containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: IntRange):
List<UInt> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.slice(indices: IntRange): List<ULong> {\n if (indices.isEmpty()) return listOf()\n return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
indices in the specified [indices] range.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.slice(indices: IntRange): List<UByte> {\n if (indices.isEmpty()) return listOf()\n return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
indices in the specified [indices] range.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.slice(indices: IntRange): List<UShort> {\n if (indices.isEmpty()) return listOf()\n return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
specified [indices].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.slice(indices: Iterable<Int>): List<UInt> {\n val size = indices.collectionSizeOrDefault(10)\n if
(size == 0) return emptyList()\n val list = ArrayList<UInt>(size)\n for (index in indices) {\n
list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.slice(indices: Iterable<Int>):
List<ULong> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<ULong>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: Iterable<Int>):
List<UByte> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n

```

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    val list = ArrayList<UByte>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return
list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.slice(indices: Iterable<Int>):
List<UShort> {\n    val size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list =
ArrayList<UShort>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return list\n}\n\n/**\n *
Returns an array containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sliceArray(indices:
Collection<Int>): UIntArray {\n    return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sliceArray(indices:
Collection<Int>):
ULongArray {\n    return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing
elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sliceArray(indices: Collection<Int>):
UByteArray {\n    return
UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements of this array at
specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sliceArray(indices: Collection<Int>): UShortArray {\n    return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.sliceArray(indices: IntRange): UIntArray {\n    return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n
* Returns an array containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.sliceArray(indices: IntRange): ULongArray {\n    return
ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sliceArray(indices: IntRange): UByteArray {\n    return
UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sliceArray(indices: IntRange): UShortArray {\n    return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.take(n: Int): List<UInt> {\n
    require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<UInt>(n)\n
    for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.take(n: Int): List<ULong> {\n
    require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<ULong>(n)\n
    for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.take(n: Int): List<UByte> {\n
    require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<UByte>(n)\n
    for

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(item in this) {\n    list.add(item)\n    if (++count == n)\n        break\n    }\n    return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.take(n: Int): List<UShort> {\n
    require(n
>= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    if (n >= size)
return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<UShort>(n)\n    for
(item in this) {\n    list.add(item)\n    if (++count == n)\n        break\n    }\n    return list\n}\n\n/**\n * Returns
a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.takeLast(n: Int): List<UInt> {\n
    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val size =
size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(this[size - 1])\n    val list = ArrayList<UInt>(n)\n
for (index in size - n until size)\n    list.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.takeLast(n: Int): List<ULong>
{\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val
size = size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(this[size - 1])\n    val list =
ArrayList<ULong>(n)\n    for (index in size - n until size)\n    list.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.takeLast(n: Int): List<UByte>
{\n    require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1) return
listOf(this[size - 1])\n    val list = ArrayList<UByte>(n)\n    for (index in size - n until size)\n
list.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.takeLast(n: Int): List<UShort>
{\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val
size = size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(this[size - 1])\n    val list =
ArrayList<UShort>(n)\n    for (index in size - n until size)\n    list.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.takeLastWhile(predicate: (UInt) -> Boolean): List<UInt> {\n    for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n        return drop(index + 1)\n    }\n    }\n    return toList()\n}\n\n/**\n * Returns a
list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.takeLastWhile(predicate: (ULong) -> Boolean): List<ULong> {\n    for (index in lastIndex downTo 0)
{\n    if (!predicate(this[index])) {\n        return drop(index + 1)\n    }\n    }\n    return toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n *
@sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.takeLastWhile(predicate: (UByte) -> Boolean): List<UByte> {\n    for (index in lastIndex downTo 0)
{\n    if (!predicate(this[index])) {\n        return drop(index + 1)\n    }\n    }\n    return toList()\n}\n\n/**\n *

```

Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.takeLastWhile(predicate: (UShort) -> Boolean): List<UShort> {\n  for (index in lastIndex downTo 0)
{\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    } \n  } \n  return toList()\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.takeWhile(predicate: (UInt) -> Boolean): List<UInt> {\n  val list = ArrayList<UInt>()\n  for (item in
this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n * Returns a list
containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.takeWhile(predicate: (ULong) -> Boolean): List<ULong> {\n  val list = ArrayList<ULong>()\n  for
(item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.takeWhile(predicate: (UByte) -> Boolean): List<UByte> {\n  val list = ArrayList<UByte>()\n  for
(item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.takeWhile(predicate: (UShort) -> Boolean): List<UShort> {\n  val list = ArrayList<UShort>()\n  for
(item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n *
Reverses elements in the array in-place.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reverse():
Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements of the array in the specified
range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of
this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Reverses elements of the array in the specified range in-place.\n * \n
```

```

* @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the range
(exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]
is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n * \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline
fun UByteArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n    storage.reverse(fromIndex, toIndex)\n}\n * \n *
Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
* \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public
inline fun UShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n    storage.reverse(fromIndex,
toIndex)\n}\n * \n * Returns a list with elements in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * public fun UIntArray.reversed(): List<UInt> {\n    if
(isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n * \n * Returns a
list with elements in reversed order.\n * \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * public fun
ULongArray.reversed(): List<ULong> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n
list.reverse()\n    return list\n}\n * \n * Returns a list with elements in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * public fun UByteArray.reversed(): List<UByte> {\n
if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n * \n *
Returns a list with elements in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * public fun UShortArray.reversed(): List<UShort> {\n
if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n * \n * Returns
an array with elements of this array in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline fun
UIntArray.reversedArray(): UIntArray {\n    return UIntArray(storage.reversedArray())\n}\n * \n * Returns an
array with elements of this array in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline fun
ULongArray.reversedArray(): ULongArray {\n    return ULongArray(storage.reversedArray())\n}\n * \n * Returns an
array with elements of this array in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline fun
UByteArray.reversedArray():
UByteArray {\n    return UByteArray(storage.reversedArray())\n}\n * \n * Returns an array with elements of this
array in reversed order.\n
* \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline fun
UShortArray.reversedArray(): UShortArray {\n    return UShortArray(storage.reversedArray())\n}\n * \n * Returns
an array with elements of this array in reversed order.\n
* \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * public fun UIntArray.shuffle(): Unit {\n
shuffle(Random)\n}\n * \n * Randomly shuffles elements in this array in-place.\n
* \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * public fun ULongArray.shuffle(): Unit {\n
shuffle(Random)\n}\n * \n * Randomly shuffles elements in this array in-place.\n
* \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * public fun UByteArray.shuffle(): Unit {\n
shuffle(Random)\n}\n * \n * Randomly shuffles elements in this array in-place.\n
* \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * public
fun UShortArray.shuffle(): Unit {\n    shuffle(Random)\n}\n * \n * Randomly shuffles elements in this array in-
place using the specified [random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
* \n * @SinceKotlin("1.4")\n * @ExperimentalUnsignedTypes\n * public fun UIntArray.shuffle(random: Random): Unit
{\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] =

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this[j]\n    this[j] = copy\n    }\n}\n\n**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.shuffle(random: Random):
Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n**\n * Randomly shuffles elements in this
array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.shuffle(random: Random):
Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] =
this[j]\n        this[j] = copy\n    }\n}\n\n**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.shuffle(random: Random):
Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val
copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n**\n * Sorts elements in the array in-place
descending according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sortDescending(): Unit {\n    if
(size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n**\n * Sorts elements in the array in-place descending
according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n**\n * Sorts
elements in the array in-place descending according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sortDescending(): Unit {\n    if
(size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n**\n * Sorts elements in the array in-place descending
according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n**\n *
Returns a list of all elements sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sorted(): List<UInt> {\n    return
copyOf().apply { sort() }.asList()\n}\n\n**\n * Returns a list of all elements sorted according to their natural sort
order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sorted():
List<ULong> {\n    return copyOf().apply { sort() }.asList()\n}\n\n**\n * Returns a list of all elements sorted
according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sorted(): List<UByte> {\n    return copyOf().apply { sort() }.asList()\n}\n\n**\n * Returns a list of all
elements sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.sorted(): List<UShort> {\n    return copyOf().apply { sort() }.asList()\n}\n\n**\n * Returns an
array with all elements of this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sortedArray(): UIntArray {\n    if
(isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n**\n * Returns an array with all elements of
this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sortedArray(): ULongArray
{\n    if (isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n**\n * Returns an array with all
elements of this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sortedArray(): UByteArray {\n    if
(isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n**\n * Returns
an array with all elements of this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sortedArray(): UShortArray
{\n    if (isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n**\n * Returns an array with all

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elements of this array sorted descending according to their natural sort order.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sortedArrayDescending():
UIntArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns
an array with all elements of this array sorted descending according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sortedArrayDescending():
ULongArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sortDescending() }\n}\n\n/**\n *
Returns an array with all elements of this array sorted descending according
to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sortedArrayDescending(): UByteArray {\n if (isEmpty()) return this\n return this.copyOf().apply {
sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to
their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sortedArrayDescending(): UShortArray {\n if (isEmpty()) return this\n return this.copyOf().apply {
sortDescending() }\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort
order.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after
sorting.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sortedDescending():
List<UInt> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted
descending
according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve their order
relative to each other after sorting.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.sortedDescending(): List<ULong> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n *
Returns a list of all elements sorted descending according to their natural sort order.\n * \n * The sort is _stable_. It
means that equal elements preserve their order relative to each other after sorting.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sortedDescending(): List<UByte> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted
descending according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve
their order relative to each other after sorting.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun
UShortArray.sortedDescending(): List<UShort> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n *
Returns an array of type [ByteArray], which is a view of this array where each element is a signed reinterpretation\n
* of the corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.asByteArray(): ByteArray {\n return storage\n}\n\n/**\n * Returns an array of type [IntArray], which
is a view of this array where each element is a signed reinterpretation\n
* of the corresponding element of this
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.asIntArray(): IntArray {\n return storage\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UIntArray.asList():
List<UInt>\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun ULongArray.asList():
List<ULong>\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UByteArray.asList():
List<UByte>\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UShortArray.asList():
List<UShort>\n\n/**\n * Returns an array of type [LongArray], which is a view of this array where each element is
a signed reinterpretation\n
* of the corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.asLongArray(): LongArray {\n return storage\n}\n\n/**\n * Returns an array of type [ShortArray],
which is a view of this array where each element is a signed reinterpretation\n
* of the corresponding element of this
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
```

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inline fun UShortArray.asShortArray(): ShortArray {
    return storage
}

/** Returns an array of type [UByteArray], which is a view of this array where each element is an unsigned reinterpretation of the corresponding element of this array. */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun UByteArray.asUByteArray(): UByteArray {
    return UByteArray(this)
}

/** Returns an array of type [UIntArray], which is a view of this array where each element is an unsigned reinterpretation of the corresponding element of this array. */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun UIntArray.asUIIntArray(): UIIntArray {
    return UIIntArray(this)
}

/** Returns an array of type [ULongArray], which is a view of this array where each element is an unsigned reinterpretation of the corresponding element of this array. */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun ULongArray.asULongArray(): ULongArray {
    return ULongArray(this)
}

/** Returns an array of type [UShortArray], which is a view of this array where each element is an unsigned reinterpretation of the corresponding element of this array. */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun UShortArray.asUShortArray(): UShortArray {
    return UShortArray(this)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. Use Kotlin compiler 1.4 to avoid deprecation warning. */
@SinceKotlin("1.3")@DeprecatedSinceKotlin(hiddenSince = "1.4")@ExperimentalUnsignedTypes
public infix fun UIIntArray.contentEquals(other: UIIntArray): Boolean {
    return this.contentEquals(other)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. Use Kotlin compiler 1.4 to avoid deprecation warning. */
@SinceKotlin("1.3")@DeprecatedSinceKotlin(hiddenSince = "1.4")@ExperimentalUnsignedTypes
public infix fun ULongArray.contentEquals(other: ULongArray): Boolean {
    return this.contentEquals(other)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. Use Kotlin compiler 1.4 to avoid deprecation warning. */
@SinceKotlin("1.3")@DeprecatedSinceKotlin(hiddenSince = "1.4")@ExperimentalUnsignedTypes
public infix fun UByteArray.contentEquals(other: UByteArray): Boolean {
    return this.contentEquals(other)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. Use Kotlin compiler 1.4 to avoid deprecation warning. */
@SinceKotlin("1.3")@DeprecatedSinceKotlin(hiddenSince = "1.4")@ExperimentalUnsignedTypes
public infix fun UShortArray.contentEquals(other: UShortArray): Boolean {
    return this.contentEquals(other)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. */
@SinceKotlin("1.4")@ExperimentalUnsignedTypes
public infix fun UIIntArray?.contentEquals(other: UIIntArray?): Boolean {
    return this?.storage?.contentEquals(other?.storage)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. */
@SinceKotlin("1.4")@ExperimentalUnsignedTypes
public infix fun ULongArray?.contentEquals(other: ULongArray?): Boolean {
    return this?.storage?.contentEquals(other?.storage)
}

/** Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order. */
@SinceKotlin("1.4")@ExperimentalUnsignedTypes
public infix fun UByteArray?.contentEquals(other: UByteArray?): Boolean {
    return this?.storage?.contentEquals(other?.storage)
}

/** Returns `true` if the two specified arrays are structurally

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equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UShortArray?.contentEquals(other:
UShortArray?): Boolean {\n    return this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns a hash code
based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid
deprecation warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince
= "1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.contentHashCode(): Int {\n    return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*/\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.contentHashCode(): Int {\n    return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*/\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.contentHashCode(): Int {\n    return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*/\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince
= "1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.contentHashCode(): Int {\n    return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray?.contentHashCode(): Int {\n
return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it
is [List].\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray?.contentHashCode(): Int {\n    return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash
code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray?.contentHashCode(): Int {\n    return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it
is [List].\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray?.contentHashCode(): Int {\n
return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a string representation of the contents of the specified
array as if it is [List].\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.contentToString(): String {\n    return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n */\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.contentToString(): String {\n
return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.contentToString(): String {\n    return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n */\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.contentToString(): String {\n    return

```

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this.contentToString()\n\n/**\n * Returns a string representation of the contents of the specified
array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray?.contentToString(): String {\n
return this?.joinToString(", ", "[", "]") ?: "null"\n}\n\n/**\n * Returns a string representation of the contents of
the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray?.contentToString(): String {\n
return this?.joinToString(", ", "[", "]") ?: "null"\n}\n\n/**\n * Returns a string representation of the contents of
the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray?.contentToString(): String {\n
return this?.joinToString(", ", "[", "]") ?: "null"\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray?.contentToString(): String {\n
return this?.joinToString(", ", "[", "]") ?: "null"\n}\n\n/**\n * Copies this array or its subrange into the
[destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even
specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy
to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param
startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive)
of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex]
or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws
IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified
[destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the
[destination] array.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.copyInto(destination: UIntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):
UIntArray {\n    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n    return
destination}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n *
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the
destination range.\n * \n * @param destination the array to copy to.\n * @param
destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the
beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n *
\n * @return the [destination] array.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.copyInto(destination: ULongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):
ULongArray {\n    storage.copyInto(destination.storage, destinationOffset, startIndex,
endIndex)\n    return destination}\n\n/**\n * Copies this array or its subrange into the [destination] array and
returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so
that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param
destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the
beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or

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[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.copyInto(destination: UByteArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):  
UByteArray {\n    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n    return  
destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array. \n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the  
destination range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in the  
[destination] array to copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy,  
0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws IndexOutOfBoundsException
```

or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.copyInto(destination: UShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int =  
size): UShortArray {\n    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n    return  
destination\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample  
samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.copyOfOf():
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```
UIntArray {\n    return UIntArray(storage.copyOfOf())\n}\n\n/**\n * Returns new array which is a copy of the  
original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.copyOfOf(): ULongArray {\n    return ULongArray(storage.copyOfOf())\n}\n\n/**\n * Returns new array  
which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.copyOfOf(): UByteArray {\n    return UByteArray(storage.copyOfOf())\n}\n\n/**\n * Returns new array  
which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.copyOfOf(): UShortArray {\n    return UShortArray(storage.copyOfOf())\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize]. \n * The copy is either  
truncated or padded at the end with zero values if necessary. \n * \n * - If [newSize] is less than the size of the  
original array, the copy array is truncated to the [newSize]. \n * - If [newSize] is greater than the size of the  
original array, the extra elements in the copy array are filled with zero values. \n
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```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.copyOfOf(newSize: Int): UIntArray {\n    return UIntArray(storage.copyOfOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize]. \n * The copy is either  
truncated or padded at the end with zero values if necessary. \n * \n * - If [newSize] is less than the size of the  
original array, the copy array is truncated to the [newSize]. \n * - If [newSize] is greater than the size of the  
original array, the extra elements in the copy array are filled with zero values. \n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.copyOfOf(newSize: Int): ULongArray {\n    return ULongArray(storage.copyOfOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize]. \n * The copy is either  
truncated or padded at the end with zero values if necessary. \n * \n * - If [newSize] is less than the size of the
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original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyOf(newSize: Int): UByteArray {\n    return UByteArray(storage.copyOf(newSize))\n}\n\n/**\n *
Returns new array which is a copy of the original array, resized to the
given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n * \n * - If
[newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is
greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.copyOf(newSize: Int): UShortArray {\n    return UShortArray(storage.copyOf(newSize))\n}\n\n/**\n *
Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start
of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.copyOfRange(fromIndex: Int, toIndex: Int): UIntArray {\n    return
UIntArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
@param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.copyOfRange(fromIndex: Int, toIndex: Int): ULongArray {\n    return
ULongArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param
fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n
*\n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of
this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyOfRange(fromIndex: Int, toIndex: Int): UByteArray {\n    return
UByteArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
@param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.copyOfRange(fromIndex: Int, toIndex: Int): UShortArray {\n    return
UShortArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Fills this array or its subrange with the
specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n *
@param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.fill(element: UInt, fromIndex:
Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toInt(), fromIndex, toIndex)\n}\n\n/**\n * Fills this array
or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
(exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
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greater than [toIndex].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.fill(element: ULong, fromIndex: Int = 0, toIndex: Int = size): Unit {\n  storage.fill(element.toLong(),
fromIndex, toIndex)\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n *
@param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
(exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.fill(element: UByte, fromIndex: Int = 0, toIndex: Int = size): Unit {\n  storage.fill(element.toByte(),
fromIndex, toIndex)\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n *
@param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
(exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.fill(element: UShort, fromIndex: Int = 0, toIndex: Int = size): Unit {\n  storage.fill(element.toShort(),
fromIndex, toIndex)\n}\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
inline val UIntArray.indices: IntRange\n  get() = storage.indices\n\n/**\n * Returns the range of valid indices for
the array.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val ULongArray.indices:
IntRange\n  get() = storage.indices\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UByteArray.indices: IntRange\n
get() = storage.indices\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UShortArray.indices: IntRange\n
get() = storage.indices\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UIntArray.lastIndex: Int\n  get() =
storage.lastIndex\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val ULongArray.lastIndex: Int\n  get() =
storage.lastIndex\n\n/**\n * Returns the last valid index for the
array.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UByteArray.lastIndex: Int\n
get() = storage.lastIndex\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UShortArray.lastIndex: Int\n  get() =
storage.lastIndex\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
operator fun UIntArray.plus(element: UInt): UIntArray {\n  return UIntArray(storage +
element.toInt())\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
operator fun ULongArray.plus(element:
ULong): ULongArray {\n  return ULongArray(storage + element.toLong())\n}\n\n/**\n * Returns an array
containing all elements of the original array and then the given [element].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.plus(element: UByte): UByteArray {\n  return UByteArray(storage + element.toByte())\n}\n\n/**\n *
Returns an array containing all elements of the original array and then the given [element].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.plus(element: UShort): UShortArray {\n  return UShortArray(storage +
element.toShort())\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] collection.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator
fun UIntArray.plus(elements: Collection<UInt>): UIntArray {\n  var index = size\n
val result = storage.copyOfOf(size + elements.size)\n  for (element in elements) result[index++] = element.toInt()\n
return UIntArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all

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elements of the given [elements] collection.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
operator fun ULongArray.plus(elements: Collection<ULong>): ULongArray {\n  var index = size\n  val result =
storage.copyOfOf(size + elements.size)\n  for (element in elements) result[index++] = element.toLong()\n  return
ULongArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] collection.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
operator fun UByteArray.plus(elements: Collection<UByte>): UByteArray {\n  var index = size\n  val result =
storage.copyOfOf(size + elements.size)\n  for (element in elements) result[index++] = element.toByte()\n
return UByteArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] collection.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
operator fun UShortArray.plus(elements: Collection<UShort>): UShortArray {\n  var index = size\n  val result =
storage.copyOfOf(size + elements.size)\n  for (element in elements) result[index++] = element.toShort()\n  return
UShortArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.plus(elements: UIntArray): UIntArray {\n  return UIntArray(storage + elements.storage)\n}\n\n/**\n *
Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun ULongArray.plus(elements: ULongArray): ULongArray {\n  return ULongArray(storage +
elements.storage)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.plus(elements: UByteArray): UByteArray {\n  return UByteArray(storage +
elements.storage)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.plus(elements: UShortArray): UShortArray {\n  return UShortArray(storage +
elements.storage)\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArray\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.sort(): Unit {\n  if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n * \n *
@sample samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sort(): Unit {\n  if (size > 1)
sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UByteArray.sort(): Unit {\n  if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n * \n *
@sample samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sort(): Unit {\n  if (size > 1)
sortArray(this, 0, size)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the
range (inclusive) to sort, 0 by default.\n * @param toIndex the end of
the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sort(fromIndex: Int = 0, toIndex:
Int = size): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArray(this, fromIndex,
toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

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* \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the
range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array
by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex,
size)\n  sortArray(this, fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param
fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range
(exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are
sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive)
to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sortDescending(fromIndex: Int,
toIndex: Int): Unit {\n  sort(fromIndex, toIndex)\n  reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of
the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
(exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n  sort(fromIndex, toIndex)\n
reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The
elements are sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the
range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n  sort(fromIndex, toIndex)\n  reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
(exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n  sort(fromIndex, toIndex)\n  reverse(fromIndex, toIndex)\n}\n\n/**\n * Returns an
array of type [ByteArray], which is a copy of this array where each element is a signed reinterpretation\n * of the
corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.toByteArray(): ByteArray {\n  return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[IntArray], which is a copy of this array where each element is a signed

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reinterpretation\n * of the corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.toIntArray(): IntArray {\n    return storage.copyOf()\n}\n\n/**\n * Returns an array of type [LongArray],
which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding element of this
array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.toLongArray(): LongArray {\n    return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[ShortArray], which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding
element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.toShortArray(): ShortArray {\n    return storage.copyOf()\n}\n\n/**\n * Returns a *typed* object array
containing all
of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.toTypedArray(): Array<UInt> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a
*typed* object array containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.toTypedArray():
Array<ULong> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array
containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.toTypedArray():
Array<UByte> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array
containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.toTypedArray():
Array<UShort> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns
an array of UByte containing all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Array<out UByte>.toUByteArray():
UByteArray {\n    return UByteArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type
[UByteArray], which is a copy of this array where each element is an unsigned reinterpretation\n * of the
corresponding element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.toUByteArray(): UByteArray {\n    return UByteArray(this.copyOf())\n}\n\n/**\n * Returns an array of
UInt containing all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Array<out UInt>.toUIntArray(): UIntArray
{\n    return UIntArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type [UIntArray], which is a
copy of this array where each element is an unsigned reinterpretation\n * of
the corresponding element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.toUIntArray(): UIntArray {\n    return UIntArray(this.copyOf())\n}\n\n/**\n * Returns an array of ULong
containing all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Array<out ULong>.toULongArray():
ULongArray {\n    return ULongArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type
[ULongArray], which is a copy of this array where each element is an unsigned reinterpretation\n * of the
corresponding element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.toULongArray(): ULongArray {\n    return ULongArray(this.copyOf())\n}\n\n/**\n * Returns an array
of UShort containing all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun
Array<out UShort>.toUShortArray(): UShortArray {\n    return UShortArray(size) { index -> this[index]
}\n}\n\n/**\n * Returns an array of type [UShortArray], which is a copy of this array where each element is an
unsigned reinterpretation\n * of the corresponding element of this array.\n */

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.toUShortArray(): UShortArray {\n    return UShortArray(this.copyOf())\n}\n\n/**\n * Returns a [Map]
where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to
each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map
preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UIntArray.associateWith(valueSelector:
(UInt) -> V): Map<UInt, V> {\n    val result = LinkedHashMap<UInt, V>(mapCapacity(size).coerceAtLeast(16))\n
return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the
given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two
elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order
of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
ULongArray.associateWith(valueSelector: (ULong) -> V): Map<ULong, V> {\n    val result =
LinkedHashMap<ULong, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by
the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added
to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UByteArray.associateWith(valueSelector: (UByte) -> V): Map<UByte, V> {\n    val result =
LinkedHashMap<UByte, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one
gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UShortArray.associateWith(valueSelector: (UShort) -> V): Map<UShort, V> {\n    val result =
LinkedHashMap<UShort, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function
applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n *
\n * @sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M :
MutableMap<in UInt, in V>> UIntArray.associateWithTo(destination: M, valueSelector: (UInt) -> V): M {\n    for
(element in this) {\n        destination.put(element,
valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs for each element of the given array,\n * where key is the element itself and value is
provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one
overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M :
MutableMap<in ULong, in V>> ULongArray.associateWithTo(destination: M, valueSelector: (ULong) -> V): M
{\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element
of the given array,\n * where key is the element itself and value is provided by the [valueSelector]

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function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in UByte, in V>> UByteArray.associateWithTo(destination: M, valueSelector: (UByte) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in UShort, in V>> UShortArray.associateWithTo(destination: M, valueSelector: (UShort) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.flatMap(transform: (UInt) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.flatMap(transform: (ULong) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.flatMap(transform: (UByte) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.flatMap(transform: (UShort) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.flatMapIndexed(transform: (index: Int, UInt) -> Iterable<R>): List<R> {\n    return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.flatMapIndexed(transform: (index: Int, ULong) -> Iterable<R>): List<R> {\n    return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.flatMapIndexed(transform: (index: Int, UByte) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.flatMapIndexed(transform: (index: Int, UShort) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapIndexedTo(destination: C, transform: (index: Int, UInt) ->
Iterable<R>): C {\n var index = 0\n for (element in this)
{\n val list = transform(index++, element)\n destination.addAll(list)\n }\n return destination}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each element\n * and its index
in the original array, to the given [destination].\n
*\n@\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapIndexedTo(destination: C, transform: (index: Int, ULong) ->
Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n
destination.addAll(list)\n }\n return destination}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapIndexedTo(destination: C, transform: (index: Int,
UByte) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.flatMapIndexedTo(destination: C, transform: (index: Int, UShort) ->
Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n
destination.addAll(list)\n }\n return destination}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n
*\n@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapTo(destination: C, transform: (UInt) -> Iterable<R>): C {\n for
(element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n
*\n@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapTo(destination: C, transform: (ULong) -> Iterable<R>):
C {\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each

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element of original array, to the given [destination].\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C : MutableCollection<in R>> UByteArray.flatMapTo(destination: C, transform: (UByte) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each element of original array, to the given [destination].\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C : MutableCollection<in R>> UShortArray.flatMapTo(destination: C, transform: (UShort) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
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```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K> UIntArray.groupBy(keySelector: (UInt) -> K): Map<K, List<UInt>> {\n    return groupByTo(LinkedHashMap<K, MutableList<UInt>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
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```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K> ULongArray.groupBy(keySelector: (ULong) -> K): Map<K, List<ULong>> {\n    return groupByTo(LinkedHashMap<K, MutableList<ULong>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
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```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K> UByteArray.groupBy(keySelector: (UByte) -> K): Map<K, List<UByte>> {\n    return groupByTo(LinkedHashMap<K, MutableList<UByte>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K> UShortArray.groupBy(keySelector: (UShort) -> K): Map<K, List<UShort>> {\n    return groupByTo(LinkedHashMap<K, MutableList<UShort>>(), keySelector)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n
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 * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> UIntArray.groupBy(keySelector: (UInt) -> K, valueTransform: (UInt) -> V): Map<K, List<V>> {\n    return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample\n
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samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>\nULongArray.groupBy(keySelector: (ULong) -> K, valueTransform: (ULong) -> V): Map<K, List<V>> {\n    return\n    groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/>\n * Groups values\nreturned by the [valueTransform] function applied to each element of the original array\n * by the key returned by\nthe given [keySelector] function applied to the element\n * and returns a map where each group key is associated\nwith a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys\nproduced from the original array.\n * \n * @sample\nsamples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>\nUByteArray.groupBy(keySelector: (UByte) -> K,\n    valueTransform: (UByte) -> V): Map<K, List<V>> {\n    return groupByTo(LinkedHashMap<K,\nMutableList<V>>(), keySelector, valueTransform)\n}\n\n/>\n * Groups values returned by the [valueTransform]\nfunction applied to each element of the original array\n * by the key returned by the given [keySelector] function\napplied to the element\n * and returns a map where each group key is associated with a list of corresponding\nvalues.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample\nsamples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>\nUShortArray.groupBy(keySelector: (UShort) -> K, valueTransform: (UShort) -> V): Map<K, List<V>> {\n    return\n    groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/>\n * Groups elements\nof the original array by the key returned by the given\n[keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with\na list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample\nsamples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M : MutableMap<in K, MutableList<UInt>>> UIntArray.groupByTo(destination: M, keySelector: (UInt) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) {\n            ArrayList<UInt>()\n        }\n        list.add(element)\n    }\n    return destination\n}\n\n/>\n * Groups elements of the\noriginal array by the key returned by the given [keySelector] function\n * applied to each element and puts to the\n[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The\n[destination] map.\n * \n * @sample\nsamples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M : MutableMap<in K, MutableList<ULong>>> ULongArray.groupByTo(destination: M, keySelector: (ULong) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) {\n            ArrayList<ULong>()\n        }\n        list.add(element)\n    }\n    return destination\n}\n\n/>\n * Groups elements of the\noriginal array by the key returned by the given [keySelector] function\n * applied to each element and puts to the\n[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The\n[destination] map.\n * \n * @sample\nsamples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M : MutableMap<in K, MutableList<UByte>>> UByteArray.groupByTo(destination: M, keySelector: (UByte) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key)\n        {\n            ArrayList<UByte>()\n        }\n        list.add(element)\n    }\n    return destination\n}\n\n/>\n * Groups elements of the\noriginal array by the key returned by the given [keySelector] function\n * applied to each element and puts to the\n[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The\n[destination] map.\n * \n * @sample\nsamples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M : MutableMap<in K, MutableList<UShort>>> UShortArray.groupByTo(destination: M, keySelector: (UShort) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) {\n

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element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.map(transform: (UShort) -> R): List<R> {\n    return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element and its index in the original array.\n * @param [transform] function that takes the index of an element and
the element itself\n * and returns the result of the transform applied to the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.mapIndexed(transform: (index: Int, UInt) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> ULongArray.mapIndexed(transform: (index: Int, ULong) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> UByteArray.mapIndexed(transform: (index: Int, UByte) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.mapIndexed(transform: (index: Int, UShort) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Applies the given [transform] function to each
element and its index in the original array\n * and appends the results to the given [destination].\n * @param
[transform] function that takes the index of an element and the element itself\n * and returns the result of the
transform applied to the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.mapIndexedTo(destination: C, transform: (index: Int, UInt) -> R): C {\n    var
index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n * and appends the
results to the given [destination].\n * @param [transform] function that takes the index of an element and the
element itself\n * and returns the result of the transform applied to the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.mapIndexedTo(destination: C, transform: (index: Int, ULong) -> R): C {\n    var
index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return
destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n
* and appends the results to the given [destination].\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R, C : MutableCollection<in R>> UByteArray.mapIndexedTo(destination: C, transform: (index: Int,
UByte) -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return
destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n
* and appends the results to the given [destination].\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.mapIndexedTo(destination: C, transform: (index: Int, UShort) -> R): C {\n

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var index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return
destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.mapTo(destination: C, transform: (UInt) -> R): C {\n for (item in this)\n
destination.add(transform(item))\n return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.mapTo(destination: C, transform: (ULong) -> R): C {\n for (item in
this)\n destination.add(transform(item))\n return destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R, C : MutableCollection<in R>> UByteArray.mapTo(destination: C, transform: (UByte) -> R): C {\n
for (item in this)\n destination.add(transform(item))\n return destination\n}\n\n/**\n * Applies the given
[transform] function to each element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.mapTo(destination: C, transform: (UShort) -> R): C {\n for (item in
this)\n destination.add(transform(item))\n return destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps
each element of the original array\n * into an [IndexedValue] containing the index of that element and the element
itself.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.withIndex():
Iterable<IndexedValue<UInt>>
{\n return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the
original array\n * into an [IndexedValue] containing the index of that element and the element itself.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.withIndex():
Iterable<IndexedValue<ULong>> {\n return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.withIndex():
Iterable<IndexedValue<UByte>> {\n return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.withIndex():
Iterable<IndexedValue<UShort>>
{\n return IndexingIterable { iterator() }\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n
*\n * @sample samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.all(predicate: (UInt) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.all(predicate: (ULong) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.all(predicate: (UByte) -> Boolean): Boolean {\n for (element in this) if
(!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.all(predicate: (UShort) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample

```

```

samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one element.\n
 * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one
element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one
element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if at least one element matches
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.any(predicate: (UInt) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.any(predicate: (ULong) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.any(predicate: (UByte) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element
matches the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.any(predicate: (UShort) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.count(predicate: (UInt) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.count(predicate: (ULong) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n
    return count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.count(predicate: (UByte) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.count(predicate: (UShort) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Accumulates value starting with [initial] value and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator
value and an element,
and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.fold(initial: R, operation: (acc: R, UInt) -> R): R {\n    var accumulator = initial\n    for (element in this)
accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting

```

with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *\n * Returns the specified [initial] value if the array is empty.\n *\n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nULongArray.fold(initial: R, operation: (acc: R, ULong) -> R): R {\n    var accumulator = initial\n    for (element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.fold(initial: R, operation: (acc: R, UByte) -> R): R {\n    var accumulator = initial\n    for (element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUShortArray.fold(initial: R, operation: (acc: R, UShort) -> R): R {\n    var accumulator = initial\n    for (element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUIntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this) accumulator = operation(index++, accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nULongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this) accumulator = operation(index++, accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this) accumulator = operation(index++, accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```



```

UShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): R {
    var index = 0
    var accumulator = initial
    for (element in this) accumulator = operation(index++, accumulator, element)
    return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from right to left to each element and current accumulator value.
 * Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
UIntArray.foldRight(initial: R, operation: (UInt, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from right to left to each element and current accumulator value.
 * Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
ULongArray.foldRight(initial: R, operation: (ULong, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from right to left to each element and current accumulator value.
 * Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
UByteArray.foldRight(initial: R, operation: (UByte, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
UShortArray.foldRight(initial: R, operation: (UShort, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
UIntArray.foldRightIndexed(initial: R, operation: (index: Int, UInt, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
ULongArray.foldRightIndexed(initial: R, operation: (index: Int, ULong, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

/** Accumulates

```

value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.foldRightIndexed(initial: R, operation: (index: Int, UByte, acc: R) -> R): R {\n    var index =\n    lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index),\n        accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]\n * value and applying [operation] from right to left\n * to each element with its index in the original array and current\n * accumulator value.\n
```

```
*\n * Returns the specified [initial] value if the array is empty.\n * @param [operation] function that takes the\n * index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator\n * value.\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\n<R> UShortArray.foldRightIndexed(initial: R, operation: (index: Int, UShort, acc: R) -> R): R {\n    var index =\n    lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index),\n        accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Performs the given [action] on each\n * element.\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun UIntArray.forEach(action: (UInt) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun ULongArray.forEach(action: (ULong) -> Unit): Unit {\n    for (element in this)\n    action(element)\n}\n\n/**\n * Performs the given [action] on each element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.forEach(action: (UByte) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.forEach(action: (UShort) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element.\n * @param [action]\n * function that takes the index of an element and the element itself\n * and performs the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun UIntArray.forEachIndexed(action: (index: Int, UInt) -> Unit): Unit {\n    var index = 0\n    for (item in this)\n    action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with\n * the element.\n * @param [action] function that takes the index of an element and the element itself\n * and performs\n * the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.forEachIndexed(action: (index: Int, ULong) -> Unit): Unit {\n    var index = 0\n    for (item in this)\n    action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with\n * the element.\n * @param [action] function that takes the index of an element and the element itself\n * and performs\n * the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.forEachIndexed(action: (index: Int,\n    UByte) -> Unit): Unit {\n    var index = 0\n    for (item in this) action(index++, item)\n}\n\n/**\n * Performs the\n * given [action] on each element, providing sequential index with the element.\n * @param [action] function that\n * takes the index of an element and the element itself\n * and performs the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.forEachIndexed(action: (index: Int, UShort) -> Unit): Unit {\n    var index = 0\n    for (item in this)\n    action(index++, item)\n}\n\n/**\n * Returns the largest element.\n * @throws NoSuchElementException if the\n * array is empty.\n*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
```

```

U()\n@ExperimentalUnsignedTypes\n@Suppress(\"CONFLICTING_OVERLOADS\")\npublic fun
UIntArray.max(): UInt {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (max < e) max =
e\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n @SinceKotlin(\"1.7\")\n @kotlin.jvm.JvmName(\"maxOrThrow-
U()\n@ExperimentalUnsignedTypes\n@Suppress(\"CONFLICTING_OVERLOADS\")\npublic fun
ULongArray.max(): ULong {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i
in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the
largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n @SinceKotlin(\"1.7\")\n @kotlin.jvm.JvmName(\"maxOrThrow-
U()\n@ExperimentalUnsignedTypes\n@Suppress(\"CONFLICTING_OVERLOADS\")\npublic fun
UByteArray.max(): UByte {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest
element.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n @SinceKotlin(\"1.7\")\n @kotlin.jvm.JvmName(\"maxOrThrow-
U()\n@ExperimentalUnsignedTypes\n@Suppress(\"CONFLICTING_OVERLOADS\")\npublic fun
UShortArray.max(): UShort {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i
in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*\n @SinceKotlin(\"1.7\")\n @kotlin.jvm.JvmName(\"maxByOrThrow-
U()\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress(\"CONFLICTING_OVERLOADS
\")\npublic inline fun <R : Comparable<R>> UIntArray.maxBy(selector: (UInt) -> R): UInt {\n    if (isEmpty())
throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex
== 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n
val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return
maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n @SinceKotlin(\"1.7\")\n @kotlin.jvm.JvmName(\"maxByOrThrow-
U()\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress(\"CONFLICTING_OVERLOADS
\")\npublic inline fun <R : Comparable<R>> ULongArray.maxBy(selector: (ULong) -> R): ULong {\n    if
(isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if
(lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e =
this[i]\n
        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return
maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n @SinceKotlin(\"1.7\")\n @kotlin.jvm.JvmName(\"maxByOrThrow-
U()\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress(\"CONFLICTING_OVERLOADS
\")\npublic inline fun <R : Comparable<R>> UByteArray.maxBy(selector: (UByte) -> R): UByte {\n    if
(isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if
(lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e =
this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return
maxElem\n}\n\n/**\n

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* Returns the first element yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n@\n@SinceKotlin("1.7")\n@\n@kotlin.jvm.JvmName("maxByOrThrow
U")\n@\n@ExperimentalUnsignedTypes\n@\n@kotlin.internal.InlineOnly\n@\n@Suppress("CONFLICTING_OVERLOADS
")\n\npublic inline fun <R : Comparable<R>> UShortArray.maxBy(selector: (UShort) -> R): UShort {\n if
(isEmpty()) throw NoSuchElementException()\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or
`null` if there are no elements.\n
*\n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@\n@SinceKotlin("1.4")\n@\n@ExperimentalUnsignedTypes\n@\n@kotlin.internal.InlineOnly\n\npublic inline fun <R :
Comparable<R>> UIntArray.maxByOrNull(selector: (UInt) -> R): UInt? {\n if (isEmpty()) return null\n var
maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@\n@SinceKotlin("1.4")\n@\n@ExperimentalUnsignedTypes\n@\n@kotlin.internal.InlineOnly\n\npublic inline fun <R :
Comparable<R>> ULongArray.maxByOrNull(selector: (ULong) -> R): ULong?
{\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0)
return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v
= selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return
maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are
no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@\n@SinceKotlin("1.4")\n@\n@ExperimentalUnsignedTypes\n@\n@kotlin.internal.InlineOnly\n\npublic inline fun <R :
Comparable<R>> UByteArray.maxByOrNull(selector: (UByte) -> R): UByte? {\n if (isEmpty()) return null\n
var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val
v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return
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no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@\n@SinceKotlin("1.4")\n@\n@ExperimentalUnsignedTypes\n@\n@kotlin.internal.InlineOnly\n\npublic inline fun <R :
Comparable<R>> UShortArray.maxByOrNull(selector: (UShort) -> R): UShort? {\n if (isEmpty()) return null\n
var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each
element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@\n@SinceKotlin("1.4")\n@\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@\n@OverloadResolution
ByLambdaReturnType\n@\n@ExperimentalUnsignedTypes\n@\n@kotlin.internal.InlineOnly\n\npublic inline fun
UIntArray.maxOf(selector: (UInt) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOf(selector: (ULong) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
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UByteArray.maxOf(selector: (UByte) -> Double): Double {\n if
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val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOf(selector: (UShort) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest
value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n *
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOf(selector: (UInt) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n *
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.maxOf(selector: (ULong) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
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inline fun UByteArray.maxOf(selector: (UByte) -> Float): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n *
If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n

```

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOf(selector: (UShort) -> Float): Float {\n  if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n
    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UIntArray.maxOf(selector: (UInt) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> ULongArray.maxOf(selector: (ULong) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.maxOf(selector: (UShort) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced
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values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOfOrNull(selector: (UInt) -> Double): Double? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n
  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOfOrNull(selector: (ULong) -> Double): Double? {\n  if (isEmpty()) return null\n
var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue =
maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
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UByteArray.maxOfOrNull(selector: (UByte) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue
= selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOfOrNull(selector: (UShort) -> Double): Double? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in
the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOfOrNull(selector: (UInt) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
 }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOfOrNull(selector: (ULong) -> Float): Float? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
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UByteArray.maxOfOrNull(selector: (UByte) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOfOrNull(selector: (UShort) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
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applied to each element in the array or `null` if there are no elements.\n

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UIntArray.maxOfOrNull(selector: (UInt) -> R): R? {\n if (isEmpty()) return
null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if


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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.maxOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
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(isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
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UByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the
provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or
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UShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxOrNull(): UInt? {\n    if
(isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no
elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.maxOrNull():
ULong? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n
if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no
elements.\n
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UByte? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n
if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.maxOrNull(): UShort? {\n    if
(isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n

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    val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.maxWith(comparator: Comparator<in UInt>): UInt {\n    if (isEmpty()) throw
NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.maxWith(comparator:
Comparator<in ULong>): ULong {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n
for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n
return
max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n *
@throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.maxWith(comparator: Comparator<in UByte>): UByte {\n    if (isEmpty()) throw
NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic
fun UShortArray.maxWith(comparator: Comparator<in UShort>): UShort {\n    if (isEmpty()) throw
NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxWithOrNull(comparator:
Comparator<in UInt>): UInt? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n
val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are
no elements.\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.maxWithOrNull(comparator: Comparator<in ULong>): ULong? {\n    if (isEmpty()) return null\n
var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max =
e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.maxWithOrNull(comparator:
Comparator<in UByte>): UByte? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n
val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.maxWithOrNull(comparator: Comparator<in UShort>): UShort? {\n    if (isEmpty()) return null\n
var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max =
e\n    }\n    return max\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException if
the array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.min(): UInt {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest

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element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.min(): ULong
{\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e
= this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.min(): UByte {\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UShortArray.min(): UShort {\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n
for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns
the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UIntArray.minBy(selector: (UInt) -> R): UInt {\n if (isEmpty())
throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex ==
0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val
v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return
minElem\n}\n\n/**\n * Returns the
first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> ULongArray.minBy(selector: (ULong) -> R): ULong {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n
*\n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UByteArray.minBy(selector: (UByte) -> R): UByte {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n
*\n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic

```

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inline fun <R : Comparable<R>> UShortArray.minBy(selector: (UShort) -> R): UShort {
    if (isEmpty()) throw NoSuchElementException()
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there
 * are no elements.
 */
@sample
samples.collections.Collections.Aggregates.minByOrNull

*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <R :
Comparable<R>> UIntArray.minByOrNull(selector: (UInt) -> R): UInt? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first
 * element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample
samples.collections.Collections.Aggregates.minByOrNull

*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <R :
Comparable<R>> ULongArray.minByOrNull(selector: (ULong) -> R): ULong? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first
 * element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample
samples.collections.Collections.Aggregates.minByOrNull

*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <R :
Comparable<R>> UByteArray.minByOrNull(selector: (UByte) -> R): UByte? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first
 * element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample
samples.collections.Collections.Aggregates.minByOrNull

*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <R :
Comparable<R>> UShortArray.minByOrNull(selector: (UShort) -> R): UShort? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the smallest
 * value among all values produced by [selector] function
 * applied to each element in the array.
 */
@sample
samples.collections.Collections.Aggregates.minByOrNull

*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic
inline fun UIntArray.minOf(selector: (UInt) -> Double): Double {
    if (isEmpty()) throw
    NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

/**
 * Returns the smallest
 * value among all values produced by [selector] function
 * applied to each element in the array.
 */
@sample
samples.collections.Collections.Aggregates.minOf

*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
ULongArray.minOf(selector: (ULong) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

/**
 * Returns the smallest
 * value among all values produced by [selector] function
 * applied to each element in the array.
 */
@sample
samples.collections.Collections.Aggregates.minOf

```

```

= selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue = minOf(minValue,
v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`,
the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.minOf(selector: (UByte) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by
[selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.minOf(selector: (UShort) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by
[selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.minOf(selector: (UInt) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by
[selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.minOf(selector:
(ULong) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue = minOf(minValue, v)\n
}\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`,
the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.minOf(selector: (UByte) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by
[selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.minOf(selector: (UShort) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by
[selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the

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array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UIntArray.minOf(selector: (UInt) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value among all values produced by [selector] function\n* applied to each element in the\narray.\n* \n* @throws NoSuchElementException if the array is empty.\n
```

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> ULongArray.minOf(selector: (ULong) -> R): R {\n    if (isEmpty())\n    throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value among all values produced by [selector] function\n* applied to each element in the\narray.\n* \n* @throws NoSuchElementException if the array is empty.\n
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UByteArray.minOf(selector: (UByte) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value among all values\nproduced by [selector] function\n* applied to each element in the array.\n* \n* @throws\nNoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UShortArray.minOf(selector: (UShort) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value among all values produced by [selector] function\n* applied to each element in the array\nor `null` if there are no elements.\n* \n* If any of values produced by [selector] function is `NaN`, the returned\nresult is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun UIntArray.minOfOrNull(selector: (UInt) -> Double): Double? {\n    if (isEmpty()) return null\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue =\n        minOf(minValue, v)\n    }\n    return minValue\n}\n\nReturns the smallest value among all values produced\nby [selector] function\n* applied to each element in the array or `null` if there are no elements.\n* \n* If any of\nvalues produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.minOfOrNull(selector: (ULong) -> Double): Double? {\n    if (isEmpty()) return null\n    var minValue\n    = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n    minValue\n}\n\nReturns the smallest value among all values produced by [selector] function\n* applied to\neach element in the array or `null` if there are no elements.\n* \n* If any of values produced by [selector] function\nis `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```



```

ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.minOfOrNull(selector: (ULong) -> R): R? {\n  if (isEmpty()) return null\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
    minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each
element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.minOfOrNull(selector: (UByte) -> R): R? {\n  if (isEmpty()) return null\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n
    minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.minOfOrNull(selector: (UShort)
-> R): R? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v
= selector(this[i])\n    if (minValue > v) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.minOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.minOfWith(comparator: Comparator<in R>, selector: (ULong) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.minOfWith(comparator: Comparator<in R>, selector: (UByte) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.minOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n  if
(isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n
}

```



```

return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UIntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UInt) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n ULongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.minOrNull(): UInt? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.minOrNull(): ULong? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.minOrNull(): UByte? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.minOrNull(): UShort? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator].\n * @throws NoSuchElementException if the array is empty.\n\n *\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow-")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic

```



```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n
 * @sample samples.collections.Collections.Aggregates.none\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns `true` if no elements match
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.none(predicate: (UInt) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.none(predicate: (ULong) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n
 * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.none(predicate: (UByte) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.none(predicate: (UShort) -> Boolean): Boolean {\n    for (element in this) if (predicate(element))
return false\n    return true\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.onEach(action: (UInt) -> Unit): UIntArray {\n    return apply { for (element
in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.onEach(action: (ULong) -> Unit): ULongArray {\n    return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.onEach(action: (UByte) -> Unit): UByteArray {\n    return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.onEach(action: (UShort) -> Unit): UShortArray {\n    return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element,\n * and returns the
array itself afterwards.\n * @param [action] function that takes the index of an element and the element itself\n *
and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.onEachIndexed(action: (index: Int, UInt) -> Unit): UIntArray {\n    return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.onEachIndexed(action: (index: Int, ULong) -> Unit): ULongArray {\n    return apply {
forEachIndexed(action)
}\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element,\n * and
returns the array itself afterwards.\n * @param [action] function that takes the index of an element and the element
itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

ByteArray.forEachIndexed(action: (index: Int, UByte) -> Unit): UByteArray {
    return apply {
        forEachIndexed(action)
    }
}

/** Performs the given [action] on each element, providing sequential index
with the element, and returns the array itself afterwards.
@param [action] function that takes the index of an
element and the element itself and performs the action on the element.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.forEachIndexed(action: (index: Int, UShort) -> Unit): UShortArray {
    return apply {
        forEachIndexed(action)
    }
}

/** Accumulates value starting with the first element and applying [operation] from left to right
to current accumulator value and each element.
Throws an exception if this array is empty. If the array can be
empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function that takes current accumulator value and an element and calculates the next
accumulator value.
@sample samples.collections.Collections.Aggregates.reduce

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.reduce(operation: (acc: UInt, UInt) -> UInt): UInt {
    if (isEmpty())
        throw
        UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
        1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/** Accumulates value starting with the first element and applying [operation] from left to right
to current accumulator value and each element.
Throws an exception if this array is empty. If the array can be empty
in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function that takes current accumulator value and an element and calculates the next
accumulator value.
@sample samples.collections.Collections.Aggregates.reduce

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.reduce(operation: (acc: ULong, ULong) -> ULong): ULong {
    if (isEmpty())
        throw
        UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
        1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/** Accumulates value starting
with the first element and applying [operation] from left to right
to current accumulator value and each
element.
Throws an exception if this array is empty. If the array can be empty in an expected way,
please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function
that takes current accumulator value and an element and calculates the next accumulator value.
@sample samples.collections.Collections.Aggregates.reduce

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UByteArray.reduce(operation: (acc: UByte, UByte) -> UByte): UByte {
    if (isEmpty())
        throw
        UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
        1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/** Accumulates value starting with the first element
and applying [operation] from left to right
to current accumulator value and each element.
Throws an
exception if this array is empty. If the array can be empty in an expected way,
please use [reduceOrNull] instead.
It returns `null` when its receiver is empty.
@param [operation] function that takes current accumulator
value and an element and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduce

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.reduce(operation: (acc: UShort, UShort) -> UShort): UShort {
    if (isEmpty())
        throw
        UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
        1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/** Accumulates value starting with the first element and applying [operation]
from left to right
to current accumulator value and each element with its index in the original array.
Throws an exception if this array is empty. If the array can be empty in an expected way,
please use

```

```

[reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.reduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt {
    if (isEmpty()) throw
    UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
    1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return
    accumulator
}

 * Accumulates value starting with the first element and applying [operation] from left to right to current
accumulator value and each element with its index in the original array.
 * Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null`
when its receiver is empty.
 * @param [operation] function that takes the index of an element, current
accumulator value and the element itself, and calculates the next accumulator value.
 * @sample
samples.collections.Collections.Aggregates.reduce
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.reduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong {
    if (isEmpty())
    throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for
    (index in 1..lastIndex) {
        accumulator = operation(index,
        accumulator, this[index])
    }
    return accumulator
}

 * Accumulates value starting with the first
element and applying [operation] from left to right to current accumulator value and each element with its index
in the original array.
 * Throws an exception if this array is empty. If the array can be empty in an expected
way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
 * @param
[operation] function that takes the index of an element, current accumulator value and the element itself, and
calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UByteArray.reduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte {
    if (isEmpty())
    throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator
    = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return accumulator
}

 * Accumulates value starting with the first element and applying [operation] from
left to right to current accumulator value and each element with its index in the original array.
 * Throws
an exception if this array is empty. If the array can be empty in an expected way, please use
[reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function
that takes the index of an element, current accumulator value and the element itself, and calculates the next
accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.reduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort {
    if (isEmpty())
    throw
    UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
    1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return
    accumulator
}

 * Accumulates value starting with the first element and applying [operation] from left to
right to current accumulator value and each element with its index in the original array.
 * Returns `null` if
the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator
value and the element itself, and calculates the next accumulator value.
 * @sample
samples.collections.Collections.Aggregates.reduceOrNull
*/
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.reduceIndexedOrNull(operation: (index: Int, acc: UInt, UInt) -> UInt?): UInt? {
    if (isEmpty())
    return null
    var accumulator = this[0]
    for (index in 1..lastIndex)

```

```

    {
        accumulator = operation(index, accumulator, this[index])
    }
    return accumulator
}

Accumulates value starting with the first element and applying [operation] from left to right
to current accumulator value and each element with its index in the original array.
Returns `null` if the array is empty.
@param [operation] function that takes the index of an element, current accumulator value and the
element itself, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceOrNull

*
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.reduceIndexedOrNull(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong? {
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator =
            operation(index, accumulator, this[index])
    }
    return accumulator
}

* Accumulates value starting with the first element and applying [operation] from left to right
to current accumulator value and each element with its index in the original array.
Returns `null` if the array is empty.
@param [operation] function that takes the index of an element, current accumulator value and the
element itself, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceOrNull

*
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UByteArray.reduceIndexedOrNull(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte? {
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator =
            operation(index, accumulator, this[index])
    }
    return accumulator
}

* Accumulates value starting
with the first element and applying [operation] from left to right
to
current accumulator value and each element with its index in the original array.
Returns `null` if the array is
empty.
@param [operation] function that takes the index of an element, current accumulator value and the
element itself, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceOrNull

*
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.reduceIndexedOrNull(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort? {
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator =
            operation(index, accumulator, this[index])
    }
    return accumulator
}

* Accumulates value starting
with the first element and applying [operation] from left to right
to current accumulator value and each
element.
Returns `null` if the array is empty.
@param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.
@sample
samples.collections.Collections.Aggregates.reduceOrNull

*
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun
UIntArray.reduceOrNull(operation: (acc: UInt, UInt) -> UInt): UInt?
{
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator =
            operation(accumulator, this[index])
    }
    return accumulator
}

* Accumulates value
starting with the first element and applying [operation] from left to right
to current accumulator value and each
element.
Returns `null` if the array is empty.
@param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceOrNull

*
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun
ULongArray.reduceOrNull(operation: (acc: ULong, ULong) ->
ULong): ULong? {
    if (isEmpty())
        return null
    var accumulator = this[0]
    for (index in 1..lastIndex)
    {
        accumulator =
            operation(accumulator, this[index])
    }
    return accumulator
}

* Accumulates
value starting with the first element and applying [operation] from left to right
to current accumulator value and
each element.
Returns `null` if the array is empty.
@param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceOrNull

```

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.reduceOrNull(operation: (acc: UByte, UByte) -> UByte): UByte? {\n  if (isEmpty())\n  return null\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator =
operation(accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceOrNull(operation: (acc: UShort, UShort) ->
UShort): UShort? {\n  if (isEmpty())\n  return null\n  var accumulator
= this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(accumulator, this[index])\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRight(operation: (UInt, acc: UInt) -> UInt): UInt {\n  var index = lastIndex\n  if (index < 0)
throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator
= get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceRight(operation: (ULong, acc: ULong) -> ULong): ULong {\n  var index = lastIndex\n  if
(index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator
= get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceRight(operation: (UByte, acc: UByte) -> UByte): UByte {\n  var index = lastIndex\n  if (index
< 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n
}\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample

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samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceRight(operation: (UShort, acc: UShort) -> UShort): UShort {\n  var index = lastIndex\n  if
(index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n
  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--),
accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element with its index in the original array and current
accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected
way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRightIndexed(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt {\n  var index = lastIndex\n
  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n
  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun ULongArray.reduceRightIndexed(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong {\n  var
index = lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n
  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an
expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n *
\n * @param [operation] function that takes the index of an element, the element itself and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceRightIndexed(operation: (index: Int, UByte, acc: UByte) -> UByte): UByte {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an
expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n *
\n * @param [operation] function that takes the index of an element, the element itself
and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceRightIndexed(operation: (index: Int, UShort, acc: UShort) -> UShort): UShort {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),

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accumulator)\n    --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that
takes the index of an element, the element itself and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRightIndexedOrNull(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt? {\n    var index =
lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n
accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with
its index in the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceRightIndexedOrNull(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong? {\n    var
index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n
accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with
its index in the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.reduceRightIndexedOrNull(operation: (index: Int, UByte, acc: UByte) -> UByte): UByte?
{\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0)
{\n        accumulator = operation(index, get(index), accumulator)\n            --index\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns `null`
if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.reduceRightIndexedOrNull(operation: (index: Int, UShort, acc: UShort) -> UShort):
UShort? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index
>= 0) {\n        accumulator = operation(index, get(index), accumulator)\n            --index\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceRightOrNull(operation: (UInt, acc: UInt) -> UInt):
UInt? {\n
    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and

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current accumulator value, and calculates the next accumulator value. @sample

```

samples.collections.Collections.Aggregates.reduceRightOrNull
*/@SinceKotlin("1.4")@ExperimentalUnsignedTypes@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun ULongArray.reduceRightOrNull(operation: (ULong, acc: ULong) ->
ULong): ULong? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator
        = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value. Returns `null` if the array is empty. @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value. @sample

```

samples.collections.Collections.Aggregates.reduceRightOrNull
*/@SinceKotlin("1.4")@ExperimentalUnsignedTypes@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun UByteArray.reduceRightOrNull(operation: (UByte, acc: UByte) ->
UByte): UByte? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value. Returns `null` if the array is empty. @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value. @sample

```

samples.collections.Collections.Aggregates.reduceRightOrNull
*/@SinceKotlin("1.4")@ExperimentalUnsignedTypes@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun UShortArray.reduceRightOrNull(operation: (UShort, acc: UShort) ->
UShort): UShort? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample

```

samples.collections.Collections.Aggregates.runningFold
*/@SinceKotlin("1.4")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
UIntArray.runningFold(initial: R, operation: (acc: R, UInt) -> R): List<R> {
    if (isEmpty()) return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    var accumulator = initial
    for (element in this) {
        accumulator = operation(accumulator, element)
        result.add(accumulator)
    }
    return result
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample

```

samples.collections.Collections.Aggregates.runningFold
*/@SinceKotlin("1.4")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
ULongArray.runningFold(initial: R, operation: (acc: R, ULong) -> R): List<R> {
    if (isEmpty()) return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    var accumulator = initial
    for (element in this) {
        accumulator = operation(accumulator, element)
        result.add(accumulator)
    }
    return result
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @sample

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\n * @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.runningFold(initial: R, operation: (acc: R, UByte) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n *
Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.runningFold(initial: R, operation: (acc: R, UShort) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n
for (index in indices) {\n accumulator = operation(index, accumulator,
this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): List<R> {\n if
(isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size +
1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator =
operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n *
Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.runningFoldIndexed(initial: R, operation:
(index: Int, acc: R, UByte) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n

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accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n } \n return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): List<R>
{\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var
accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n * \n
* @sample samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.runningReduce(operation: (acc: UInt, UInt) -> UInt): List<UInt> {\n if (isEmpty()) return
emptyList()\n var accumulator = this[0]\n val result = ArrayList<UInt>(size).apply { add(accumulator) }\n for
(index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n
}\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element,
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduce(operation: (acc: ULong, ULong) -> ULong): List<ULong> {\n if (isEmpty()) return
emptyList()\n var accumulator = this[0]\n val result = ArrayList<ULong>(size).apply { add(accumulator) }\n
for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n
}\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
* @sample samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduce(operation: (acc: UByte, UByte) -> UByte): List<UByte> {\n if (isEmpty()) return
emptyList()\n var accumulator = this[0]\n val result = ArrayList<UByte>(size).apply { add(accumulator) }\n
for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n
}\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample

```

```

samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduce(operation: (acc: UShort, UShort) -> UShort): List<UShort> {\n  if (isEmpty()) return
emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UShort>(size).apply { add(accumulator) }\n
for (index in 1 until size) {\n    accumulator = operation(accumulator, this[index])\n    result.add(accumulator)\n
  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.runningReduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): List<UInt> {\n  if (isEmpty())
return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UInt>(size).apply { add(accumulator)
}\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): List<ULong> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<ULong>(size).apply {
add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n
  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that
takes the index of an element, current accumulator value\n * and the element itself, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): List<UByte> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UByte>(size).apply
{ add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator,
this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
array and current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value
passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting
list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduceIndexed(operation: (index: Int,

```

```

acc: UShort, UShort) -> UShort): List<UShort> {\n  if (isEmpty()) return emptyList()\n  var accumulator =
this[0]\n  val result = ArrayList<UShort>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n
accumulator = operation(index, accumulator, this[index])\n  result.add(accumulator)\n  }\n  return
result}\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc`
value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic
inline fun <R> UIntArray.scan(initial: R, operation: (acc: R, UInt) -> R): List<R> {\n  return runningFold(initial,
operation)\n}\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.scan(initial: R, operation: (acc: R, ULong) -> R):
List<R> {\n  return runningFold(initial, operation)\n}\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator
value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.scan(initial: R, operation: (acc: R, UByte) -> R):
List<R> {\n  return runningFold(initial, operation)\n}\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator
value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.scan(initial: R, operation: (acc: R, UShort) -> R):
List<R> {\n  return runningFold(initial, operation)\n}\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n
* \n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.scanIndexed(initial: R, operation: (index: Int, acc: R,
UInt) -> R): List<R> {\n  return runningFoldIndexed(initial, operation)\n}\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed
to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n *
\n * \n *

```

@param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.scanIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
  
```

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.scanIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
  
```

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.scanIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n * @DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumBy(selector: (UInt) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n * @DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumBy(selector: (ULong) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n * @DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumBy(selector: (UByte) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n * @DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumBy(selector: (UShort) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n * @DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
  
```

```

UIntArray.sumByDouble(selector: (UInt) -> Double): Double {
    var sum: Double = 0.0
    for (element in this)
        sum += selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function applied to each
element in the array.
*/
@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince =
"1.5")
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.sumByDouble(selector: (ULong) -> Double): Double {
    var sum: Double = 0.0
    for (element in
this)
        sum += selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function applied to each element in the array.
*/
@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince =
"1.5")
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UByteArray.sumByDouble(selector: (UByte) -> Double): Double {
    var sum: Double = 0.0
    for (element in
this)
        sum += selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function applied to each element in the array.
*/
@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))
@DeprecatedSinceKotlin(warningSince =
"1.5")
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.sumByDouble(selector: (UShort) -> Double): Double {
    var sum: Double = 0.0
    for (element in
this)
        sum += selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function applied to each element in the array.
*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@Suppress("INAPPLICABLE_JVM_NAME")
@kotlin.jvm.JvmName("sumOfDouble")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UIntArray.sumOf(selector:
(UInt) -> Double): Double {
    var sum: Double = 0.toDouble()
    for (element in this)
        sum +=
selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function applied to each
element in the array.
*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@Suppress("INAPPLICABLE_JVM_NAME")
@kotlin.jvm.JvmName("sumOfDouble")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun ULongArray.sumOf(selector:
(ULong) -> Double): Double {
    var sum: Double = 0.toDouble()
    for (element in this)
        sum +=
selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function
applied to each element in the array.
*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@Suppress("INAPPLICABLE_JVM_NAME")
@kotlin.jvm.JvmName("sumOfDouble")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UByteArray.sumOf(selector: (UByte) -> Double): Double {
    var sum: Double = 0.toDouble()
    for (element in
this)
        sum += selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function applied to each element in the array.
*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@Suppress("INAPPLICABLE_JVM_NAME")
@kotlin.jvm.JvmName("sumOfDouble")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.sumOf(selector:
(UShort) -> Double): Double {
    var sum: Double = 0.toDouble()
    for (element in this)
        sum +=
selector(element)
    return sum
}

/** Returns the sum of all values produced by
[selector] function
applied to each element in the array.
*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@Suppress("INAPPLICABLE_JVM_NAME")
@kotlin.jvm.JvmName("sumOfInt")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public

```



```

inline fun UIntArray.sumOf(selector: (UInt) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]\n function applied to each element in the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:\n(ULong) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in\n the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n\ninline fun UByteArray.sumOf(selector: (UByte) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this)\n {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:\n(UShort) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector: (UInt)\n-> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in\n the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:\n(ULong) -> Long): Long {\n  var\n\n  sum: Long = 0.toLong()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:\n(UByte) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n    sum +=\n\n    selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\n applied to each element in the array.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n\ninline fun UShortArray.sumOf(selector: (UShort) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for\n (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values\n produced by [selector] function applied to each element in the array.\n\n*/\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline

```

```

Only\npublic inline fun UIntArray.sumOf(selector: (UInt) -> UInt): UInt {\n  var sum: UInt = 0.toUInt()\n  for
(element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic
inline fun ULongArray.sumOf(selector: (ULong) -> UInt): UInt {\n  var sum: UInt = 0.toUInt()\n  for (element in
this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic inline fun UByteArray.sumOf(selector: (UByte) -> UInt): UInt {\n  var sum: UInt = 0.toUInt()\n
  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all
values produced by [selector] function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic inline fun UShortArray.sumOf(selector: (UShort) -> UInt): UInt {\n  var sum: UInt = 0.toUInt()\n
for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all
values produced by [selector] function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic
inline fun UIntArray.sumOf(selector: (UInt) -> ULong): ULong {\n  var sum: ULong = 0.toULong()\n  for
(element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic inline fun ULongArray.sumOf(selector: (ULong) -> ULong): ULong {\n  var sum: ULong =
0.toULong()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns
the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic inline fun UByteArray.sumOf(selector: (UByte) -> ULong): ULong {\n  var sum: ULong =
0.toULong()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns
the sum of all values produced by [selector] function applied to each element in the array.\n
*\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic inline
fun UShortArray.sumOf(selector: (UShort) -> ULong): ULong {\n  var sum: ULong = 0.toULong()\n  for
(element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns a list of pairs built

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from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UIntArray.zip(other: Array<out R>): List<Pair<UInt, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
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```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other: Array<out R>): List<Pair<ULong, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other: Array<out R>): List<Pair<UByte, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other: Array<out R>): List<Pair<UShort, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
```

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V> UIntArray.zip(other: Array<out R>, transform: (a: UInt, b: R) -> V): List<V> {\n    val size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V> ULongArray.zip(other: Array<out R>, transform: (a: ULong, b: R) -> V): List<V> {\n    val size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V> UByteArray.zip(other: Array<out R>, transform: (a: UByte, b: R) -> V): List<V> {\n    val size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V> UShortArray.zip(other: Array<out R>, transform: (a: UShort, b: R) -> V): List<V> {\n    val size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
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*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UIntArray.zip(other:
Iterable<R>): List<Pair<UInt, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:
Iterable<R>): List<Pair<ULong, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other:
Iterable<R>):
List<Pair<UByte, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the
elements of `this` collection and [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:
Iterable<R>): List<Pair<UShort, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and the [other] collection with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n *
\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UIntArray.zip(other:
Iterable<R>, transform: (a: UInt, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n
if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
ULongArray.zip(other: Iterable<R>, transform: (a: ULong, b: R) -> V): List<V> {\n    val arraySize = size\n    val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in
other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UByteArray.zip(other: Iterable<R>, transform: (a: UByte, b: R) -> V): List<V> {\n    val arraySize = size\n    val list
= ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n
if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and
the [other] collection with the same index\n * using the provided [transform] function applied to each pair of
elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UShortArray.zip(other: Iterable<R>, transform: (a: UShort, b: R) -> V): List<V> {\n    val arraySize = size\n    val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other)
{\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
infix fun UIntArray.zip(other: UIntArray): List<Pair<UInt, UInt>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun ULongArray.zip(other: ULongArray):
List<Pair<ULong, ULong>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UByteArray.zip(other: UByteArray):
List<Pair<UByte, UByte>> {\n    return zip(other) { t1,
t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with
the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UShortArray.zip(other: UShortArray):
List<Pair<UShort, UShort>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built
from the elements of `this` array and the [other] array with the same index\n * using the provided [transform]
function applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UIntArray.zip(other: UIntArray, transform: (a: UInt, b: UInt) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
}\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
ULongArray.zip(other: ULongArray, transform: (a: ULong, b: ULong) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
}\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
array.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UByteArray.zip(other: UByteArray, transform: (a: UByte, b: UByte) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
}\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <V> UShortArray.zip(other: UShortArray, transform: (a: UShort, b: UShort) -> V): List<V> {\n    val
size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedT
ypes::class)\npublic fun Array<out UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum
+= element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned

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Types::class)\npublic fun Array<out ULong>.sum(): ULong {\n    var sum: ULong = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Array<out UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Array<out UShort>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sum(): UInt {\n    return storage.sum().toUInt()\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sum(): ULong {\n    return storage.sum().toULong()\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sum(): UInt {\n    return sumOf { it.toUInt() }\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sum(): UInt {\n    return sumOf { it.toUInt() }\n}\n\n"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UCollectionsKt")\n\npackage kotlin.collections\n\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns an array of UByte containing all of the elements of this collection.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UByte>.toUByteArray(): UByteArray {\n    val result = UByteArray(size)\n    var index = 0\n    for (element in this) {\n        result[index++] = element\n    }\n    return result\n}\n\n/**\n * Returns an array of UInt containing all of the elements of this collection.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UInt>.toUIntArray(): UIntArray {\n    val result = UIntArray(size)\n    var index = 0\n    for (element in this) {\n        result[index++] = element\n    }\n    return result\n}\n\n/**\n * Returns an array of ULong containing all of the elements of this collection.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<ULong>.toULongArray(): ULongArray {\n    val result = ULongArray(size)\n    var index = 0\n    for (element in this) {\n        result[index++] = element\n    }\n    return result\n}\n\n/**\n * Returns an array of UShort containing all of the elements of this collection.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UShort>.toUShortArray(): UShortArray {\n    val result = UShortArray(size)\n    var index = 0\n    for (element in this) {\n        result[index++] = element\n    }\n    return result\n}\n\n/**\n * Returns the sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned

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Types::class)\npublic fun Iterable<UShort>.sum(): UInt {\n    var sum: UInt = 0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```
*\n*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UComparisonsKt")\n\npackage kotlin.comparisons\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n * Returns the greater of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UInt, b: UInt): UInt {\n    return if (a >= b) a else b\n}\n\n * Returns the greater of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: ULong, b: ULong): ULong {\n    return if (a >= b) a else b\n}\n\n * Returns the greater of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UByte, b: UByte): UByte {\n    return if (a >= b) a else b\n}\n\n * Returns the greater of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UShort, b: UShort):\n    UShort {\n        return if (a >= b) a else b\n}\n\n * Returns the greater of three values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: UInt, b: UInt, c: UInt): UInt {\n    return maxOf(a, maxOf(b, c))\n}\n\n * Returns the greater of three values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: ULong, b: ULong, c: ULong): ULong {\n    return maxOf(a, maxOf(b, c))\n}\n\n * Returns the greater of three values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: UByte, b: UByte, c: UByte): UByte {\n    return maxOf(a, maxOf(b, c))\n}\n\n * Returns the greater of three values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a:\n    UShort, b: UShort, c: UShort): UShort {\n        return maxOf(a, maxOf(b, c))\n}\n\n * Returns the greater of the given values.\n
```

```
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UInt, vararg other: UInt): UInt {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n * Returns the greater of the given values.\n\n*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: ULong, vararg other: ULong): ULong {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n * Returns the greater of the given values.\n
```

```
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UByte, vararg other: UByte): UByte {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n * Returns the greater of the given values.\n\n*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UShort, vararg other: UShort): UShort {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n * Returns the smaller of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UInt, b: UInt): UInt {\n    return if (a <= b) a else b\n}\n\n * Returns the smaller of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: ULong, b: ULong): ULong {\n    return if (a <= b) a else b\n}\n\n * Returns the smaller of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UByte, b: UByte): UByte {\n    return if (a <= b) a else b\n}\n\n * Returns the smaller of two values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UShort, b: UShort): UShort {\n    return if (a <= b) a else b\n}\n\n * Returns the smaller of three values.\n
```

```
*\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
```

```

npublic
inline fun minOf(a: UInt, b: UInt, c: UInt): UInt { \n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the
smaller of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\
npublic inline fun minOf(a: ULong, b: ULong, c: ULong): ULong { \n    return minOf(a, minOf(b, c))\n}\n\n/**\n *
Returns the smaller of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\
npublic inline fun minOf(a: UByte, b: UByte, c: UByte): UByte { \n    return minOf(a, minOf(b, c))\n}\n\n/**\n *
Returns the smaller of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\
npublic inline fun minOf(a: UShort, b: UShort, c: UShort): UShort { \n    return minOf(a, minOf(b, c))\n}\n\n/**\n *
Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun minOf(a: UInt, vararg other: UInt): UInt { \n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: ULong, vararg other: ULong):
ULong { \n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n/**\n * Returns the smaller
of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: UByte,
vararg other: UByte): UByte { \n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n/**\n *
Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
minOf(a: UShort, vararg other: UShort): UShort { \n    var min = a\n    for (e in other) min = minOf(min, e)\n
return min\n}\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("URangesKt")\n\npackage
kotlin.ranges\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the
first element.\n * \n * @throws NoSuchElementException if the progression is empty.\n
*\n@SinceKotlin("1.7")\npublic fun UIntProgression.first(): UInt { \n    if (isEmpty())\n        throw
NoSuchElementException("Progression $this is empty.")\n    return this.first\n}\n\n/**\n * Returns the first
element.\n * \n * @throws NoSuchElementException if the progression is empty.\n
*\n@SinceKotlin("1.7")\npublic fun ULongProgression.first(): ULong { \n    if (isEmpty())\n        throw
NoSuchElementException("Progression $this is empty.")\n    return this.first\n}\n\n/**\n * Returns the first element,
or `null` if the progression is empty.\n
*\n@SinceKotlin("1.7")\npublic fun
UIntProgression.firstOrNull(): UInt? { \n    return if (isEmpty()) null else this.first\n}\n\n/**\n * Returns the first
element, or `null` if the progression is empty.\n
*\n@SinceKotlin("1.7")\npublic fun
ULongProgression.firstOrNull(): ULong? { \n    return if (isEmpty()) null else this.first\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the progression is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.7")\npublic fun
UIntProgression.last(): UInt { \n    if (isEmpty())\n        throw NoSuchElementException("Progression $this is empty.")\n
return
this.last\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the progression is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.7")\npublic fun
ULongProgression.last(): ULong
{ \n    if (isEmpty())\n        throw NoSuchElementException("Progression $this is empty.")\n    return
this.last\n}\n\n/**\n * Returns the last element, or `null` if the progression is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.7")\npublic fun
UIntProgression.lastOrNull(): UInt? { \n    return if (isEmpty()) null else this.last\n}\n\n/**\n * Returns the last
element, or `null` if the progression is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.7")\npublic fun
ULongProgression.lastOrNull(): ULong? { \n    return if (isEmpty()) null else

```



```

this.last()\n\n/**\n * Returns a random element from this range.\n * \n * @throws IllegalArgumentException if this
range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun UIntRange.random(): UInt {\n    return random(Random)\n}\n\n/**\n * Returns a random element
from
this range.\n * \n * @throws IllegalArgumentException if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun ULongRange.random(): ULong {\n    return random(Random)\n}\n\n/**\n * Returns a random
element from this range using the specified source of randomness.\n * \n * @throws IllegalArgumentException if
this range is empty.\n * \n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalUnsignedTypes::class)\n
public fun UIntRange.random(random: Random): UInt {\n    try {\n        return random.nextUInt(this)\n    }
catch(e:
IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULongRange.random(random: Random):
ULong {\n    try {\n        return random.nextULong(this)\n    } catch(e:
IllegalArgumentException) {\n        throw
NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a random element from this range, or `null` if
this
range is empty.\n * \n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n * @kotlin.internal.InlineOnly\n * public inline fun UIntRange.randomOrNull():
UInt? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range, or `null` if
this
range is empty.\n * \n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n * @kotlin.internal.InlineOnly\n * public inline fun ULongRange.randomOrNull():
ULong? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range using the
specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\npublic
fun UIntRange.randomOrNull(random: Random): UInt? {\n    if (isEmpty())\n        return null\n    return
random.nextUInt(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\npublic fun ULongRange.randomOrNull(random: Random): ULong? {\n    if
(isEmpty())\n        return null\n    return random.nextULong(this)\n}\n\n/**\n * Returns `true` if this range contains
the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline operator fun UIntRange.contains(element: UInt?): Boolean {\n    return element != null &&
contains(element)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n *
Always returns `false` if the [element] is `null`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline operator fun ULongRange.contains(element: ULong?): Boolean {\n    return element != null &&
contains(element)\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: UByte): Boolean {\n    return contains(value.toUInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
ULongRange.contains(value: UByte): Boolean {\n    return contains(value.toULong())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun

```

```

ULongRange.contains(value: UInt): Boolean
    {\n    return contains(value.toULong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: ULong): Boolean {\n    return (value shr UInt.SIZE_BITS) == 0uL &&
contains(value.toUInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: UShort): Boolean {\n    return contains(value.toUInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
ULongRange.contains(value: UShort): Boolean {\n    return contains(value.toULong())\n}\n\n/**\n * Returns a
progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less
than or equal to `this`
value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UByte.downTo(to: UByte): UIntProgression {\n    return UIntProgression.fromClosedRange(this.toUInt(),
to.toUInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -
1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value
the returned progression is empty.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UInt.downTo(to: UInt): UIntProgression {\n    return UIntProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n *
Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should
be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned
progression is empty.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULong.downTo(to: ULong): ULongProgression {\n    return ULongProgression.fromClosedRange(this, to, -
1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n *
The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the
returned progression is empty.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UShort.downTo(to: UShort): UIntProgression {\n    return UIntProgression.fromClosedRange(this.toUInt(),
to.toUInt(), -1)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the
same step.\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UIntProgression.reversed(): UIntProgression {\n    return UIntProgression.fromClosedRange(last,
first, -step)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the
same step.\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULongProgression.reversed(): ULongProgression {\n    return ULongProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UIntProgression.step(step: Int): UIntProgression {\n    checkStepIsPositive(step > 0, step)\n    return
UIntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a progression
that goes over the same range with the given step.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULongProgression.step(step: Long): ULongProgression {\n    checkStepIsPositive(step > 0, step)\n    return
ULongProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a range from
this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value,
then the returned range is empty.\n
*\n@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UByte.until(to: UByte): UIntRange {\n    if (to <= UByte.MIN_VALUE) return UIntRange.EMPTY\n    return

```

```

this.toUInt() .. (to - 1u).toUInt()\n\n/**\n * Returns a range from this value up to but excluding the specified [to]
value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UInt.until(to:
UInt): UIntRange {\n if (to <= UInt.MIN_VALUE) return UIntRange.EMPTY\n return this .. (to -
1u).toUInt()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified
[to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULong.until(to: ULong): ULongRange {\n if (to <= ULong.MIN_VALUE) return ULongRange.EMPTY\n
return this .. (to - 1u).toULong()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to]
value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UShort.until(to: UShort): UIntRange {\n if (to <= UShort.MIN_VALUE) return UIntRange.EMPTY\n return
this.toUInt() .. (to - 1u).toUInt()\n}\n\n/**\n * Ensures that this value is not less than the specified
[minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue] or the
[minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceAtLeast(minimumValue: UInt): UInt {\n return if (this < minimumValue) minimumValue else
this}\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtLeast(minimumValue: ULong): ULong {\n return if (this < minimumValue) minimumValue else
this}\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UByte.coerceAtLeast(minimumValue: UByte): UByte {\n return if (this < minimumValue) minimumValue
else this}\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this
value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtLeast(minimumValue: UShort): UShort {\n return if (this < minimumValue) minimumValue else
this}\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UInt.coerceAtMost(maximumValue: UInt): UInt {\n return if (this > maximumValue) maximumValue else
this}\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtMost(maximumValue: ULong): ULong {\n return if (this > maximumValue) maximumValue else
this}\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UByte.coerceAtMost(maximumValue:

```

```

    UByte): UByte { \n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this
value is not greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtMost(maximumValue: UShort): UShort { \n    return if (this > maximumValue) maximumValue
else this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n
* @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceIn(minimumValue:
    UInt, maximumValue: UInt): UInt { \n    if (minimumValue > maximumValue) throw
IllegalArgumentOutOfRangeException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n    if (this < minimumValue) return minimumValue\n    if (this > maximumValue)
return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceIn(minimumValue: ULong, maximumValue: ULong): ULong { \n    if (minimumValue >
maximumValue) throw IllegalArgumentOutOfRangeException("Cannot coerce value to an empty range: maximum
$maximumValue is less than minimum $minimumValue.")\n
    if (this < minimumValue) return minimumValue\n    if (this > maximumValue) return maximumValue\n    return
this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n
* @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UByte.coerceIn(minimumValue: UByte, maximumValue: UByte): UByte { \n    if (minimumValue >
maximumValue) throw IllegalArgumentOutOfRangeException("Cannot coerce value to an empty range: maximum
$maximumValue is less than minimum $minimumValue.")\n    if (this < minimumValue) return minimumValue\n
if (this > maximumValue) return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the
specified range [minimumValue]..[maximumValue].\n
* \n * @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceIn(minimumValue: UShort, maximumValue: UShort): UShort { \n    if (minimumValue >
maximumValue) throw IllegalArgumentOutOfRangeException("Cannot coerce value to an empty range: maximum
$maximumValue is less than minimum $minimumValue.")\n    if (this < minimumValue) return minimumValue\n
if (this > maximumValue) return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the
specified [range].\n * \n * @return this value if it's in the [range], or `range.start` if this value is less than
`range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.\n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceIn(range: ClosedRange<UInt>): UInt { \n    if (range is ClosedFloatingPointRange) { \n        return
this.coerceIn<UInt>(range)\n    } \n    if (range.isEmpty()) throw IllegalArgumentOutOfRangeException("Cannot coerce value to

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an empty range: $range.)\n    return when {\n        this < range.start -> range.start\n        this > range.endInclusive -> range.endInclusive\n        else -> this\n    }\n\n/**\n * Ensures that this value lies in the specified [range].\n * @return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.\n * \n * @sample samples.comparisons.ComparableOps.coerceInUnsigned\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun ULong.coerceIn(range: ClosedRange<ULong>): ULong {\n    if (range is ClosedFloatingPointRange) {\n        return this.coerceIn<ULong>(range)\n    }\n    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to an empty range: $range.")\n    return when {\n        this < range.start -> range.start\n        this > range.endInclusive -> range.endInclusive\n        else -> this\n    }\n}\n\n"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("USequencesKt")\n\npackage kotlin.sequences\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<UShort>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\npublic expect open class Error : Throwable {\n    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n}\n\npublic expect open class Exception : Throwable {\n    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open class RuntimeException : Exception {\n    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open class IllegalArgumentException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open class IllegalStateException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open class IndexOutOfBoundsException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n}\n\npublic expect open class ConcurrentModificationException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n}\n\n@Deprecated("The constructor is not supported on all platforms and will be removed from kotlin-stdlib-common soon.", level = DeprecationLevel.ERROR)\n    constructor(message:

```



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[OptIn] annotation, e.g. `@OptIn(ExperimentalJsExport::class)`,\n * or with the `opt-
in=kotlin.js.ExperimentalJsExport` compiler option is given.\n *^@RequiresOptIn(level =
RequiresOptIn.Level.WARNING)\n *^@MustBeDocumented\n *^@Retention(AnnotationRetention.BINARY)\n *^@Since
Kotlin("1.4")\n *^public
annotation class ExperimentalJsExport\n *^*\n * Exports top-level declaration on JS platform.\n *^*\n * Compiled
module exposes declarations that are marked with this annotation without name mangling.\n *^*\n * This annotation
can be applied to either files or top-level declarations.\n *^*\n * It is currently prohibited to export the following kinds
of declarations:\n *^*\n * * `expect` declarations\n * * inline functions with reified type parameters\n * * suspend
functions\n * * secondary constructors without `@JsName`\n * * extension properties\n * * enum classes\n * *
annotation classes\n *^*\n * Signatures of exported declarations must only contain "exportable" types:\n *^*\n * *
`dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`, `Double`\n * * `BooleanArray`, `ByteArray`,
`ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`\n * * `Array<exportable-type>`\n * * Function types with
exportable parameters and return types\n * * `external` or `@JsExport` classes and interfaces\n * * Nullable
counterparts of types above\n * * Unit return type. Must not be nullable\n *^*\n * This annotation is experimental,
meaning that restrictions mentioned above are subject to change.\n
*^@ExperimentalJsExport\n *^@Retention(AnnotationRetention.BINARY)\n *^@Target(CLASS, PROPERTY,
FUNCTION, FILE)\n *^@SinceKotlin("1.4")\n *^@OptionalExpectation\n *^public expect annotation class
JsExport(),"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*^@n\n *^package kotlin.io\n *^*\n * Prints the line separator to the standard output stream. *^@n\n *^public expect fun
println()\n *^*\n * Prints the given [message] and the line separator to the standard output stream. *^@n\n *^public expect fun
println(message: Any?)\n *^*\n * Prints the given [message] to the
standard output stream. *^@n\n *^public expect fun print(message: Any?)\n *^*\n * Reads a line of input from the
standard input stream and returns it,\n *^* or throws a [RuntimeException] if EOF has already been reached when
[readln] is called.\n *^*\n * LF or CRLF is treated as the line terminator. Line terminator is not included in the
returned string.\n *^*\n * Currently this function is not supported in Kotlin/JS and throws
[UnsupportedOperationException].\n *^@n\n *^@SinceKotlin("1.6")\n *^public expect fun readln(): String\n *^*\n *
Reads a line of input from the standard input stream and returns it,\n *^* or return `null` if EOF has already been
reached when [readlnOrNull] is called.\n *^*\n * LF or CRLF is treated as the line terminator. Line terminator is not
included in the returned string.\n *^*\n * Currently this function is not supported in Kotlin/JS and throws
[UnsupportedOperationException].\n *^@n\n *^@SinceKotlin("1.6")\n *^public expect fun readlnOrNull():
String?\n *^*\n *^internal class ReadAfterEOFException(message:
String?) : RuntimeException(message)\n *^*\n *^internal expect interface Serializable\n *^*,""/*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *^@n\n *^package kotlin.collections\n *^nimport
kotlin.internal.PlatformDependent\n *^*\n * Classes that inherit from this interface can be represented as a
sequence of elements that can\n *^* be iterated over.\n *^* @param T the type of element being iterated over. The
iterator is covariant in its element type.\n *^@n\n *^public interface Iterable<out T> {\n *^* // **\n *^* Returns an iterator
over the elements of this object.\n *^* @n\n *^* public operator fun iterator(): Iterator<T>\n *^*\n *^*\n * Classes that
inherit from this interface can be represented as a sequence of elements that can\n *^* be iterated over and that
supports removing elements during iteration.\n *^* @param T the type of
element being iterated over. The mutable iterator is invariant in its element type.\n *^@n\n *^public interface
MutableIterable<out T> : Iterable<T> {\n *^* // **\n *^* Returns an iterator over the elements of this sequence that
supports removing elements during iteration.\n *^* @n\n *^* override fun iterator(): MutableIterator<T>\n *^*\n *^*\n * A
generic collection of elements. Methods in this interface support only read-only access to the collection;\n *^*
read/write access is supported through the [MutableCollection] interface.\n *^* @param E the type of elements
contained in the collection. The collection is covariant in its element type.\n *^@n\n *^public interface Collection<out E> :
Iterable<E> {\n *^* // Query Operations\n *^* // **\n *^* Returns the size of the collection.\n *^* @n\n *^* public val size:

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list is always modified as the result of this operation.\n    *\n    override fun add(element: E): Boolean\n\n    override fun remove(element: E): Boolean\n\n    // Bulk Modification Operations\n    /**\n     * Adds all of the elements of the specified collection to the end of this list.\n     *\n     * The elements are appended in the order they appear in the [elements] collection.\n     *\n     * @return `true` if the list was changed as the result of the operation.\n     */\n    override fun addAll(elements: Collection<E>): Boolean\n\n    /**\n     * Inserts all of the elements of the specified collection [elements] into this list at the specified [index].\n     *\n     * @return `true` if the list was changed as the result of the operation.\n     */\n    public fun addAll(index: Int, elements: Collection<E>): Boolean\n\n    override fun removeAll(elements: Collection<E>): Boolean\n\n    override fun retainAll(elements: Collection<E>): Boolean\n\n    override fun clear(): Unit\n\n    // Positional Access Operations\n    /**\n     * Replaces the element at the specified position in this list with the specified element.\n     *\n     * @return the element previously at the specified position.\n     */\n    public operator fun set(index: Int, element: E): E\n\n    /**\n     * Inserts an element into the list at the specified [index].\n     */\n    public fun add(index: Int, element: E): Unit\n\n    /**\n     * Removes an element at the specified [index] from the list.\n     *\n     * @return the element that has been removed.\n     */\n    public fun removeAt(index: Int): E\n\n    // List Iterators\n    override fun listIterator(): MutableListIterator<E>\n\n    override fun listIterator(index: Int): MutableListIterator<E>\n\n    // View\n    override fun subList(fromIndex: Int, toIndex: Int): MutableList<E>\n\n    /**\n     * A generic unordered collection of elements that does not support duplicate elements.\n     * Methods in this interface support only read-only access to the set;\n     * read/write access is supported through the [MutableSet] interface.\n     * @param E the type of elements contained in the set. The set is covariant in its element type.\n     */\n    public interface Set<out E> : Collection<E> {\n\n    // Query Operations\n    override val size: Int\n\n    override fun isEmpty(): Boolean\n\n    override fun contains(element: @UnsafeVariance E): Boolean\n\n    override fun iterator(): Iterator<E>\n\n    // Bulk Operations\n    override fun containsAll(elements: Collection<@UnsafeVariance E>): Boolean\n\n    /**\n     * A generic unordered collection of elements that does not support duplicate elements, and supports\n     * adding and removing elements.\n     * @param E the type of elements contained in the set. The mutable set is invariant in its element type.\n     */\n    public interface MutableSet<E> : Set<E>, MutableCollection<E> {\n\n    // Query Operations\n    override fun iterator(): MutableIterator<E>\n\n    // Modification Operations\n    /**\n     * Adds the specified element to the set.\n     *\n     * @return `true` if the element has been added, `false` if the element is already contained in the set.\n     */\n    override fun add(element: E): Boolean\n\n    override fun remove(element: E): Boolean\n\n    // Bulk Modification Operations\n    override fun addAll(elements: Collection<E>): Boolean\n\n    override fun removeAll(elements: Collection<E>): Boolean\n\n    override fun retainAll(elements: Collection<E>): Boolean\n\n    override fun clear(): Unit\n\n    /**\n     * A collection that holds pairs of objects (keys and values) and supports efficiently retrieving\n     * the value corresponding to each key. Map keys are unique; the map holds only one value for each key.\n     * Methods in this interface support only read-only access to the map; read-write access is supported through\n     * the [MutableMap] interface.\n     * @param K the type of map keys. The map is invariant in its key type, as it\n     * can accept key as a parameter (of [containsKey] for example) and return it in [keys] set.\n     * @param V the type of map values. The map is covariant in its value type.\n     */\n    public interface Map<K, out V> {\n\n    // Query Operations\n    /**\n     * Returns the number of key/value pairs in the map.\n     */\n    public val size: Int\n\n    /**\n     * Returns `true` if the map is empty (contains no elements), `false` otherwise.\n     */\n    public fun isEmpty(): Boolean\n\n    /**\n     * Returns `true` if the map contains the specified [key].\n     */\n    public fun containsKey(key: K): Boolean\n\n    /**\n     * Returns `true` if the map maps one or more keys to the specified [value].\n     */\n    public fun containsValue(value: @UnsafeVariance V): Boolean\n\n    /**\n     * Returns the value corresponding to the given [key], or `null` if such a key is not present in the map.\n     */\n    public operator fun get(key: K): V?\n\n    /**\n     * Returns the value corresponding to the given [key], or [defaultValue] if such a key is not present in the map.\n     */\n    public fun getOrDefault(key: K, defaultValue: @UnsafeVariance V): V {\n\n    // See default implementation in JDK sources\n    throw NotImplementedError()\n    }\n\n    // Views\n    /**\n     * Returns a read-only [Set] of all keys

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in this map.\n    */\n    public val keys: Set<K>\n\n    /**\n     * Returns a read-only [Collection] of all values in this
map. Note that this collection may contain duplicate values.\n    */\n    public val values: Collection<V>\n\n    /**\n     * Returns a read-only [Set] of all key/value pairs in this map.\n    */\n    public val entries: Set<Map.Entry<K,
V>>\n\n    /**\n     * Represents a key/value pair held by a [Map].\n    */\n    public interface Entry<out K, out V>
{\n    /**\n     * Returns the key of this key/value pair.\n    */\n    public val key: K\n\n    /**\n     *
Returns the value of this key/value
pair.\n    */\n    public val value: V\n    }\n\n    /**\n     * A modifiable collection that holds pairs of objects
(keys and values) and supports efficiently retrieving\n     * the value corresponding to each key. Map keys are unique;
the map holds only one value for each key.\n     * @param K the type of map keys. The map is invariant in its key
type.\n     * @param V the type of map values. The mutable map is invariant in its value type.\n    */\n    public interface
MutableMap<K, V> : Map<K, V> {\n    // Modification Operations\n    /**\n     * Associates the specified [value]
with the specified [key] in the map.\n     * @return the previous value associated with the key, or `null` if the
key was not present in the map.\n     */\n    public fun put(key: K, value: V): V?\n\n    /**\n     * Removes the
specified key and its corresponding value from this map.\n     * @return the previous value associated with the
key, or `null` if the key was not present in the map.\n     */\n    public fun remove(key: K): V?\n\n    /**\n     * Removes the entry for the specified key only if it is mapped to the
specified value.\n     * @return true if entry was removed\n     */\n    @SinceKotlin("1.1")\n    @PlatformDependent\n    public fun remove(key: K, value: V): Boolean {\n    // See default implementation in
JDK sources\n    return true\n    }\n\n    // Bulk Modification Operations\n    /**\n     * Updates this map with
key/value pairs from the specified map [from].\n     */\n    public fun putAll(from: Map<out K, V>): Unit\n\n    /**\n     * Removes all elements from this map.\n     */\n    public fun clear(): Unit\n\n    // Views\n    /**\n     * Returns a
[MutableSet] of all keys in this map.\n     */\n    override val keys: MutableSet<K>\n\n    /**\n     * Returns a
[MutableCollection] of all values in this map. Note that this collection may contain duplicate values.\n     */\n    override val values: MutableCollection<V>\n\n    /**\n     * Returns
a [MutableSet] of all key/value pairs in this map.\n     */\n    override val entries:
MutableSet<MutableMap.MutableEntry<K, V>>\n\n    /**\n     * Represents a key/value pair held by a
[MutableMap].\n     */\n    public interface MutableEntry<K, V> : Map.Entry<K, V> {\n    /**\n     * Changes
the value associated with the key of this entry.\n     * @return the previous value corresponding to the
key.\n     */\n    public fun setValue(newValue: V): V\n    }\n\n    /**\n     * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n     * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n     */\n\n    // Auto-generated file. DO NOT EDIT!\n\n    package
kotlin.collections\n\n    /**\n     * An iterator over a sequence of values of type `Byte`.\n     */\n    public abstract class ByteIterator :
Iterator<Byte> {\n    override final fun next() = nextByte()\n\n    /**\n     * Returns the next value in the sequence
without boxing.\n     */\n    public abstract fun nextByte(): Byte\n    }\n\n    /**\n     * An iterator over a sequence of values of type
`Char`.\n     */\n    public abstract class CharIterator : Iterator<Char> {\n    override final fun next() = nextChar()\n\n    /**\n     * Returns the next value in the sequence without boxing.\n     */\n    public abstract fun nextChar(): Char\n    }\n\n    /**\n     * An
iterator over a sequence of values of type `Short`.\n     */\n    public abstract class ShortIterator : Iterator<Short> {\n    override final fun next() = nextShort()\n\n    /**\n     * Returns the next value in the sequence without boxing.\n     */\n    public abstract fun nextShort(): Short\n    }\n\n    /**\n     * An iterator over a sequence of values of type `Int`.\n     */\n    public abstract class IntIterator : Iterator<Int> {\n    override final fun next() = nextInt()\n\n    /**\n     * Returns the next value in the sequence
without boxing.\n     */\n    public abstract fun nextInt(): Int\n    }\n\n    /**\n     * An iterator over a sequence of values of type
`Long`.\n     */\n    public abstract class LongIterator : Iterator<Long>
{\n    override final fun next() = nextLong()\n\n    /**\n     * Returns the next value in the sequence without boxing.\n     */\n    public abstract fun nextLong(): Long\n    }\n\n    /**\n     * An iterator over a sequence of values of type `Float`.\n     */\n    public abstract class FloatIterator : Iterator<Float> {\n    override final fun next() = nextFloat()\n\n    /**\n     * Returns the next
value in the sequence without boxing.\n     */\n    public abstract fun nextFloat(): Float\n    }\n\n    /**\n     * An iterator over a
sequence of values of type `Double`.\n     */\n    public abstract class DoubleIterator : Iterator<Double> {\n    override final
fun next() = nextDouble()\n\n    /**\n     * Returns the next value in the sequence without boxing.\n     */\n    public abstract fun

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nextDouble(): Double\n}\n\n/** An iterator over a sequence of values of type `Boolean`. */\npublic abstract class
BooleanIterator : Iterator<Boolean> {\n    override fun next() = nextBoolean()\n    /** Returns the next value
in the sequence without boxing. */\n    public
    abstract fun nextBoolean(): Boolean\n}\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin.ranges\n\n/**\n * An
iterator over a progression of values of type `Char`. \n * @property step the number by which the value is
incremented on each step.\n */\ninternal class CharProgressionIterator(first: Char, last: Char, val step: Int) :
CharIterator() {\n    private val finalElement: Int = last.code\n    private var hasNext: Boolean = if (step > 0) first <=
last else first >= last\n    private var next: Int = if (hasNext) first.code else finalElement\n\n    override fun hasNext():
Boolean = hasNext\n\n    override fun nextChar(): Char {\n        val value = next\n        if (value == finalElement)
{\n            if (!hasNext) throw kotlin.NoSuchElementException()\n            hasNext = false\n        } else {\n            next += step\n        }\n        return value.toChar()\n    }\n}\n\n/**\n * An iterator over a progression of values of type `Int`. \n * @property step the number by which the value is
incremented on each step.\n */\ninternal class IntProgressionIterator(first: Int, last: Int, val step: Int) : IntIterator()
{\n    private val finalElement: Int = last\n    private var hasNext: Boolean = if (step > 0) first <= last else first >=
last\n    private var next: Int = if (hasNext) first else finalElement\n\n    override fun hasNext(): Boolean =
hasNext\n\n    override fun nextInt(): Int {\n        val value = next\n        if (value == finalElement) {\n            if
(!hasNext) throw kotlin.NoSuchElementException()\n            hasNext = false\n        } else {\n            next +=
step\n        }\n        return value\n    }\n}\n\n/**\n * An iterator over a progression of values of type `Long`. \n *
@property step the number by
which the value is incremented on each step.\n */\ninternal class LongProgressionIterator(first: Long, last: Long,
val step: Long) : LongIterator() {\n    private val finalElement: Long = last\n    private var hasNext: Boolean = if
(step > 0) first <= last else first >= last\n    private var next: Long = if (hasNext) first else finalElement\n\n    override fun hasNext(): Boolean = hasNext\n\n    override fun nextLong(): Long {\n        val value = next\n        if
(value == finalElement) {\n            if (!hasNext) throw kotlin.NoSuchElementException()\n            hasNext = false\n        }
else {\n            next += step\n        }\n        return value\n    }\n}\n\n"/**\n * Copyright 2010-2022
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin.ranges\n\nimport kotlin.internal.getProgressionLastElement\n\n/**\n * A progression of values of type `Char`. \n */\npublic open class CharProgression\n    internal constructor\n    (\n        start: Char,\n        endInclusive: Char,\n        step: Int\n    ) : Iterable<Char> {\n    init {\n        if (step == 0)
throw kotlin.IllegalArgumentException("Step must be non-zero.")\n        if (step == Int.MIN_VALUE) throw
kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid overflow on negation.")\n    }\n\n    /**\n     * The first element in the progression.\n     */\n    public val first: Char = start\n\n    /**\n     * The
last element in the progression.\n     */\n    public val last: Char = getProgressionLastElement(start.code,
endInclusive.code, step).toChar()\n\n    /**\n     * The step of the progression.\n     */\n    public val step: Int =
step\n\n    override fun iterator(): CharIterator = CharProgressionIterator(first, last, step)\n\n    /**\n     * Checks if
the progression
is empty.\n     */\n    * Progression with a positive step is empty if its first element is greater than the last element.\n
    * Progression with a negative step is empty if its first element is less than the last element.\n     */\n    public open
fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun equals(other: Any?): Boolean =\n        other is CharProgression && (isEmpty() && other.isEmpty()) ||\n            first == other.first && last == other.last
&& step == other.step)\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (31 * first.code +
last.code) + step)\n\n    override fun toString(): String = if (step > 0) "$first..$last step $step" else "$first downTo
$last step ${-step}"\n\n    companion object {\n        /**\n         * Creates CharProgression within the specified
bounds of a closed range.\n         */\n        * The progression starts with the [rangeStart] value and goes toward the
[rangeEnd] value not

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    excluding it, with the specified [step].\n      * In order to go backwards the [step] must be negative.\n      *\n    * [step] must be greater than `Int.MIN_VALUE` and not equal to zero.\n      *\n    public fun
fromClosedRange(rangeStart: Char, rangeEnd: Char, step: Int): CharProgression = CharProgression(rangeStart,
rangeEnd, step)\n  }\n}\n\n/**\n * A progression of values of type `Int`.\n */\npublic open class IntProgression\ninternal constructor\n  (\n    start: Int,\n    endInclusive: Int,\n    step: Int\n  ): Iterable<Int> {\n  init {\n    if (step == 0) throw kotlin.IllegalArgumentException("Step must be non-zero.")\n    if (step ==
Int.MIN_VALUE) throw kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid
overflow on negation.")\n  }\n\n  /**\n   * The first element in the progression.\n   */\n   public val first: Int =
start\n\n   /**\n   * The last element in the progression.\n   *\n   public val last: Int = getProgressionLastElement(start, endInclusive, step)\n\n   /**\n   * The step of the
progression.\n   */\n   public val step: Int = step\n\n   override fun iterator(): IntIterator =
IntProgressionIterator(first, last, step)\n\n   /**\n   * Checks if the progression is empty.\n   */\n   * Progression
with a positive step is empty if its first element is greater than the last element.\n   * Progression with a negative
step is empty if its first element is less than the last element.\n   */\n   public open fun isEmpty(): Boolean = if
(step > 0) first > last else first < last\n\n   override fun equals(other: Any?): Boolean =\n     other is IntProgression
&& (isEmpty() && other.isEmpty() ||\n       first == other.first && last == other.last && step == other.step)\n\n   override fun hashCode(): Int =\n     if (isEmpty()) -1 else (31 * (31 * first + last) + step)\n\n   override fun
toString(): String = if (step > 0) "$first..$last
step $step" else "$first downTo $last step ${-step}"\n\n   companion object {\n     /**\n      * Creates
IntProgression within the specified bounds of a closed range.\n      *\n      * The progression starts with the
[rangeStart] value and goes toward the [rangeEnd] value not excluding it, with the specified [step].\n      * In order
to go backwards the [step] must be negative.\n      *\n      * [step] must be greater than `Int.MIN_VALUE` and
not equal to zero.\n      *\n      public fun fromClosedRange(rangeStart: Int, rangeEnd: Int, step: Int):
IntProgression = IntProgression(rangeStart, rangeEnd, step)\n  }\n}\n\n/**\n * A progression of values of type
`Long`.\n */\npublic open class LongProgression\n  internal constructor\n  (\n    start: Long,\n    endInclusive: Long,\n    step: Long\n  ): Iterable<Long> {\n  init {\n    if (step == 0L) throw
kotlin.IllegalArgumentException("Step must be non-zero.")\n    if (step == Long.MIN_VALUE) throw kotlin.IllegalArgumentException("Step must be greater than
Long.MIN_VALUE to avoid overflow on negation.")\n  }\n\n  /**\n   * The first element in the progression.\n   *\n   public val first: Long = start\n\n   /**\n   * The last element in the progression.\n   */\n   public val last:
Long = getProgressionLastElement(start, endInclusive, step)\n\n   /**\n   * The step of the progression.\n   */\n   public val step: Long = step\n\n   override fun iterator(): LongIterator = LongProgressionIterator(first, last, step)\n\n   /**\n   * Checks if the progression is empty.\n   */\n   * Progression with a positive step is empty if its first
element is greater than the last element.\n   * Progression with a negative step is empty if its first element is less
than the last element.\n   */\n   public open fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n   override fun equals(other: Any?):
Boolean =\n     other is LongProgression && (isEmpty() && other.isEmpty() ||\n       first == other.first && last
== other.last && step == other.step)\n\n   override fun hashCode(): Int =\n     if (isEmpty()) -1 else (31 * (31 *
(first xor (first ushr 32)) + (last xor (last ushr 32))) + (step xor (step ushr 32))).toInt()\n\n   override fun toString():
String = if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-step}"\n\n   companion object {\n     /**\n      * Creates LongProgression within the specified bounds of a closed range.\n      *\n      * The
progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it, with the
specified [step].\n      * In order to go backwards the [step] must be negative.\n      *\n      * [step] must be
greater than `Long.MIN_VALUE` and not equal to zero.\n      *\n      public fun fromClosedRange(rangeStart:
Long, rangeEnd: Long, step: Long): LongProgression
= LongProgression(rangeStart, rangeEnd, step)\n  }\n}\n\n"/**\n * Copyright 2010-2019 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.ranges\n\n/**\n * Represents a range of values

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(for example, numbers or characters).\n * See the [Kotlin language
documentation](https://kotlinlang.org/docs/reference/ranges.html) for more information.\n */\npublic interface
ClosedRange<T: Comparable<T>> {\n    /**\n     * The minimum value in the range.\n     */\n    public val start: T\n    /**\n     * The maximum value in the range (inclusive).\n     */\n    public val endInclusive: T\n    /**\n     * Checks whether the specified [value] belongs to the range.\n     */\n    public operator fun contains(value: T):
Boolean = value >= start && value <= endInclusive\n    /**\n     * Checks whether the range is empty.\n     */\n    * The range
is empty if its start value is greater than the end value.\n     */\n    public fun isEmpty(): Boolean = start >
endInclusive\n}\n"/\n * Copyright 2010-2015 JetBrains s.r.o.\n */\n * Licensed under the Apache License,
Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n */\n * http://www.apache.org/licenses/LICENSE-2.0\n */\n * Unless required by
applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n */\n\npackage
kotlin\n\n/**\n * The type with only one value: the `Unit` object. This type corresponds to the `void` type in Java.\n
*/\n\npublic object Unit {\n    override fun toString() = "kotlin.Unit"\n}\n"/\n * Copyright 2010-2015 JetBrains
s.r.o.\n */\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except
in compliance with the License.\n * You may obtain a copy of the License at\n */\n *
http://www.apache.org/licenses/LICENSE-2.0\n */\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */\n\npackage kotlin.annotation\n\nimport
kotlin.annotation.AnnotationTarget.*\n\n/**\n * Contains the list of code elements which are the possible annotation
targets\n */\n\npublic enum class AnnotationTarget {\n    /** Class, interface or object, annotation class is also
included */\n    CLASS,\n    /** Annotation class only */\n    ANNOTATION_CLASS,\n    /** Generic type
parameter */\n    TYPE_PARAMETER,\n    /**
Property */\n    PROPERTY,\n    /** Field, including property's backing field */\n    FIELD,\n    /** Local variable
*/\n    LOCAL_VARIABLE,\n    /** Value parameter of a function or a constructor */\n
VALUE_PARAMETER,\n    /** Constructor only (primary or secondary) */\n    CONSTRUCTOR,\n    /**
Function (constructors are not included) */\n    FUNCTION,\n    /** Property getter only */\n
PROPERTY_GETTER,\n    /** Property setter only */\n    PROPERTY_SETTER,\n    /** Type usage */\n
TYPE,\n    /** Any expression */\n    EXPRESSION,\n    /** File */\n    FILE,\n    /** Type alias */\n
@SinceKotlin("1.1")\n    TYPEALIAS\n}\n\n/**\n * Contains the list of possible annotation's retentions.\n */\n
Determines how an annotation is stored in binary output.\n */\n\npublic enum class AnnotationRetention {\n    /**
Annotation isn't stored in binary output */\n    SOURCE,\n    /** Annotation is stored in binary output, but invisible
for reflection */\n    BINARY,\n    /** Annotation
is stored in binary output and visible for reflection (default retention) */\n    RUNTIME\n}\n\n/**\n * This meta-
annotation indicates the kinds of code elements which are possible targets of an annotation.\n */\n\n * If the target
meta-annotation is not present on an annotation declaration, the annotation is applicable to the following elements:\n
*/\n * [CLASS], [PROPERTY], [FIELD], [LOCAL_VARIABLE], [VALUE_PARAMETER], [CONSTRUCTOR],
[FUNCTION], [PROPERTY_GETTER], [PROPERTY_SETTER].\n */\n\n * @property allowedTargets list of
allowed annotation targets\n
*/\n\n@Target(AnnotationTarget.ANNOTATION_CLASS)\n@MustBeDocumented\npublic annotation class
Target(vararg val allowedTargets: AnnotationTarget)\n\n/**\n * This meta-annotation determines whether an
annotation is stored in binary output and visible for reflection. By default, both are true.\n */\n\n * @property value
necessary annotation retention (RUNTIME, BINARY or SOURCE)\n
*/\n\n@Target(AnnotationTarget.ANNOTATION_CLASS)\npublic annotation class Retention(val

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value: AnnotationRetention = AnnotationRetention.RUNTIME)\n\n/**\n * This meta-annotation determines that an
annotation is applicable twice or more on a single code element\n
*/\n@Target(AnnotationTarget.ANNOTATION_CLASS)\npublic annotation class Repeatable\n\n/**\n * This
meta-annotation determines that an annotation is a part of public API and therefore should be included in the
generated\n * documentation for the element to which the annotation is applied.\n
*/\n@Target(AnnotationTarget.ANNOTATION_CLASS)\npublic annotation class MustBeDocumented\n","/*\n *
Copyright 2010-2016 JetBrains s.r.o.\n *\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License
for the specific language governing permissions and\n * limitations under the License.\n */\n\npackage
kotlin.internal\n\n/**\n * Specifies that the corresponding type parameter is not used for unsafe operations such as
casts or 'is' checks\n * That means it's completely safe to use generic types as argument for such parameter.\n
*/\n@Target(AnnotationTarget.TYPE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\ninternal
annotation class PureReifiable\n\n/**\n * Specifies that the corresponding built-in method exists depending on
platform.\n * Current implementation for JVM looks whether method with same JVM descriptor exists in the
module JDK.\n * For example MutableMap.remove(K, V) available only if corresponding\n * method
'java/util/Map.remove(Ljava/lang/Object;Ljava/lang/Object;)Z' is defined in JDK (i.e. for major versions >= 8)\n
*/\n@Target(AnnotationTarget.FUNCTION)\n@Retention(AnnotationRetention.BINARY)\ninternal
annotation class PlatformDependent\n\n/**\n * When applied to a function or property, enables a compiler
optimization that evaluates that function or property\n * at compile-time and replaces calls to it with the computed
result.\n */\n@Target(AnnotationTarget.CONSTRUCTOR, AnnotationTarget.FUNCTION,
AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.7")\ninternal
annotation class IntrinsicConstEvaluation\n","/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.internal\n\n// a mod b (in arithmetical sense)\nprivate fun mod(a:
Int, b: Int): Int {\n    val mod = a % b\n    return if (mod >= 0) mod else mod + b\n}\n\nprivate fun mod(a: Long, b:
Long): Long {\n    val mod = a % b\n    return if (mod >= 0) mod else mod + b\n}\n\n// (a - b) mod
c\nprivate fun differenceModulo(a: Int, b: Int, c: Int): Int {\n    return mod(mod(a, c) - mod(b, c), c)\n}\n\nprivate
fun differenceModulo(a: Long, b: Long, c: Long): Long {\n    return mod(mod(a, c) - mod(b, c), c)\n}\n\n/**\n *
Calculates the final element of a bounded arithmetic progression, i.e. the last element of the progression which is in
the range\n * from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n *
[step].\n * No validation on passed parameters is performed. The given parameters should satisfy the
condition:\n * - either `step > 0` and `start <= end`,\n * - or `step < 0` and `start >= end`.\n * @param start
first element of the progression\n * @param end ending bound for the progression\n * @param step increment, or
difference of successive elements in the progression\n * @return the final element of the progression\n *
@suppress\n */\n@PublishedApi\ninternal fun getProgressionLastElement(start: Int, end: Int,
step: Int): Int = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end, start, step)\n    step < 0
-> if (start <= end) end else end + differenceModulo(start, end, -step)\n    else -> throw
kotlin.IllegalArgumentException("Step is zero.")\n}\n\n/**\n * Calculates the final element of a bounded
arithmetic progression, i.e. the last element of the progression which is in the range\n * from [start] to [end] in case
of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n * No validation on passed
parameters is performed. The given parameters should satisfy the condition:\n * - either `step > 0` and `start <=
end`,\n * - or `step < 0` and `start >= end`.\n * @param start first element of the progression\n * @param end
ending bound for the progression\n * @param step increment, or difference of successive elements in the
progression\n * @return the final element of the progression\n * @suppress\n */\n@PublishedApi\ninternal fun

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getProgressionLastElement(start: Long, end: Long, step: Long): Long = when {\n  step > 0 -> if (start >= end) end
else end - differenceModulo(end, start, step)\n  step < 0 -> if (start <= end) end else end + differenceModulo(start,
end, -step)\n  else -> throw kotlin.IllegalArgumentException("Step is zero.")\n}\n\n", /*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@JsName("arrayIterator")\n\ninternal
fun arrayIterator(array: dynamic, type: String?) = when (type) {\n  null -> {\n    val arr: Array<dynamic> =
array\n    object : Iterator<dynamic> {\n      var index = 0\n      override fun hasNext() = index < arr.size\n
      override fun next() = if (index < arr.size) arr[index++] else throw NoSuchElementException("$index")\n
    }\n  }\n  "BooleanArray" -> booleanArrayIterator(array)\n
  "ByteArray" -> byteArrayIterator(array)\n  "ShortArray" -> shortArrayIterator(array)\n  "CharArray" ->
charArrayIterator(array)\n  "IntArray" -> intArrayIterator(array)\n  "LongArray" -> longArrayIterator(array)\n
  "FloatArray" -> floatArrayIterator(array)\n  "DoubleArray" -> doubleArrayIterator(array)\n  else -> throw
IllegalStateException("Unsupported type argument for arrayIterator:
$type")\n}\n\n@JsName("booleanArrayIterator")\n\ninternal fun booleanArrayIterator(array: BooleanArray) =
object : BooleanIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override fun
nextBoolean() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("byteArrayIterator")\n\ninternal fun byteArrayIterator(array:
ByteArray) = object : ByteIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override
fun nextByte() = if (index < array.size) array[index++]
else throw NoSuchElementException("$index")\n}\n\n@JsName("shortArrayIterator")\n\ninternal fun
shortArrayIterator(array: ShortArray) = object : ShortIterator() {\n  var index = 0\n  override fun hasNext() =
index < array.size\n  override fun nextShort() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("charArrayIterator")\n\ninternal fun charArrayIterator(array:
CharArray) = object : CharIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override
fun nextChar() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("intArrayIterator")\n\ninternal fun intArrayIterator(array:
IntArray) = object : IntIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override fun
nextInt() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("floatArrayIterator")\n\ninternal fun
floatArrayIterator(array: FloatArray) = object : FloatIterator() {\n  var index = 0\n  override fun hasNext() =
index < array.size\n  override fun nextFloat() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("doubleArrayIterator")\n\ninternal fun
doubleArrayIterator(array: DoubleArray) = object : DoubleIterator() {\n  var index = 0\n  override fun hasNext()
= index < array.size\n  override fun nextDouble() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("longArrayIterator")\n\ninternal fun longArrayIterator(array:
LongArray) = object : LongIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n
override fun nextLong() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("PropertyMetadata")\n\ninternal class
PropertyMetadata(@JsName("callableName") val name:
String)\n\n@JsName("noWhenBranchMatched")\n\ninternal
fun noWhenBranchMatched(): Nothing = throw
NoWhenBranchMatchedException()\n\n@JsName("subSequence")\n\ninternal fun subSequence(c: CharSequence,
startIndex: Int, endIndex: Int): CharSequence {\n  if (c is String) {\n    return c.substring(startIndex, endIndex)\n
} else {\n    return c.asDynamic().`subSequence_vux9f0$`(startIndex, endIndex)\n
}\n}\n\n@JsName("captureStack")\n\ninternal fun captureStack(@Suppress("UNUSED_PARAMETER")
baseClass: JsClass<in Throwable>, instance: Throwable) {\n  if (js("Error").captureStackTrace) {\n    // Using
uncropped stack traces due to KT-37563.\n    // Precise stack traces are implemented in JS IR compiler and
stdlib\n    js("Error").captureStackTrace(instance);\n  } else {\n    instance.asDynamic().stack = js("new

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Error()).stack;\n };\n\n@JsName("newThrowable")\ninternal fun newThrowable(message: String?, cause:
Throwable?): Throwable {\n    val throwable = js("new Error()")\n
    throwable.message = if (jsTypeOf(message) == "undefined") {\n        if (cause != null) cause.toString() else
null\n    } else {\n        message\n    }\n    throwable.cause = cause\n    throwable.name = "Throwable"\n    return
throwable\n}\n\n@JsName("BoxedChar")\ninternal class BoxedChar(val c: Int) : Comparable<Int> {\n    override
fun equals(other: Any?): Boolean {\n        return other is BoxedChar && c == other.c\n    }\n    override fun
hashCode(): Int {\n        return c\n    }\n    override fun toString(): String {\n        return
js("this.c").unsafeCast<Char>().toString()\n    }\n    override fun compareTo(other: Int): Int {\n        return
js("this.c - other").unsafeCast<Int>()\n    }\n    @JsName("valueOf")\n    public fun valueOf(): Int {\n
return c\n    }\n}\n\n@kotlin.internal.InlineOnly\ninternal inline fun <T> concat(args: Array<T>): T {\n    val typed
= js("Array")(args.size)\n    for (i in args.indices) {\n        val arr = args[i]\n
        if (arr !is Array<*>) {\n            typed[i] = js("[]").slice.call(arr)\n        } else {\n            typed[i] = arr\n        }\n    }\n    return js("[]").concat.apply(js("[]"), typed);\n}\n\n/** Concat regular Array's and TypedArray's into an
Array.\n * \n * @PublishedApi\n * @JsName("arrayConcat")\n * @Suppress("UNUSED_PARAMETER")\n * internal fun
<T> arrayConcat(a: T, b: T): T {\n    return concat(js("arguments"))\n}\n\n/** Concat primitive arrays. Main use:
prepare vararg arguments.\n * For compatibility with 1.1.0 the arguments may be a mixture of Array's and
TypedArray's.\n * \n * If the first argument is TypedArray (Byte-, Short-, Char-, Int-, Float-, and DoubleArray)
returns a TypedArray, otherwise an Array.\n * If the first argument has the $type$ property (Boolean-, Char-, and
LongArray) copy its value to result.$type$.\n * If the first argument is a regular Array without the $type$ property
default to arrayConcat.\n
 * \n * @PublishedApi\n * @JsName("primitiveArrayConcat")\n * @Suppress("UNUSED_PARAMETER")\n * internal
fun <T> primitiveArrayConcat(a: T, b: T): T {\n    val args: Array<T> = js("arguments")\n    if (a is Array<*> &&
a.asDynamic().`$type$` === undefined) {\n        return concat(args)\n    } else {\n        var size = 0\n        for (i in
args.indices) {\n            size += args[i].asDynamic().length as Int\n        }\n        val result = js("new
a.constructor(size)")\n        kotlin.copyArrayType(a, result)\n        size = 0\n        for (i in args.indices) {\n            val
arr = args[i].asDynamic()\n            for (j in 0 until arr.length) {\n                result[size++] = arr[j]\n            }\n        }\n        return result\n    }\n}\n\n@JsName("booleanArrayOf")\ninternal fun booleanArrayOf() =
withType("BooleanArray", js("[]").slice.call(arguments))\n\n@JsName("charArrayOf")\ninternal fun
charArrayOf() = withType("CharArray", js("new
Uint16Array(arguments)"))\n\n@JsName("longArrayOf")\ninternal fun longArrayOf()
= withType("LongArray",
js("[]").slice.call(arguments))\n\n@JsName("withType")\n@kotlin.internal.InlineOnly\ninternal inline fun
withType(type: String, array: dynamic): dynamic {\n    array.`$type$` = type\n    return array\n}\n\n/*\n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n *
Function corresponding to JavaScript's `typeof` operator\n
 * \n * @kotlin.internal.InlineOnly\n * @Suppress("UNUSED_PARAMETER")\n * public inline fun jsTypeOf(a: Any?):
String = js("typeof a")\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n@file:Suppress("UNUSED_PARAMETER",
"NOTHING_TO_INLINE")\n\npackage kotlin\n\n/**\n * Returns an empty array
of the specified type [T].\n * \n * @public\n * inline fun <T> emptyArray(): Array<T> = js("[]")\n\n@library\npublic fun
<T> arrayOf(vararg elements: T): Array<T> = definedExternally\n\n@library\npublic fun doubleArrayOf(vararg
elements: Double): DoubleArray = definedExternally\n\n@library\npublic fun floatArrayOf(vararg elements: Float):
FloatArray = definedExternally\n\n@library\npublic fun longArrayOf(vararg elements: Long): LongArray =
definedExternally\n\n@library\npublic fun intArrayOf(vararg elements: Int): IntArray =
definedExternally\n\n@library\npublic fun charArrayOf(vararg elements: Char): CharArray =
definedExternally\n\n@library\npublic fun shortArrayOf(vararg elements: Short): ShortArray =

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definedExternally\n\n@library\npublic fun arrayOf(vararg elements: Byte): ByteArray =
definedExternally\n\n@library\npublic fun booleanArrayOf(vararg elements: Boolean): BooleanArray =
definedExternally\n\n/**\n * Creates a new instance of the [Lazy] that uses the specified initialization
function [initializer].\n */\npublic actual fun <T> lazy(initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)\n\n/**\n * Creates a new instance of the [Lazy] that uses the specified initialization
function [initializer].\n */\n * The [mode] parameter is ignored. *\npublic actual fun <T> lazy(mode:
LazyThreadSafetyMode, initializer: () -> T): Lazy<T> = UnsafeLazyImpl(initializer)\n\n/**\n * Creates a new
instance of the [Lazy] that uses the specified initialization function [initializer].\n */\n * The [lock] parameter is
ignored.\n */\npublic actual fun <T> lazy(lock: Any?, initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)\n\n\ninternal fun fillFrom(src: dynamic, dst: dynamic): dynamic {\n    val srcLen: Int =
src.length\n    val dstLen: Int = dst.length\n    var index: Int = 0\n    while (index < srcLen && index < dstLen)
dst[index] = src[index++]\n    return dst\n}\n\n\ninternal fun arrayCopyResize(source: dynamic, newSize: Int,
defaultValue: Any?): dynamic {\n
    val result = source.slice(0, newSize)\n    copyArrayType(source, result)\n    var index: Int = source.length\n    if
(newSize > index) {\n        result.length = newSize\n        while (index < newSize) result[index++] = defaultValue\n
    }\n    return result\n}\n\n\ninternal fun <T> arrayPlusCollection(array: dynamic, collection: Collection<T>): dynamic
{\n    val result = array.slice()\n    result.length += collection.size\n    copyArrayType(array, result)\n    var index: Int
= array.length\n    for (element in collection) result[index++] = element\n    return result\n}\n\n\ninternal fun <T>
fillFromCollection(dst: dynamic, startIndex: Int, collection: Collection<T>): dynamic {\n    var index = startIndex\n
for (element in collection) dst[index++] = element\n    return dst\n}\n\n\ninternal inline fun copyArrayType(from:
dynamic, to: dynamic) {\n    if (from.`$type$` !== undefined) {\n        to.`$type$` = from.`$type$`\n
    }\n}\n\n\ninternal inline fun jsIsType(obj: dynamic, jsClass:
dynamic) = js("Kotlin").isType(obj, jsClass)", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Creates a Char with the specified [code].\n
*/\n * @sample samples.text.Chars.charFromCode\n
*/\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun Char(code: UShort): Char {\n    return code.toInt().toChar()\n}\n", "/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@SinceKotlin("1.3")\n@JsName("CoroutineImpl")\n\ninternal abstract class CoroutineImpl(private val resultContinuation:
Continuation<Any?>) : Continuation<Any?> {\n    protected var state = 0\n    protected var exceptionState = 0\n
protected var result: Any? = null\n    protected var exception: Throwable? = null\n    protected var finallyPath:
Array<Int>? = null\n\n    public override val context: CoroutineContext = resultContinuation.context\n\n    private
var intercepted_: Continuation<Any?>? = null\n\n    public fun intercepted(): Continuation<Any?> =\nintercepted_\n        ?: (context[ContinuationInterceptor]?.interceptContinuation(this) ?: this)\n        .also {\n
intercepted_ = it }\n\n    override fun resumeWith(result: Result<Any?>) {\n        var current = this\n        var
currentResult: Any? = result.getOrNull()\n        var currentException: Throwable? = result.exceptionOrNull()\n\n        // This loop unrolls recursion in current.resumeWith(param) to make saner and shorter stack traces on resume\n
while (true) {\n            with(current) {\n
                val completion = resultContinuation\n                // Set result and exception fields in the current continuation\n
                if (currentException == null) {\n                    this.result = currentResult\n                    } else {\n                        state =
exceptionState\n                        exception = currentException\n                    }\n                try {\n                    val
outcome = doResume()\n                    if (outcome === COROUTINE_SUSPENDED) return\n
                    currentResult = outcome\n                    currentException = null\n                } catch (exception: dynamic) { // Catch
all exceptions\n                    currentResult = null\n                    currentException =
                    exception.unsafeCast<Throwable>()\n                }\n                releaseIntercepted() // this state machine instance is

```

```

terminating\n\n        if (completion is CoroutineImpl) {\n                // unrolling recursion via loop\n                current = completion\n                } else {\n                // top-level completion reached -- invoke and return\n                currentException?.let {\n                completion.resumeWithException(it)\n                } ?:\n                completion.resume(currentResult)\n                return\n                }\n        }\n    }\n\n    private fun\n    releaseIntercepted() {\n        val intercepted = intercepted_\n        if (intercepted != null && intercepted !== this) {\n            context[ContinuationInterceptor]!!.releaseInterceptedContinuation(intercepted)\n        }\n        this.intercepted_\n    } = CompletedContinuation // just in case\n    }\n\n    protected abstract fun doResume(): Any?\n}\n\ninternal object\nCompletedContinuation : Continuation<Any?> {\n    override val context: CoroutineContext\n        get() =\n        error(\n        "This continuation is already complete")\n    override fun resumeWith(result: Result<Any?>) {\n        error(\n        "This continuation\n        is already complete")\n    }\n    override fun toString(): String = \n        "This continuation is already\n        complete"\n}\n\n"/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@file:Suppress(\n    "UNCHECKED_CAST",\n    "RedundantVisibilityModifier")\n\npackage kotlin\n\nimport\n    kotlin.contracts.*\nimport kotlin.internal.InlineOnly\nimport kotlin.jvm.JvmField\nimport\n    kotlin.jvm.JvmInline\nimport kotlin.jvm.JvmName\n\n/**\n * A discriminated union that encapsulates a successful\n * outcome with a value of type [T]\n * or a failure with an arbitrary [Throwable] exception.\n */\n\n@SinceKotlin("1.3")\n@JvmInline\npublic value class Result<out T> @PublishedApi internal constructor(\n    @PublishedApi\n    internal val value: Any?\n): Serializable {\n    // discovery\n    /**\n     * Returns `true` if this\n     * instance represents a successful outcome.\n     *\n     * In this case [isFailure] returns `false`.\n     */\n    public val isSuccess: Boolean\n        get() = value !is Failure\n\n    /**\n     * Returns `true` if this instance represents a failed outcome.\n     * In this case [isSuccess] returns `false`.\n     */\n    public val isFailure: Boolean\n        get() = value is Failure\n\n    // value & exception retrieval\n    /**\n     * Returns the encapsulated value if this instance represents [success][Result.isSuccess] or `null`\n     * if it is [failure][Result.isFailure].\n     *\n     * This function is a shorthand for `getOrElse { null }` (see [getOrElse]) or\n     * `fold(onSuccess = { it }, onFailure = { null })` (see [fold]).\n     */\n    @InlineOnly\n    public inline fun\n    getOrNull(): T? =\n        when {\n            isFailure -> null\n            else -> value as T\n        }\n\n    /**\n     * Returns the encapsulated [Throwable] exception if this instance represents [failure][isFailure] or `null`\n     * if it is [success][isSuccess].\n     *\n     * This function is a shorthand for `fold(onSuccess = { null }, onFailure = { it })` (see [fold]).\n     */\n    public fun exceptionOrNull(): Throwable? =\n        when (value) {\n            is Failure -> value.exception\n            else -> null\n        }\n\n    /**\n     * Returns a string `Success(v)` if this instance represents\n     * [success][Result.isSuccess]\n     * where `v` is a string representation of the value or a string `Failure(x)` if\n     * it is [failure][isFailure] where `x` is a string representation of the exception.\n     */\n    public override fun toString():\n    String =\n        when (value) {\n            is Failure -> value.toString() // "Failure($exception)"\n            else ->\n            "Success($value)"\n        }\n\n    // companion with constructors\n    /**\n     * Companion object for [Result]\n     * class that contains its constructor functions\n     * [success] and [failure].\n     */\n    public companion object {\n\n        /**\n         * Returns\n         * an instance that encapsulates the given [value] as successful value.\n         */\n        @Suppress("INAPPLICABLE_JVM_NAME")\n        @InlineOnly\n        @JvmName("success")\n        public\n        inline fun <T> success(value: T): Result<T> =\n            Result(value)\n\n        /**\n         * Returns an instance that\n         * encapsulates the given [Throwable] [exception] as failure.\n         */\n        @Suppress("INAPPLICABLE_JVM_NAME")\n        @InlineOnly\n        @JvmName("failure")\n        public\n        inline fun <T> failure(exception: Throwable): Result<T> =\n            Result(createFailure(exception))\n    }\n\n    internal class Failure(\n        @JvmField\n        val exception: Throwable\n    ): Serializable {\n        override fun\n        equals(other: Any?): Boolean = other is Failure && exception == other.exception\n        override fun hashCode():\n        Int = exception.hashCode()\n        override fun toString(): String = "Failure($exception)"\n    }\n\n    /**\n     * Creates an instance of

```

internal marker [Result.Failure] class to\n * make sure that this class is not exposed in ABI.\n

```
*\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun createFailure(exception: Throwable): Any =\nResult.Failure(exception)\n\n/*\n * Throws exception if the result is failure. This internal function minimizes\n * inlined bytecode for [getOrThrow] and makes sure that in the future we can\n * add some exception-augmenting logic here (if needed).\n */\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun Result<*>.throwOnFailure() {\n    if (value is Result.Failure) throw value.exception\n}\n\n/*\n * Calls the specified function [block] and returns its encapsulated result if invocation was successful,\n * catching any [Throwable] exception that was thrown from the [block] function execution and encapsulating it as a failure.\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R> runCatching(block: () -> R): Result<R> {\n    return try {\n        Result.success(block())\n    } catch (e: Throwable) {\n        Result.failure(e)\n    }\n}\n\n/*\n * Calls the specified function [block] with `this` value as its receiver and returns its encapsulated result if invocation was successful,\n * catching any [Throwable] exception that was thrown from the [block] function execution and encapsulating it as a failure.\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T, R> T.runCatching(block: T.() -> R): Result<R> {\n    return try {\n        Result.success(block())\n    } catch (e: Throwable) {\n        Result.failure(e)\n    }\n}\n\n// -- extensions ---\n\n/*\n * Returns the encapsulated value if this instance represents [success][Result.isSuccess] or throws the encapsulated [Throwable] exception\n * if it is [failure][Result.isFailure].\n */\n * This function is a shorthand for `getOrElse { throw it }` (see [getOrElse]).\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T> Result<T>.getOrThrow(): T {\n    throwOnFailure()\n    return value as T\n}\n\n/*\n * Returns the encapsulated value if this instance represents [success][Result.isSuccess] or the\n * result of [onFailure] function for the encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n * Note, that this function rethrows any [Throwable] exception thrown by [onFailure] function.\n * This function is a shorthand for `fold(onSuccess = { it }, onFailure = onFailure)` (see [fold]).\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.getOrElse(onFailure: (exception: Throwable) -> R): R {\n    contract {\n        callsInPlace(onFailure, InvocationKind.AT_MOST_ONCE)\n    }\n    return when (val exception = exceptionOrNull()) {\n        null -> value as T\n        else -> onFailure(exception)\n    }\n}\n\n/*\n * Returns the encapsulated value if this instance represents [success][Result.isSuccess] or the\n * [defaultValue] if it is [failure][Result.isFailure].\n */\n * This function is a shorthand for `getOrElse { defaultValue }` (see [getOrElse]).\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.getOrDefault(defaultValue: R): R {\n    if (isFailure) return defaultValue\n    return value as T\n}\n\n/*\n * Returns the result of [onSuccess] for the encapsulated value if this instance represents [success][Result.isSuccess]\n * or the result of [onFailure] function for the encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n * Note, that this function rethrows any [Throwable] exception thrown by [onSuccess] or by [onFailure] function.\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T> Result<T>.fold(\n    onSuccess: (value: T) -> R,\n    onFailure: (exception: Throwable) -> R\n): R {\n    contract {\n        callsInPlace(onSuccess, InvocationKind.AT_MOST_ONCE)\n        callsInPlace(onFailure, InvocationKind.AT_MOST_ONCE)\n    }\n    return when (val exception = exceptionOrNull()) {\n        null -> onSuccess(value as T)\n        else -> onFailure(exception)\n    }\n}\n\n// transformation\n\n/*\n * Returns the encapsulated result of the given [transform] function applied to the encapsulated value\n * if this instance represents [success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n * Note, that this function rethrows any [Throwable] exception thrown by [transform] function.\n * See [mapCatching] for an alternative that encapsulates exceptions.\n */\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T> Result<T>.map(transform: (value: T) -> R): Result<R> {\n    contract {\n        callsInPlace(transform, InvocationKind.AT_MOST_ONCE)\n    }\n    return when {\n        isSuccess -> Result.success(transform(value as T))\n        else -> Result(value)\n    }\n}\n\n/*\n * Returns the encapsulated result of the given [transform] function applied to the encapsulated value\n * if this instance represents [success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n * This function catches any [Throwable] exception thrown by [transform] function and encapsulates it as a failure.\n * See [map] for an
```

```

alternative that rethrows exceptions from `transform` function.
*/@InlineOnly@SinceKotlin("1.3")
public inline fun <R, T> Result<T>.mapCatching(transform: (value: T) -> R): Result<R> {
    return when {
        isSuccess -> runCatching { transform(value as T) }
        else -> Result(value)
    }
}
/**
 * Returns the encapsulated result of the given [transform] function applied to the encapsulated [Throwable] exception
 * if this instance represents [failure][Result.isFailure] or the original encapsulated value if it is
 * [success][Result.isSuccess].
 * Note, that this function rethrows any [Throwable] exception thrown by
 * [transform] function.
 * See [recoverCatching] for an alternative that encapsulates exceptions.
*/@InlineOnly@SinceKotlin("1.3")
public inline fun <R, T : R> Result<T>.recover(transform: (exception: Throwable) -> R): Result<R> {
    contract {
        callsInPlace(transform, InvocationKind.AT_MOST_ONCE)
    }
    return when (val exception = exceptionOrNull()) {
        null -> this
        else -> Result.success(transform(exception))
    }
}
/**
 * Returns the encapsulated result of the given [transform] function applied to the encapsulated [Throwable]
 * exception
 * if this instance represents [failure][Result.isFailure] or the original encapsulated value if it is
 * [success][Result.isSuccess].
 * This function catches any [Throwable] exception thrown by [transform]
 * function and encapsulates it as a failure.
 * See [recover] for an alternative that rethrows exceptions.
*/@InlineOnly@SinceKotlin("1.3")
public inline fun <R, T : R> Result<T>.recoverCatching(transform: (exception: Throwable) -> R): Result<R> {
    return when (val exception = exceptionOrNull()) {
        null -> this
        else -> runCatching { transform(exception) }
    }
}
/**
 * Performs the given [action] on the encapsulated [Throwable] exception if this instance
 * represents [failure][Result.isFailure].
 * Returns the original `Result` unchanged.
*/@InlineOnly@SinceKotlin("1.3")
public inline fun <T> Result<T>.onFailure(action: (exception: Throwable) -> Unit): Result<T> {
    contract {
        callsInPlace(action, InvocationKind.AT_MOST_ONCE)
    }
    exceptionOrNull()?.let { action(it) }
    return this
}
/**
 * Performs the given [action] on the
 * encapsulated value if this instance represents [success][Result.isSuccess].
 * Returns the original `Result`
 * unchanged.
*/@InlineOnly@SinceKotlin("1.3")
public inline fun <T> Result<T>.onSuccess(action: (value: T) -> Unit): Result<T> {
    contract {
        callsInPlace(action, InvocationKind.AT_MOST_ONCE)
    }
    if (isSuccess) action(value as T)
    return this
}
}
// -----
"/**
 * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
 * Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
 * found in the license/LICENSE.txt file.
*/
package kotlin.coroutines
import kotlin.contracts.*
import kotlin.coroutines.intrinsics.*
import kotlin.internal.InlineOnly
/**
 * Interface representing a continuation after
 * a suspension point that returns a value of type `T`.
*/@SinceKotlin("1.3")
public interface Continuation<in T> {
    /**
     * The context of the coroutine that corresponds to this continuation.
     */
    public val context: CoroutineContext
    /**
     * Resumes the execution of the corresponding coroutine passing a successful or
     * failed [result] as the return value of the last suspension point.
     */
    public fun resumeWith(result: Result<T>)
}
/**
 * Classes and interfaces marked with this annotation
 * are restricted when used as receivers for extension `suspend` functions. These `suspend` extensions can only
 * invoke other member or extension `suspend` functions on this particular receiver and are restricted from calling
 * arbitrary suspension functions.
*/@SinceKotlin("1.3")
@Target(AnnotationTarget.CLASS)
@Retention(AnnotationRetention.BINARY)
public annotation class RestrictsSuspension
/**
 * Resumes the execution of the corresponding coroutine passing
 * [value] as the return value of the last suspension point.
*/@SinceKotlin("1.3")
@InlineOnly
public inline fun <T> Continuation<T>.resume(value: T): Unit =
    resumeWith(Result.success(value))
/**
 * Resumes the
 * execution of the corresponding coroutine so that the [exception] is re-thrown right after the last suspension
 * point.
*/@SinceKotlin("1.3")
@InlineOnly
public inline fun <T> Continuation<T>.resumeWithException(exception: Throwable): Unit =
    resumeWith(Result.failure(exception))
}

```

```

* Creates a [Continuation] instance with the given [context] and implementation of [resumeWith] method.\n
*\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun <T> Continuation(\n    context: CoroutineContext,\n    crossinline resumeWith: (Result<T>) -> Unit)\n): Continuation<T> =\n    object : Continuation<T> {\n        override\n        val context: CoroutineContext\n            get() = context\n        override fun resumeWith(result: Result<T>) =\n            resumeWith(result)\n    }\n\n**\n* Creates a coroutine without a receiver and with result type [T].\n* This\nfunction creates a new, fresh instance of suspendable computation every time it is invoked.\n*\n*\n* To start\nexecuting the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance.\n*\n*\n* The\n[completion] continuation is invoked when the coroutine completes with a result or an exception.\n*\n*\n* Subsequent\ninvocation of any resume function on the resulting continuation will produce an [IllegalStateException].\n\n*\n*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <T> (suspend () ->\nT).createCoroutine(\n    completion: Continuation<T>)\n): Continuation<Unit> =\n    SafeContinuation(createCoroutineUnintercepted(completion).intercepted(), COROUTINE_SUSPENDED)\n\n**\n* Creates a coroutine with receiver type [R] and result type [T].\n* This function creates a new, fresh instance of\nsuspendable computation every time it is invoked.\n*\n*\n* To start executing the created coroutine, invoke\n`resume(Unit)` on the returned [Continuation] instance.\n*\n*\n* The [completion] continuation is invoked when the\n coroutine completes with a result or an exception.\n*\n*\n* Subsequent invocation of any resume function on the resulting\n continuation will produce an [IllegalStateException].\n\n*\n*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <R, T> (suspend R.() ->\nT).createCoroutine(\n    receiver: R,\n    completion: Continuation<T>)\n): Continuation<Unit> =\n    SafeContinuation(createCoroutineUnintercepted(receiver,\n        completion).intercepted(), COROUTINE_SUSPENDED)\n\n**\n* Starts a coroutine without a receiver and with\nresult type [T].\n* This function creates and starts a new, fresh instance of suspendable computation every time it is\ninvoked.\n*\n*\n* The [completion] continuation is invoked when the coroutine completes with a result or an exception.\n\n*\n*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <T> (suspend () ->\nT).startCoroutine(\n    completion: Continuation<T>)\n) {\n    createCoroutineUnintercepted(completion).intercepted().resume(Unit)\n}\n\n**\n* Starts a coroutine with receiver\n type [R] and result type [T].\n* This function creates and starts a new, fresh instance of suspendable computation\n every time it is invoked.\n*\n*\n* The [completion] continuation is invoked when the coroutine completes with a result or\n an exception.\n\n*\n*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <R, T> (suspend\nR.() ->\nT).startCoroutine(\n    receiver: R,\n    completion: Continuation<T>)\n) {\n    createCoroutineUnintercepted(receiver, completion).intercepted().resume(Unit)\n}\n\n**\n* Obtains the current\n continuation instance inside suspend functions and suspends\n* the currently running coroutine.\n*\n*\n* In this\n function both [Continuation.resume] and [Continuation.resumeWithException] can be used either synchronously\n in\n* the same stack-frame where the suspension function is run or asynchronously later in the same thread or\n* from a different thread of execution. Subsequent invocation of any resume function will produce an\n [IllegalStateException].\n\n*\n*\n@SinceKotlin("1.3")\n@InlineOnly\npublic suspend inline fun <T>\nsuspendCoroutine(crossinline block: (Continuation<T>) -> Unit): T {\n    contract { callsInPlace(block,\n        InvocationKind.EXACTLY_ONCE) }\n    return suspendCoroutineUninterceptedOrReturn { c: Continuation<T> ->\n        val safe = SafeContinuation(c.intercepted())\n        block(safe)\n        safe.getOrThrow()\n    }\n}\n\n**\n* Returns the context of the current coroutine.\n\n*\n*\n@SinceKotlin("1.3")\n@Suppress("WRONG_MODIFIER_TARGET")\n@InlineOnly\npublic suspend inline\nval coroutineContext: CoroutineContext\n    get() {\n        throw NotImplementedError("Implemented as\n        intrinsic")\n    }\n}\n\n**\n* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n\n*\n*\n* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n*\n*\n@npackage kotlin.coroutines.intrinsics\n\nimport kotlin.coroutines.*\nimport kotlin.internal.InlineOnly\n\n**\n* Starts an unintercepted coroutine without a receiver and with result type [T] and executes it until its first\nsuspension.\n*\n*\n* Returns the result of the coroutine or throws its exception if it does not suspend or

```

[COROUTINE_SUSPENDED] if it suspends. In the latter case, the [completion] continuation is invoked when the coroutine completes

with a result or an exception. The coroutine is started directly in the invoker's thread without going through the [ContinuationInterceptor] that might be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established. This function is designed to be used from inside of [suspendCoroutineUninterceptedOrReturn] to resume the execution of the suspended coroutine using a reference to the suspending function.

```

@SinceKotlin("1.3")
@InlineOnly
public actual inline fun <T> (suspend () -> T).startCoroutineUninterceptedOrReturn(
    completion: Continuation<T>): Any? = this.asDynamic()(completion, false)

```

Starts an unintercepted coroutine with receiver type [R] and result type [T] and executes it until its first suspension. Returns the result of the coroutine or throws its exception if it does not suspend or [COROUTINE_SUSPENDED] if it suspends. In the latter case, the [completion] continuation is invoked when the coroutine completes with a result or an exception.

The coroutine is started directly in the invoker's thread without going through the [ContinuationInterceptor] that might be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established. This function is designed to be used from inside of [suspendCoroutineUninterceptedOrReturn] to resume the execution of the suspended coroutine using a reference to the suspending function.

```

@SinceKotlin("1.3")
@InlineOnly
public actual inline fun <R, T> (suspend R.() -> T).startCoroutineUninterceptedOrReturn(
    receiver: R, completion: Continuation<T>): Any? = this.asDynamic()(receiver, completion, false)

```

internal actual inline fun <R, P, T> (suspend R.(P) -> T).startCoroutineUninterceptedOrReturn(
 receiver: R, param: P, completion: Continuation<T>): Any? = this.asDynamic()(receiver, param, completion, false)

Creates unintercepted coroutine without receiver and with result type [T]. This function creates a new, fresh instance of suspendable computation every time it is invoked. To start executing the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance. The [completion] continuation is invoked when coroutine completes with result or exception. This function returns unintercepted continuation. Invocation of `resume(Unit)` starts coroutine immediately in the invoker's call stack without going through the [ContinuationInterceptor] that might be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established. Note that [completion] of this function may get invoked in an arbitrary context. [Continuation.intercepted] can be used to acquire the intercepted continuation.

Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of both the coroutine and [completion] happens in the invocation context established by [ContinuationInterceptor]. Repeated invocation of any resume function on the resulting continuation corrupts the state machine of the coroutine and may result in arbitrary behaviour or exception.

```

@SinceKotlin("1.3")
public actual fun <T> (suspend () -> T).createCoroutineUnintercepted(
    completion: Continuation<T>): Continuation<Unit> = // Kotlin/JS
suspend lambdas have an extra parameter `suspended`
if (this.asDynamic().length == 2) { // When
`suspended` is true the continuation is created, but not executed
this.asDynamic()(completion, true) } else
{ createCoroutineFromSuspendFunction(completion) { this.asDynamic()(completion) } }

```

Creates unintercepted coroutine with receiver type [R] and result type [T]. This function creates a new, fresh instance of suspendable computation every time it is invoked. To start executing the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance. The [completion] continuation is invoked when coroutine completes with result or exception. This function returns unintercepted continuation. Invocation of `resume(Unit)` starts coroutine immediately in the invoker's call stack without going through the [ContinuationInterceptor] that might be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established. Note that [completion] of this function may get invoked in an arbitrary context. [Continuation.intercepted] can be used to acquire the intercepted continuation. Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of both the coroutine and [completion] happens in

```

the invocation context established by\n * [ContinuationInterceptor].\n *\n * Repeated invocation of any resume
function on the resulting continuation corrupts the\n * state machine of the coroutine and may result in arbitrary
behaviour or exception.\n *\n@SinceKotlin("1.3")\npublic actual fun <R, T> (suspend R.() ->
T).createCoroutineUnintercepted(\n receiver: R,\n completion: Continuation<T>)\n: Continuation<Unit> =\n //
Kotlin/JS suspend lambdas have an extra parameter `suspended`\n if (this.asDynamic().length == 3) {\n //
When `suspended` is true the continuation is created, but not executed\n this.asDynamic()(receiver, completion,
true)\n } else {\n createCoroutineFromSuspendFunction(completion) {\n this.asDynamic()(receiver,
completion)\n }\n }\n}\n\n/**\n * Intercepts this continuation with [ContinuationInterceptor].\n *\n * This
function shall be used on the immediate result of [createCoroutineUnintercepted] or
[suspendCoroutineUninterceptedOrReturn],\n
* in which case it checks for [ContinuationInterceptor] in the continuation's [context][Continuation.context],\n *
invokes [ContinuationInterceptor.interceptContinuation], caches and returns the result.\n *\n * If this function is
invoked on other [Continuation] instances it returns `this` continuation unchanged.\n
*\n@SinceKotlin("1.3")\npublic actual fun <T> Continuation<T>.intercepted(): Continuation<T> =\n (this as?
CoroutineImpl)?.intercepted() ?: this\n\nprivate inline fun <T> createCoroutineFromSuspendFunction(\n
completion: Continuation<T>,\n crossinline block: () -> Any?\n): Continuation<Unit> {\n
@Suppress("UNCHECKED_CAST")\n return object : CoroutineImpl(completion as Continuation<Any?>) {\n
override fun doResume(): Any? {\n exception?.let { throw it }\n return block()\n }\n
}\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\npackage kotlin.js\n\n// Mirrors signature from JS IR BE\n// Used for
js.translator/testData/box/number/mulInt32.kt\n@library\n@JsName("imulEmulated")\n@Suppress("UNUSED_P
ARAMETER")\ninternal fun imul(x: Int, y: Int): Int =
definedExternally\n\n@Suppress("NOTHING_TO_INLINE")\ninternal inline fun isArrayish(o: dynamic) =
js("Kotlin").isArrayish(o)\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\npackage kotlin\n\n// NOTE: Do not author your exceptions as they are written in
this file, instead use this template:\n\npublic open class MyException : Exception {\n constructor() : super()\n
constructor(message: String?) : super(message)\n constructor(message: String?, cause: Throwable?) :
super(message,
cause)\n constructor(cause: Throwable?) : super(cause)\n}\n\n*\n\n// TODO: remove primary constructors, make
all secondary KT-22055\n\n@Suppress("USELESS_ELVIS_RIGHT_IS_NULL")\npublic actual open class Error
actual constructor(message: String?, cause: Throwable?) : Throwable(message, cause ?: null) {\n actual
constructor() : this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual
constructor(cause: Throwable?) : this(undefi
ned, cause)\n}\n\n@Suppress("USELESS_ELVIS_RIGHT_IS_NULL")\npublic actual open class Exception actual
constructor(message: String?, cause: Throwable?) : Throwable(message, cause ?: null) {\n actual constructor() :
this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefi
ned, cause)\n}\n\npublic actual open class RuntimeException actual constructor(message:
String?, cause: Throwable?) : Exception(message, cause) {\n actual constructor()
: this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefi
ned, cause)\n}\n\npublic actual open class IllegalArgumentException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n actual constructor() :
this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefi
ned, cause)\n}\n\npublic actual open class IllegalStateException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n actual constructor() :
this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefi
ned, cause)\n}\n\npublic actual open class IndexOutOfBoundsException actual

```

```

constructor(message: String?) : RuntimeException(message) {\n  actual constructor() : this(null)\n}\n\npublic
actual open class
  ConcurrentModificationException actual constructor(message: String?, cause: Throwable?) :
  RuntimeException(message, cause) {\n  actual constructor() : this(null, null)\n  actual constructor(message:
  String?) : this(message, null)\n  actual constructor(cause: Throwable?) : this(undefiend, cause)\n}\n\npublic actual
open class UnsupportedOperationException actual constructor(message: String?, cause: Throwable?) :
  RuntimeException(message, cause) {\n  actual constructor() : this(null, null)\n  actual constructor(message:
  String?) : this(message, null)\n  actual constructor(cause: Throwable?) : this(undefiend, cause)\n}\n\npublic
actual open class NumberFormatException actual constructor(message: String?) :
  IllegalArgumentException(message) {\n  actual constructor() : this(null)\n}\n\npublic actual open class
  NullPointerException actual constructor(message: String?) : RuntimeException(message) {\n  actual constructor() :
  this(null)\n}\n\npublic actual open class ClassCastException
  actual constructor(message: String?) : RuntimeException(message) {\n  actual constructor() :
  this(null)\n}\n\npublic actual open class AssertionError\n@SinceKotlin("1.4")\nconstructor(message: String?,
  cause: Throwable?) : Error(message, cause) {\n  actual constructor() : this(null)\n  constructor(message: String?) :
  this(message, null)\n  actual constructor(message: Any?) : this(message.toString(), message as?
  Throwable)\n}\n\npublic actual open class NoSuchElementException actual constructor(message: String?) :
  RuntimeException(message) {\n  actual constructor() : this(null)\n}\n\n@SinceKotlin("1.3")\npublic actual open
class ArithmeticException actual constructor(message: String?) : RuntimeException(message) {\n  actual
  constructor() : this(null)\n}\n\npublic actual open class NoWhenBranchMatchedException actual
  constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n  actual constructor() :
  this(null, null)\n  actual
  constructor(message: String?) : this(message, null)\n  actual constructor(cause: Throwable?) : this(undefiend,
  cause)\n}\n\npublic actual open class UninitializedPropertyAccessException actual constructor(message: String?,
  cause: Throwable?) : RuntimeException(message, cause) {\n  actual constructor() : this(null, null)\n  actual
  constructor(message: String?) : this(message, null)\n  actual constructor(cause: Throwable?) : this(undefiend,
  cause)\n}\n\n/*\n * Copyright 2010-2019 JetBrains s.r.o. Use of this source code is governed by the Apache 2.0
  license\n * that can be found in the license/LICENSE.txt file.\n
  *\n\n@file:Suppress("UNUSED_PARAMETER")\n\npackage kotlin.js\n\n@kotlin.internal.InlineOnly\n\ninternal
  inline fun jsDeleteProperty(obj: Any, property: Any) {\n  js("delete
  obj[property]")\n}\n\n@kotlin.internal.InlineOnly\n\ninternal inline fun jsBitwiseOr(lhs: Any?, rhs: Any?): Int =\n
  js("lhs | rhs").unsafeCast<Int>()", /*\n * Copyright 2010-2018 JetBrains
  s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
  license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.math\n\n/**\n * Returns this value
  with the sign bit same as of the [sign] value.\n * If [sign] is `NaN` the sign of the result is undefined.\n
  *\n\n@SinceKotlin("1.2")\n\npublic actual fun Double.withSign(sign: Double): Double {\n  val thisSignBit =
  js("Kotlin").doubleSignBit(this).unsafeCast<Int>()\n  val newSignBit =
  js("Kotlin").doubleSignBit(sign).unsafeCast<Int>()\n  return if (thisSignBit == newSignBit) this else -
  this\n}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
  this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
  *\n\npackage kotlin\n\n/**\n * Returns a bit representation of the specified floating-point value as [Long]\n *
  according to the IEEE 754 floating-point
  \n"double format" bit layout.\n *\n\n@SinceKotlin("1.2")\n\n@library("doubleToBits")\n\npublic actual fun
  Double.toBits(): Long = definedExternally\n\n/**\n * Returns a bit representation of the specified floating-point
  value as [Long]\n * according to the IEEE 754 floating-point \n"double format" bit layout,\n * preserving `NaN`
  values exact layout.\n *\n\n@SinceKotlin("1.2")\n\n@library("doubleToRawBits")\n\npublic actual fun
  Double.toRawBits(): Long = definedExternally\n\n/**\n * Returns the [Double] value corresponding to a given bit
  representation.\n *\n\n@SinceKotlin("1.2")\n\n@kotlin.internal.InlineOnly\n\npublic actual inline fun

```


Double.Companion.fromBits(bits: Long): Double =

js("Kotlin").doubleFromBits(bits).unsafeCast<Double>()\n\n/**\n * Returns a bit representation of the specified floating-point value as [Int]\n * according to the IEEE 754 floating-point "single format" bit layout.\n * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout

can represent,\n * so some [Float] values may overflow, underflow or lose their accuracy after conversion to bits and back.\n */\n@SinceKotlin("1.2")\n@library("floatToBits")\npublic actual fun Float.toBits(): Int =

definedExternally\n\n/**\n * Returns a bit representation of the specified floating-point value as [Int]\n * according to the IEEE 754 floating-point "single format" bit layout,\n * preserving NaN values exact layout.\n * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout can represent,\n * so some [Float] values may overflow, underflow or lose their accuracy after conversion to bits and back.\n

*/\n@SinceKotlin("1.2")\n@library("floatToRawBits")\npublic actual fun Float.toRawBits(): Int =\ndefinedExternally\n\n/**\n * Returns the [Float] value corresponding to a given bit representation.\n

*/\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Float.Companion.fromBits(bits: Int): Float =

js("Kotlin").floatFromBits(bits).unsafeCast<Float>()\n\n@Suppress("NOTHING_TO_INLINE")\ninternal inline fun Long(low: Int, high: Int) = js("Kotlin").Long.fromBits(low, high).unsafeCast<Long>()\n\ninternal inline val Long.low: Int get() = this.asDynamic().getLowBits().unsafeCast<Int>()\n\ninternal inline val Long.high: Int get() = this.asDynamic().getHighBits().unsafeCast<Int>()\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin

Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\nimport kotlin.reflect.KClass\n\n@PublishedApi\ninternal fun <T : Annotation> KClass<*>.findAssociatedObject(@Suppress("UNUSED_PARAMETER") annotationClass: KClass<T>): Any? {\n // This API is not supported in js-v1. Return `null` to be source-compatible with js-ir.\n return null\n}\n\n"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code

is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage

kotlin.text\n\n/**\n * Returns a string representation of this [Long] value in the specified [radix].\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n

*/\n@SinceKotlin("1.2")\npublic actual fun Long.toString(radix: Int): String =

asDynamic().toString(checkRadix(radix))\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage

kotlin.js\n\n@PublishedApi\n@Suppress("NOTHING_TO_INLINE")\n@JsPolyfill("\n\nnif (typeof

Array.prototype.fill === "undefined") {\n // Polyfill from https://developer.mozilla.org/en-

US/docs/Web/JavaScript/Reference/Global_Objects/Array/fill#Polyfill\n Object.defineProperty(Array.prototype, 'fill', {\n value: function

(value) {\n // Steps 1-2.\n if (this === null) {\n throw new TypeError('this is null or not

defined');\n }\n var O = Object(this);\n // Steps 3-5.\n var len = O.length >>> 0;\n

// Steps 6-7.\n var start = arguments[1];\n var relativeStart = start >> 0;\n // Step 8.\n

var k = relativeStart < 0 ?\n Math.max(len + relativeStart, 0) :\n Math.min(relativeStart,

len);\n // Steps 9-10.\n var end = arguments[2];\n var relativeEnd = end === undefined ?\n

len : end >> 0;\n // Step 11.\n var finalValue = relativeEnd < 0 ?\n

Math.max(len + relativeEnd, 0) :\n Math.min(relativeEnd, len);\n // Step 12.\n

while (k < finalValue) {\n O[k] = value;\n

k++;\n }\n // Step 13.\n return O;\n });\n\n[Int8Array, Int16Array,

Uint16Array, Int32Array, Float32Array, Float64Array].forEach(function (TypedArray) {\n if (typeof

TypedArray.prototype.fill === "undefined") {\n Object.defineProperty(TypedArray.prototype, 'fill', {\n

value: Array.prototype.fill\n });\n });\n\n"/*\n */\n\ninternal inline fun Any.nativeFill(element: Any?, fromIndex:

Int, toIndex: Int): Unit {\n asDynamic().fill(element, fromIndex, toIndex)\n}\n\n"/*\n * Copyright 2010-2021


```

xmGxmGmxRxGRFIRRjmmFIIGYRmmIRFIIRIRFRFIIRFxxGFIGmmRoxImxRFRFIIGmxRJ4aRFGxmIoRFlxRlXR
FRFIIRFxxGIIImoGmmRxoIxoIGRmmIRxlFlmGRJ8FLRxmFFRFIIRIRxxFIRlxRxlFRFRFRooGRIooRomRxFRIR
JLc8aRmoIoGFIIIRIRFRFRImGmoIooRGRGRxmGFRFIIGmxRJRyL8IGooYFIIRIRFRFRFRmIIXGooRGRIRlxFG
RjXlFRGIFIIIRIRFlmGIGxIooRomF8xRxxFIILFGRJLcFxmIoRFRFRFxIRFRxxGxxIooGmmRRIRJxxIoYRFIIIGG
RaFEGYJYRxIFRFRFIRFIIGlXRFxEGRJRFRFcY84c8mGcJL8G1WIFRFRGIGmmYFGRGRcGc88RYcYRFIGI
GmmIomGFJYFooGmlFIIGmmFIFIFGFmoIGIomFJIm8cBhRrxxBC4ECFRFRFIRFRFRFRFRFRFRFRFRFRFRFRFR
FRGYLRFCRBRCxxUF8YFMF1WRFYKFRFRFRGFRGFRFIIRIRGRFmmIGIooGGY44E46FmxRJRLRY44
U44GmmQRJRFEFRFGFGRFRFxGmoIooGmoIoxRxxIoGIGRxxcx4YJFRFRFRFRJLRcFmmIomRx4YFoGG
mRomIGIGmxRJRJRyEYRGmmHRGIFmIGmIooGFRJYcGcRmmIFomGmmIomGmlFJFmoGooGGIRYFIGIG
RYJRJFJFEYCRBRBYRGYGIGFGFIIGomGFRCECECEGRGHCCiBCBCRBRCBCBCRBRCxBCBCRCDCCDCD
CiiRBj7CbCiiRBj7b7iCiiRxiCBRbCbBxxCiiRBj7bRMQUY9+V9+VYtOQMY9eY43X44Z1WY54XYMQRQRER
LZ12ELZ12RERaRGHGHR88B88BihBhiChhC8hcZbC8BB8CBCFi8cihBZBC8Z8CLKhCKr8cRZcZc88ZcZc85
Z8ZcZc1WcZc1WcZcZcZcRcRLcLcZcZcZcZc1WLcZ1WZ1WZcZ1WZ1WZ1WZcZcZcRcRcBRCixBBCiBBihC
CEBhCCChCGhCRY44LCiRRxxCFRkYRGFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFR
48cRcRcRcRcRs4Y48EIK1Wc1W12U2cKGooUE88KqEl4c8RFxxGm7bkfUF4kEkFRFRFRx8cLcFcRcRcLcLc
LcLcLcLcFRFEFRcRFEYFEYFJRhClmHnnYG4EhCEGFKGYRbEbCCiBECiBhCK7bhClBihCiBBCBhCRhiBh
hCCRhiFkkCFIIGIIGIFooGmlcGRL88aRFYRIFIGRYJRGFY14FGJFGYFGIRYFRGIFmoIGIGIYxEJRYFmEFJ
FRFGmoImoIGRFGFmIRJRyFEFcloGIFmlGmlFGFImGFRFIIEYFomGo4YlkEoGRFRFRFRFRFRFRcBECk7bRCFo
oG4oGRJRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFRFR
44U1WY50Z5R46YRFRFRxxQY44a41W54UYJZYB14W7XC15WZ12YFEFEFRFRFRFRFlxRIIRxxa65b86axcZc
RQcR"

```

```

decodedRangeCategory = decodeVarLenBase64(rangeCategory, fromBase64, 1343)
}
}

private fun
categoryValueFrom(code: Int, ch: Int): Int {
    return when {
        code < 0x20 -> code
        code < 0x400 -> if
            ((ch and 1) == 1) code shr 5 else code and 0x1f
        else -> when (ch % 3) {
            2 -> code shr
                10
            1 -> (code
                shr 5) and 0x1f
            else -> code and 0x1f
        }
    }
}

/**
 * Returns the Unicode general
 * category of this character as an Int.
 */
internal fun Char.getCategoryValue(): Int {
    val ch = this.code
    val index = binarySearchRange(Category.decodedRangeStart, ch)
    val start = Category.decodedRangeStart[index]
    val code = Category.decodedRangeCategory[index]
    val value = categoryValueFrom(code, ch - start)
    return if (value == 17) CharCategory.UNASSIGNED.value else value
}

internal fun
decodeVarLenBase64(base64: String, fromBase64: IntArray, resultLength: Int): IntArray {
    val result =
        IntArray(resultLength)
    var index = 0
    var int = 0
    var shift = 0
    for (char in base64) {
        val sixBit =
            fromBase64[char.code]
        int = int or ((sixBit and 0x1f) shl shift)
        if (sixBit < 0x20) {
            result[index++] = int
            int = 0
            shift = 0
        } else {
            shift
                += 5
        }
    }
    return result
}

"
"/

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Language contributors.
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license/LICENSE.txt file.

package kotlin.collections

NOTE: THIS FILE IS AUTO-GENERATED
by the GenerateStandardLib.kt
See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib

import
kotlin.js.*
import kotlin.ranges.contains
import kotlin.ranges.reversed

/**
 * Reverses elements in the list in-
place.
 */
public actual fun <T> MutableList<T>.reverse(): Unit {
    val midPoint = (size / 2) - 1
    if
        (midPoint < 0) return
    var reverseIndex = lastIndex
    for (index in 0..midPoint) {
        val tmp = this[index]
        this[index] = this[reverseIndex]
        this[reverseIndex] = tmp
        reverseIndex--
    }
}

"
"/

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package kotlin.text

NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt
See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib

// 37 ranges totally
private object Digit {
    internal val rangeStart = intArrayOf(
        0x0030, 0x0660, 0x06f0, 0x07c0, 0x0966, 0x09e6, 0x0a66,
        0x0ae6, 0x0b66, 0x0be6, 0x0c66, 0x0ce6, 0x0d66, 0x0de6, 0x0e50, 0x0ed0, 0x0f20, 0x1040, 0x1090, 0x17e0,

```

```

0x1810, 0x1946, 0x19d0, 0x1a80, 0x1a90, 0x1b50, 0x1bb0, 0x1c40, 0x1c50, 0xa620, 0xa8d0, 0xa900, 0xa9d0,
0xa9f0, 0xaa50, 0xabf0, 0xff10, \n )\n}\n\n/**\n * Returns the index of the largest element in [array] smaller or
equal to the specified [needle],\n * or -1 if [needle] is smaller than the smallest element in [array].\n */\ninternal fun
binarySearchRange(array: IntArray, needle: Int): Int {\n    var bottom = 0\n    var top = array.size - 1\n    var middle = -1\n    var value = 0\n    while (bottom <= top) {\n        middle = (bottom
+ top) / 2\n        value = array[middle]\n        if (needle > value)\n            bottom = middle + 1\n        else if (needle
== value)\n            return middle\n        else\n            top = middle - 1\n    }\n    return middle - (if (needle < value) 1
else 0)\n}\n\n/**\n * Returns an integer from 0..9 indicating the digit this character represents,\n * or -1 if this
character is not a digit.\n */\ninternal fun Char.digitToIntImpl(): Int {\n    val ch = this.code\n    val index =
binarySearchRange(Digit.rangeStart, ch)\n    val diff = ch - Digit.rangeStart[index]\n    return if (diff < 10) diff else -
1\n}\n\n/**\n * Returns `true` if this character is a digit.\n */\ninternal fun Char.isDigitImpl(): Boolean {\n    return
digitToIntImpl() >= 0\n}\n", "/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source
code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.text\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n// 222 ranges totally\n\nprivate object Letter {\n    val
decodedRangeStart: IntArray\n    val decodedRangeLength: IntArray\n    val decodedRangeCategory: IntArray\n    \n    init {\n        val toBase64 =
\"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/\n        val fromBase64 =
IntArray(128)\n        for (i in toBase64.indices) {\n            fromBase64[toBase64[i].code] = i\n        }\n        \n        //
rangeStartDiff.length = 356\n        val rangeStartDiff =
\"hCgBpCQGYHZH5BRpBPPPPPRMP5BPPICPP6BkEPPPPcPXPzBvBrB3BOiDoBHwD+E3DauCnFmBmB2D
6E1BIBTiBmBIBP5BhBiBrBvBjBqBnBPRtBiCmCtBIB0BmB5BiB7BmBgEmChBzGCoEoGVpBSfRhBPqKQ2B
wBYoFgB4CJuTiEvBuCuDrF5DgEgFIJ1DgFmBQtBsBRGsB+BPiBID1EIjDPRPPPPPPPPPGQSQS/DxENVNU+
B9zCwBwBPPCkDPNnBPqDYY1R8B7FkFgTgwGgwUwmBgKwBuBScmEP/BPPPPPPrBP8B7F1B/ErBqC6B7B
iBmBfQsBUwCw/KwqIwLwETPcPjQgJxfgBIBsD\"\n        val diff = decodeVarLenBase64(rangeStartDiff, fromBase64, 222)\n        val start = IntArray(diff.size)\n
for (i in diff.indices) {\n            if (i == 0) start[i] = diff[i]\n            else start[i] = start[i - 1] + diff[i]\n        }\n        decodedRangeStart = start\n        \n        // rangeLength.length = 328\n        val rangeLength =
\"aaMBXHYH5BRpBPPPPPRMP5BPPICPPzBDOOPPcPXPzBvBjB3BOhDmBBpB7DoDYxB+EiBP1DoExBkB
QhBekBPmBgBhBctBiBMWOOXhCsBpBkBUV3Ba4BkB0D1CgBXgBtD4FSdBfPhBpKP0BvBxJEq2CGsT8Dh
BtCqDpFvD1D3E0IrD2EkBJrBDOBsB+BPiBIB1EIjDPPPPPPPPPPPGPPMNLsBNPNPKCvBvBPPCkDPBmBPh
DXXgD4B6FzEgDguG9vUtkB9JcuBSckEP/BPPPPPPBPf4FrBjEhBpC3B5BKaWPrBOWCk/KsCuLqDHPbPxPsFt
EaaqDL\"\n        decodedRangeLength = decodeVarLenBase64(rangeLength, fromBase64, 222)\n        \n        //
rangeCategory.length = 959\n        val rangeCategory =
\"GFjgggUHGGFFZZZmzpz5qB6s6020B60ptltB6smt2sB60mz22B1+vv+8BZZ5s2850BW5q1ymtB506smzBF3q1
q1qB1q1q1+Bgii4wDTm74g3KigxqM60q1q1Bq1o1q1BF1qlrqrBZ2q5wprBGFZWWZGHFsjiioLowgmOowjkw
CkgoiIk7ligGogioBkwkiYkzj2oNoi+sbkwj04DghhkQ8wgiYkgoioDsgnkwC4gikQ//v+85BkwvoIsgoyI4ygu0whiw
Eowri4CoghsJowgqYowgm4DkwgsY/nwnzPowhmYkg6wI8yggZswikwHgxgmIoxgqYkkgk4DkxgmIkgoioBsgsso
BgzyI8g9gL8g9ki0wgwJoxgkoC0wgioFkw/wI0w53iF4gioYowjmgBHGq1qkgwBF1q1q8qBHwghuIwghyKk0go
QkwgoQk3goQHGFHkyg0pBgxj6IoinkxDswno7Ikwhz9Bo0gioB8z48Rwli0xN0mpjoX8w78pDwltoqKHFGGwwg
sIHFH3q1q16BFHWFZ1q10q1B2qlwq1B1q10q1B2q1yq1B6q1gq1Biq1qhxBir1qp1Bqt1q1qB1g1q1+B//3q16B///q
1qBH/qlq9Bholq9B1i00a1q10qD1op1HkwmigEigy6Cptogq1Bixo1kDq7/j00B2qgoBWGFm1lz50B6s5q1+BG
WhggzhwBFFhgk4//Bo2jigE8wguI8wguI8wgugUog1qoB4qjmIwwi2KkgYHHH4IBgiFWkgIWoghssMmz5smrBZ
3q1y50B5sm7gzBtz1smzB5smz50Bqzqtmb5sgzqzBF2//9//5BowgoIwmnkzPkwgk4C8ys65BkgoqI0wgy6FghquZo
2giY0ghiIsgH24B4ghsQ8QF/v1q1OFs008iCHHF1qggz/B8wg6Iznv+//B08QgohsJK0QGFk7hsQ4gB\"\n        decodedRangeCategory = decodeVarLenBase64(rangeCategory,

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fromBase64, 222)\n } \n\n/**\n * Returns `true` if this character is a letter.\n */\ninternal fun
Char.isLetterImpl(): Boolean {\n    return getLetterType() != 0\n}\n\n/**\n * Returns `true` if this character is a
lower case letter, or it has contributory property `Other_Lowercase`.\n */\ninternal fun Char.isLowerCaseImpl():
Boolean {\n    return getLetterType() == 1 || code.isOtherLowercase()\n}\n\n/**\n * Returns `true` if this character is
an upper case letter, or it has contributory property `Other_Uppercase`.\n */\ninternal fun Char.isUpperCaseImpl():
Boolean {\n    return getLetterType() == 2 || code.isOtherUppercase()\n}\n\n/**\n * Returns\n * - `1` if the
character is a lower case letter,\n * - `2` if the character is an upper case letter,\n * - `3` if the character is a letter
but not a lower or upper case letter,\n * - `0` otherwise.\n */\nprivate fun Char.getLetterType(): Int {\n    val ch =
this.code\n    val index = binarySearchRange(Letter.decodedRangeStart,
ch)\n    val rangeStart = Letter.decodedRangeStart[index]\n    val rangeEnd = rangeStart +
Letter.decodedRangeLength[index] - 1\n    val code = Letter.decodedRangeCategory[index]\n    if (ch > rangeEnd)
{\n        return 0\n    }\n    val lastTwoBits = code and 0x3\n    if (lastTwoBits == 0) { // gap pattern\n        var
shift = 2\n        var threshold = rangeStart\n        for (i in 0..1) {\n            threshold += (code shr shift) and 0x7f\n
            if (threshold > ch) {\n                return 3\n            }\n            shift += 7\n            threshold += (code shr shift) and
0x7f\n            if (threshold > ch) {\n                return 0\n            }\n            shift += 7\n        }\n        return 3\n    }\n    if (code <= 0x7) {\n        return lastTwoBits\n    }\n    val distance = (ch - rangeStart)\n    val shift = if (code <=
0x1F) distance % 2 else distance\n    return (code shr (2 * shift)) and 0x3\n}\n\n"/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE:
THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nprivate object OtherLowercase {\n    internal
val otherLowerStart = intArrayOf(\n        0x00aa, 0x00ba, 0x02b0, 0x02c0, 0x02e0, 0x0345, 0x037a, 0x1d2c,
0x1d78, 0x1d9b, 0x2071, 0x207f, 0x2090, 0x2170, 0x24d0, 0x2c7c, 0xa69c, 0xa770, 0xa7f8, 0xab5c, \n    )\n    internal val otherLowerLength = intArrayOf(\n        1, 1, 9, 2, 5, 1, 1, 63, 1, 37, 1, 1, 13, 16, 26, 2, 2, 1, 2, 4, \n    )\n}\n\ninternal fun Int.isOtherLowercase(): Boolean {\n    val index =
binarySearchRange(OtherLowercase.otherLowerStart, this)\n    return index >= 0 && this <
OtherLowercase.otherLowerStart[index] + OtherLowercase.otherLowerLength[index]\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.text\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\ninternal fun Int.isOtherUppercase(): Boolean
{\n    return this in 0x2160..0x216f\n        || this in 0x24b6..0x24cf\n}\n\n"/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE: THIS FILE IS
AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js.*\n\n/**\n * Returns a
character at the given [index] or throws an [IndexOutOfBoundsException]
if the [index] is out of bounds of this char sequence.\n */\n\n @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun CharSequence.elementAt(index: Int):
Char {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, length:
$length") }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n// 4 ranges
totally\ninternal fun Char.titlecaseCharImpl(): Char {\n    val code = this.code\n    // Letters repeating <Lu, Lt, Ll>
sequence and code of the Lt is a multiple of 3, e.g. <\u01c4, \u01c5, \u01c6>\n    if (code in 0x01c4..0x01cc || code
in 0x01f1..0x01f3) {\n        return

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        (3 * ((code + 1) / 3)).toChar()\n    }\n    // Lower case letters whose title case mapping equivalent is equal to the
original letter\n    if (code in 0x10d0..0x10fa || code in 0x10fd..0x10ff) {\n        return this\n    }\n    return
uppercaseChar()\n}", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED
by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport
kotlin.js.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun UIntArray.elementAt(index: Int): UInt {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, size: $size") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun ULongArray.elementAt(index: Int):
ULong {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun UByteArray.elementAt(index: Int):
UByte {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index,
size: $size") }\n}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException]
if the [index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun UShortArray.elementAt(index: Int):
UShort {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun UIntArray.asList(): List<UInt> {\n
return object : AbstractList<UInt>(), RandomAccess {\n    override val size: Int get() = this@asList.size\n
override fun isEmpty(): Boolean = this@asList.isEmpty()\n    override fun contains(element: UInt): Boolean =
this@asList.contains(element)\n    override fun get(index: Int): UInt {\n
AbstractList.checkElementIndex(index, size)\n
        return this@asList[index]\n    }\n    override fun indexOf(element: UInt): Int {\n
@Suppress("USELESS_CAST")\n        if ((element as Any?) !is UInt) return -1\n        return
this@asList.indexOf(element)\n    }\n    override fun lastIndexOf(element: UInt): Int {\n
@Suppress("USELESS_CAST")\n        if ((element as Any?) !is UInt) return -1\n        return
this@asList.lastIndexOf(element)\n    }\n}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun ULongArray.asList(): List<ULong>
{\n    return object : AbstractList<ULong>(), RandomAccess {\n    override val size: Int get() = this@asList.size\n
override fun isEmpty(): Boolean = this@asList.isEmpty()\n    override fun contains(element: ULong):
Boolean = this@asList.contains(element)\n    override fun get(index: Int): ULong {\n
AbstractList.checkElementIndex(index,
size)\n        return this@asList[index]\n    }\n    override fun indexOf(element: ULong): Int {\n
@Suppress("USELESS_CAST")\n        if ((element as Any?) !is ULong) return -1\n        return
this@asList.indexOf(element)\n    }\n    override fun lastIndexOf(element: ULong): Int {\n
@Suppress("USELESS_CAST")\n        if ((element as Any?) !is ULong) return -1\n        return
this@asList.lastIndexOf(element)\n    }\n}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
actual fun UByteArray.asList(): List<UByte>
{\n    return object : AbstractList<UByte>(), RandomAccess {\n    override val size: Int get() = this@asList.size\n
override fun isEmpty(): Boolean = this@asList.isEmpty()\n    override fun contains(element: UByte): Boolean

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= this@asList.contains(element)\n    override fun get(index: Int): UByte {\n
        AbstractList.checkElementIndex(index, size)\n        return this@asList[index]\n    }\n    override fun
indexOf(element: UByte): Int {\n        @Suppress("USELESS_CAST")\n        if ((element as Any?) !is
UByte) return -1\n        return this@asList.indexOf(element)\n    }\n    override fun lastIndexOf(element:
UByte): Int {\n        @Suppress("USELESS_CAST")\n        if ((element as Any?) !is UByte) return -1\n
return this@asList.lastIndexOf(element)\n    }\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * public actual fun UShortArray.asList(): List<UShort>
{\n    return object : AbstractList<UShort>(), RandomAccess {\n        override val size: Int get() = this@asList.size\n
        override fun isEmpty(): Boolean = this@asList.isEmpty()\n        override fun contains(element: UShort):
Boolean = this@asList.contains(element)\n        override
fun get(index: Int): UShort {\n            AbstractList.checkElementIndex(index, size)\n            return
this@asList[index]\n        }\n        override fun indexOf(element: UShort): Int {\n            @Suppress("USELESS_CAST")\n            if ((element as Any?) !is UShort) return -1\n            return
this@asList.indexOf(element)\n        }\n        override fun lastIndexOf(element: UShort): Int {\n            @Suppress("USELESS_CAST")\n            if ((element as Any?) !is UShort) return -1\n            return
this@asList.lastIndexOf(element)\n        }\n    }\n}\n\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n * package kotlin.text\n * \n * // NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateUnicodeData.kt\n * // See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n * \n * // 9 ranges totally\n * \n * \n * Returns `true` if this character is a whitespace.\n * \n * internal fun Char.isWhitespaceImpl(): Boolean {\n    val ch =
this.code\n    return ch in 0x0009..0x000d\n        || ch in 0x001c..0x0020\n        || ch == 0x00a0\n        || ch >
0x1000 && (\n            ch == 0x1680\n            || ch in 0x2000..0x200a\n            || ch == 0x2028\n            ||
ch == 0x2029\n            || ch == 0x202f\n            || ch == 0x205f\n            || ch == 0x3000\n        )\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this
source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n * \n * package kotlin\n * \n * \n * public actual fun interface Comparator<T> {\n    @JsName("compare")\n    public actual
fun compare(a: T, b: T): Int\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n * \n * package
kotlin.js\n * \n * import kotlin.annotation.AnnotationTarget.*\n * \n * @Target(FUNCTION)\n * @Deprecated("Use inline
extension function with body using dynamic")\n * \n * public annotation class
nativeGetter\n * \n * @Target(FUNCTION)\n * @Deprecated("Use inline extension function with body using
dynamic")\n * \n * public annotation class nativeSetter\n * \n * @Target(FUNCTION)\n * @Deprecated("Use inline extension
function with body using dynamic")\n * \n * public annotation class nativeInvoke\n * \n * @Target(CLASS, FUNCTION,
PROPERTY)\n * \n * internal annotation class library(public val name: String = "")\n * \n * @Target(CLASS)\n * \n * internal
annotation class marker\n * \n * /**\n * \n * * Gives a declaration (a function, a property or a class) specific name in
JavaScript.\n * \n * * This may be useful in the following cases:\n * \n * * * There are two functions for which the
compiler gives same name in JavaScript, you can\n * \n * * * mark one with `@JsName(...)` to prevent
the compiler from reporting error.\n * \n * * * You are writing a JavaScript library in Kotlin. The compiler produces
mangled names\n * \n * * * for functions with parameters, which is unnatural for usual JavaScript developer.\n * \n * * * You
can put `@JsName(...)` on functions you want to be available from JavaScript.\n * \n * * * For some reason you want to
rename declaration, e.g. there's common term in JavaScript\n * \n * * * for a concept provided by the declaration, which
is uncommon in Kotlin.\n * \n * * * Example:\n * \n * * * ``` kotlin\n * \n * * class Person(val name: String) {\n * \n * *     fun hello()\n * \n * *     println("Hello $name!")\n * \n * *     }\n * \n * *     @JsName("helloWithGreeting")\n * \n * *     fun hello(greeting:
String) {\n * \n * *         println("$greeting $name!")\n * \n * *     }\n * \n * * }\n * \n * * ```\n * \n * * \n * \n * * @property name the name which
compiler uses both for declaration itself and for all references to the declaration.\n * \n * *     It's required to denote a
valid JavaScript identifier.\n * \n * * \n * \n * @Retention(AnnotationRetention.BINARY)\n * \n * @Target(CLASS,

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FUNCTION, PROPERTY, CONSTRUCTOR, PROPERTY_GETTER, PROPERTY_SETTER)\npublic actual annotation class JsName(actual val name: String)\n\n**\n * Denotes an `external` declaration that must be imported from native JavaScript library.\n\n * The compiler produces the code relevant for the target module system, for example, in case of CommonJS,\n\n * it will import the declaration via the `require(...)` function.\n\n * The annotation can be used on top-level external declarations (classes, properties, functions) and files.\n\n * In case of file (which can't be `external`) the following rule applies: all the declarations in\n\n * the file must be `external`. By applying `@JsModule(...)` on a file you tell the compiler to import a JavaScript object\n\n * that contain all the declarations from the file.\n\n * Example:\n\n * ``` kotlin\n\n * @JsModule("jquery")\n\n * external abstract class JQuery() {\n\n * // some declarations here\n\n * }\n\n * @JsModule("jquery")\n\n * external fun JQuery(element: Element): JQuery\n\n * ```\n\n * \n\n * @property import name of a module to import declaration from.\n\n * It is not interpreted by the Kotlin compiler, it's passed as is directly to the target module system.\n\n * @see JsNonModule\n\n * \n\n * @Retention(AnnotationRetention.BINARY)\n\n * @Target(CLASS, PROPERTY, FUNCTION, FILE)\n\n\npublic annotation class JsModule(val import: String)\n\n\n**\n\n * Denotes an `external` declaration that can be used without module system.\n\n * By default, an `external` declaration is available regardless your target module system.\n\n * However, by applying [JsModule] annotation you can make a declaration unavailable to *plain* module system.\n\n * Some JavaScript libraries are distributed both as a standalone downloadable piece of JavaScript and as a module available\n\n * as an npm package.\n\n * To tell the Kotlin compiler to accept both cases, you can augment [JsModule] with the `@JsNonModule` annotation.\n\n * For example:\n\n * ``` kotlin\n\n * @JsModule("jquery")\n\n * @JsNonModule\n\n * @JsName("\$")\n\n * external abstract class JQuery() {\n\n * // some declarations here\n\n * }\n\n * @JsModule("jquery")\n\n * @JsNonModule\n\n * @JsName("\$")\n\n * external fun JQuery(element: Element): JQuery\n\n * ```\n\n * \n\n * @see JsModule\n\n * \n\n * @Retention(AnnotationRetention.BINARY)\n\n * @Target(CLASS, PROPERTY, FUNCTION, FILE)\n\n\npublic annotation class JsNonModule\n\n\n**\n\n * Adds prefix to `external` declarations in a source file.\n\n * JavaScript does not have concept of packages (namespaces). They are usually emulated by nested objects.\n\n * The compiler turns references to `external` declarations either to plain unprefix names (in case of *plain* modules)\n\n * or to plain imports.\n\n * However, if a JavaScript library provides its declarations in packages, you won't be satisfied with this.\n\n * You can tell the compiler to generate additional prefix before references to `external` declarations using the `@JsQualifier(...)`\n\n * annotation.\n\n * Note that a file marked with the `@JsQualifier(...)` annotation can't contain non-`external` declarations.\n\n * Example:\n\n * ``` kotlin\n\n * @file:JsQualifier("my.jsPackageName")\n\n * package some.kotlinPackage\n\n * external fun foo(x: Int)\n\n * external fun bar(): String\n\n * ```\n\n * \n\n * @property value the qualifier to add to the declarations in the generated code.\n\n * It must be a sequence of valid JavaScript identifiers separated by the `.` character.\n\n * Examples of valid qualifiers are: `foo`, `bar.Baz`, `_.\$.f`.\n\n * \n\n * @see JsModule\n\n * \n\n * @Retention(AnnotationRetention.BINARY)\n\n * @Target(AnnotationTarget.FILE)\n\n\npublic annotation class JsQualifier(val value: String)\n\n\n**\n\n * Exports top-level declaration on JS platform.\n\n * Compiled module exposes declarations that are marked with this annotation without name mangling.\n\n * This annotation can be applied to either files or top-level declarations.\n\n * It is currently prohibited to export the following kinds of declarations:\n\n * * `expect` declarations\n\n * * inline functions with reified type parameters\n\n * * suspend functions\n\n * * secondary constructors without `@JsName`\n\n * * extension properties\n\n * * enum classes\n\n * * annotation classes\n\n * Signatures of exported declarations must only contain `exportable` types:\n\n * * `dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`, `Double`\n\n * * `BooleanArray`, `ByteArray`, `ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`\n\n * * `Array<exportable-type>`\n\n * * Function types with exportable parameters and return types\n\n * * `external` or `@JsExport` classes and interfaces\n\n * * Nullable counterparts of types above\n\n * * Unit return type. Must not be nullable\n\n * This annotation is experimental, meaning that restrictions mentioned above are subject to change.\n\n * \n\n * @ExperimentalJsExport\n\n * @Retention(AnnotationRetention.BINARY)\n\n * @Target(CLASS, PROPERTY, FUNCTION, FILE)\n\n * @SinceKotlin("1.3")\n\n\npublic actual annotation class JsExport\n\n\n**\n\n * Forces a top-level property to be initialized eagerly, opposed to lazily on the first access to file and/or property.\n\n


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*\n@ExperimentalStdlibApi\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.PROPER
TY)\n@SinceKotlin("1.6")\n@Deprecated("This annotation is a temporal migration assistance and may be
removed in the future releases, please consider filing an issue about the case where it is needed")\npublic annotation
class EagerInitialization\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin.jvm\n\n// these are used in common generated code in stdlib\n\n//
TODO: find how to deprecate these
ones\n\n@Target(AnnotationTarget.FIELD)\n@Retention(AnnotationRetention.SOURCE)\npublic actual
annotation class Volatile\n\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY_GETTER,
AnnotationTarget.PROPERTY_SETTER)\n@Retention(AnnotationRetention.SOURCE)\npublic actual annotation
class Synchronized\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the
[MutableCollection] interface.\n *\n * @param E the type of elements contained in the collection. The collection is
invariant in its element type.\n */\npublic actual abstract class AbstractMutableCollection<E> protected actual
constructor() : AbstractCollection<E>(), MutableCollection<E> {\n\n    actual abstract override fun add(element: E):
Boolean\n\n    actual override fun remove(element: E): Boolean {\n        checkIsMutable()\n        val iterator =
iterator()\n        while
(iterator.hasNext()) {\n            if (iterator.next() == element) {\n                iterator.remove()\n                return true\n
            }\n        }\n        return false\n    }\n\n    actual override fun addAll(elements: Collection<E>): Boolean {\n
checkIsMutable()\n        var modified = false\n        for (element in elements) {\n            if (add(element)) modified =
true\n        }\n        return modified\n    }\n\n    actual override fun removeAll(elements: Collection<E>): Boolean {\n
checkIsMutable()\n        return (this as MutableIterable<E>).removeAll { it in elements }\n    }\n\n    actual
override fun retainAll(elements: Collection<E>): Boolean {\n        checkIsMutable()\n        return (this as
MutableIterable<E>).removeAll { it !in elements }\n    }\n\n    actual override fun clear(): Unit {\n
checkIsMutable()\n        val iterator = this.iterator()\n        while (iterator.hasNext()) {\n            iterator.next()\n
iterator.remove()\n        }\n    }\n\n    @Deprecated("Provided so that subclasses inherit this function", level =
DeprecationLevel.HIDDEN)\n    @JsName("toJSON")\n    protected fun toJSON(): Any = this.toArray()\n\n\n    /**\n     * This method is called every time when a mutating method is called on this mutable collection.\n     *
Mutable collections that are built (frozen) must throw `UnsupportedOperationException`.\n     */\n    internal open
fun checkIsMutable(): Unit { }\n}\n\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin.collections\n\n/**\n * Based on GWT AbstractList\n * Copyright 2007 Google
Inc.\n */\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the [MutableList]
interface.\n *\n * @param E the type of elements contained in the list. The list is invariant in its element type.\n
*/\npublic
actual abstract class AbstractMutableList<E> protected actual constructor() : AbstractMutableCollection<E>(),
MutableList<E> {\n    protected var modCount: Int = 0\n\n    abstract override fun add(index: Int, element: E):
Unit\n\n    abstract override fun removeAt(index: Int): E\n\n    abstract override fun set(index: Int, element: E): E\n\n
    /**\n     * Adds the specified element to the end of this list.\n     *\n     * @return `true` because the list is always
modified as the result of this operation.\n     */\n    actual override fun add(element: E): Boolean {\n
checkIsMutable()\n        add(size, element)\n        return true\n    }\n\n    actual override fun addAll(index: Int,
elements: Collection<E>): Boolean {\n        AbstractList.checkPositionIndex(index, size)\n\n        checkIsMutable()\n
        var _index = index\n        var changed = false\n        for (e in elements) {\n            add(_index++, e)\n
            changed = true\n        }\n        return changed\n    }\n\n    actual override fun clear() {\n        checkIsMutable()\n
        removeRange(0, size)\n    }\n\n    actual override fun removeAll(elements: Collection<E>): Boolean {\n
checkIsMutable()\n        return removeAll { it in

```

```

elements } \n } \n actual override fun retainAll(elements: Collection<E>): Boolean { \n checkIsMutable() \n
return removeAll { it !in elements } \n } \n actual override fun iterator(): MutableIterator<E> =
IteratorImpl() \n actual override fun contains(element: E): Boolean = indexOf(element) >= 0 \n actual
override fun indexOf(element: E): Int { \n for (index in 0..lastIndex) { \n if (get(index) == element) { \n
return index \n } \n } \n return -1 \n } \n actual override fun lastIndexOf(element: E): Int { \n
for (index in lastIndex downTo 0) { \n if (get(index) == element) { \n return index \n } \n
} \n return
-1 \n } \n actual override fun listIterator(): MutableListIterator<E> = listIterator(0) \n actual override fun
listIterator(index: Int): MutableListIterator<E> = ListIteratorImpl(index) \n actual override fun
subList(fromIndex: Int, toIndex: Int): MutableList<E> = SubList(this, fromIndex, toIndex) \n /** \n * Removes
the range of elements from this list starting from [fromIndex] and ending with but not including [toIndex]. \n */ \n
protected open fun removeRange(fromIndex: Int, toIndex: Int) { \n val iterator = listIterator(fromIndex) \n
repeat(toIndex - fromIndex) { \n iterator.next() \n iterator.remove() \n } \n } \n /** \n *
Compares this list with another list instance with the ordered structural equality. \n */ \n * @return true, if [other]
instance is a [List] of the same size, which contains the same elements in the same order. \n */ \n override fun
equals(other: Any?): Boolean { \n if (other
=== this) return true \n if (other !is List<*>) return false \n return AbstractList.orderedEquals(this,
other) \n } \n /** \n * Returns the hash code value for this list. \n */ \n override fun hashCode(): Int =
AbstractList.orderedHashCode(this) \n private open inner class IteratorImpl : MutableIterator<E> { \n /**
the index of the item that will be returned on the next call to [next]() \n */ \n protected var index = 0 \n /** the
index of the item that was returned on the previous call to [next]() \n * or [ListIterator.previous]() (for
`ListIterator`), \n * -1 if no such item exists \n */ \n protected var last = -1 \n override fun
hasNext(): Boolean = index < size \n override fun next(): E { \n if (!hasNext()) throw
NoSuchElementException() \n last = index++ \n return get(last) \n } \n override fun remove()
{ \n check(last != -1) { "Call
next() or previous() before removing element from the iterator." } \n removeAt(last) \n index = last \n
last = -1 \n } \n } \n /** \n * Implementation of `MutableListIterator` for abstract lists. \n */ \n
private inner class ListIteratorImpl(index: Int) : IteratorImpl(), MutableListIterator<E> { \n init { \n
AbstractList.checkPositionIndex(index, this@AbstractMutableList.size) \n this.index = index \n } \n
override fun hasPrevious(): Boolean = index > 0 \n override fun nextIndex(): Int = index \n override fun
previous(): E { \n if (!hasPrevious()) throw NoSuchElementException() \n last = --index \n
return get(last) \n } \n override fun previousIndex(): Int = index - 1 \n override fun add(element: E)
{ \n add(index, element) \n index++ \n last = -1 \n } \n override fun set(element:
E) { \n check(last != -1) { "Call next() or previous() before updating element value with the iterator." } \n
set(last, element) \n } \n } \n private class SubList<E>(private val list: AbstractMutableList<E>, private
val fromIndex: Int, toIndex: Int) : AbstractMutableList<E>(), RandomAccess { \n private var _size: Int = 0 \n
init { \n AbstractList.checkRangeIndexes(fromIndex, toIndex, list.size) \n this._size = toIndex -
fromIndex \n } \n override fun add(index: Int, element: E) { \n
AbstractList.checkPositionIndex(index, _size) \n list.add(fromIndex + index, element) \n _size++ \n
} \n override fun get(index: Int): E { \n AbstractList.checkElementIndex(index, _size) \n return
list[fromIndex + index] \n } \n override fun removeAt(index: Int): E { \n
AbstractList.checkElementIndex(index, _size) \n
val result = list.removeAt(fromIndex + index) \n _size-- \n return result \n } \n override fun
set(index: Int, element: E): E { \n AbstractList.checkElementIndex(index, _size) \n return
list.set(fromIndex + index, element) \n } \n override val size: Int get() = _size \n internal override fun
checkIsMutable(): Unit = list.checkIsMutable() \n } \n } \n /** \n * Copyright 2010-2020 JetBrains s.r.o. and
Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file. \n */ \n /** \n * Based on GWT AbstractMap \n * Copyright 2007

```

Google Inc.
 Provides a skeletal implementation of the [MutableMap] interface.
 The implementor is required to implement [entries] property, which should return mutable set of map entries, and [put] function.
 @param K the type of map keys.

The map is invariant in its key type.
 @param V the type of map values. The map is invariant in its value type.

```

public actual abstract class AbstractMutableMap<K, V> protected actual constructor() : AbstractMap<K, V>(),
MutableMap<K, V> {
    /**
     * A mutable [Map.Entry] shared by several [Map] implementations.
     */
    internal open class SimpleEntry<K, V>(override val key: K, value: V) : MutableMap.MutableEntry<K, V> {
        constructor(entry: Map.Entry<K, V>) : this(entry.key, entry.value)
        private var _value = value
        override val value: V get() = _value
        override fun setValue(newValue: V): V {
            // Should check if the map containing this entry is mutable.
            // However, to not increase entry memory footprint it might be worthwhile not to check it here and
            // force subclasses that implement `build()` (freezing) operation to implement their own `MutableEntry`.
            this@AbstractMutableMap.checkIsMutable()
            val oldValue = this._value
            this._value = newValue
            return oldValue
        }
        override fun hashCode(): Int = entryHashCode(this)
        override fun toString(): String = entryToString(this)
        override fun equals(other: Any?): Boolean = entryEquals(this, other)
    }
    // intermediate abstract class to workaround KT-43321
    internal abstract class AbstractEntrySet<E : Map.Entry<K, V>, K, V> :
AbstractMutableSet<E>() {
        final override fun contains(element: E): Boolean = containsEntry(element)
        abstract fun containsEntry(element: Map.Entry<K, V>): Boolean
        final override fun remove(element: E): Boolean = removeEntry(element)
        abstract fun removeEntry(element: Map.Entry<K, V>): Boolean
    }
    actual override fun clear() {
        entries.clear()
        private var _keys: MutableSet<K>? = null
        actual override val keys: MutableSet<K>
        get() {
            if (_keys == null) {
                _keys = object : AbstractMutableSet<K>() {
                    override fun add(element: K): Boolean = throw UnsupportedOperationException("Add is not supported on keys")
                    override fun clear() {
                        this@AbstractMutableMap.clear()
                    }
                    override operator fun contains(element: K): Boolean = containsKey(element)
                    override operator fun iterator(): MutableIterator<K> {
                        val entryIterator = entries.iterator()
                        return object :
MutableIterator<K> {
                            override fun hasNext(): Boolean = entryIterator.hasNext()
                            override fun next(): K = entryIterator.next().key
                            override fun remove() =
entryIterator.remove()
                        }
                    }
                    override fun remove(element: K): Boolean {
                        checkIsMutable()
                        if (containsKey(element)) {
                            this@AbstractMutableMap.remove(element)
                            return true
                        }
                        return false
                    }
                    override val size: Int get() = this@AbstractMutableMap.size
                }
            }
            return _keys!!
        }
        actual abstract override fun put(key: K, value: V): V?
        actual override fun putAll(from: Map<out K, V>) {
            checkIsMutable()
            for ((key, value) in from) {
                put(key, value)
            }
        }
        private var _values: MutableCollection<V>? = null
        actual override val values: MutableCollection<V>
        get() {
            if (_values == null) {
                _values = object :
AbstractMutableCollection<V>() {
                    override fun add(element: V): Boolean = throw UnsupportedOperationException("Add is not supported on values")
                    override fun clear() = this@AbstractMutableMap.clear()
                    override operator fun contains(element: V): Boolean = containsValue(element)
                    override operator fun iterator(): MutableIterator<V> {
                        val entryIterator = entries.iterator()
                        return object :
MutableIterator<V> {
                            override fun hasNext(): Boolean = entryIterator.hasNext()
                            override fun next(): V = entryIterator.next().value
                            override fun remove() =
entryIterator.remove()
                        }
                    }
                    override val size: Int get() =
this@AbstractMutableMap.size
                }
            }
            return this@AbstractMutableMap.values
        }
        override fun checkIsMutable(): Unit =
this@AbstractMutableMap.checkIsMutable()
    }
}

```

```

    }
    }
    return _values!!
}

actual override fun remove(key: K): V? {
    checkIsMutable()
    val iter = entries.iterator()
    while (iter.hasNext()) {
        val entry = iter.next()
        val k = entry.key
        if (key == k) {
            val value = entry.value
            iter.remove()
            return value
        }
    }
    return null
}

/**
 * This method is called every time when a mutating method is called on this mutable map.
 * Mutable maps that are built (frozen) must throw `UnsupportedOperationException`.
 */
internal open fun checkIsMutable(): Unit {}

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 */
package kotlin.collections

/**
 * Provides a skeletal implementation of the [MutableSet] interface.
 *
 * @param E the type of elements contained in the set. The set is invariant in its element type.
 */
public actual abstract class AbstractMutableSet<E>
protected actual constructor() : AbstractMutableCollection<E>(), MutableSet<E> {
    /**
     * Compares this set with another set instance with the unordered structural equality.
     *
     * @return `true`, if [other] instance is a [Set] of the same size, all elements of which are contained in this set.
     */
    override fun equals(other: Any?): Boolean {
        if (other === this) return true
        if (other !is Set<*>) return false
        return AbstractSet.setEquals(this, other)
    }

    /**
     * Returns the hash code value for this set.
     */
    override fun hashCode(): Int = AbstractSet.unorderedHashCode(this)
}

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 */
package kotlin.collections

/**
 * Provides a [MutableList] implementation, which uses a resizable array as its backing storage.
 *
 * This implementation doesn't provide a way to manage capacity, as backing JS array is resizable itself.
 * There is no speed advantage to pre-allocating array sizes in JavaScript, so this implementation does not include any of the "capacity and "growth increment" concepts.
 */
public actual open class ArrayList<E>
internal constructor(private var array: Array<Any?>) : AbstractMutableList<E>(), MutableList<E>, RandomAccess {
    private var isReadOnly: Boolean = false

    /**
     * Creates an empty [ArrayList].
     */
    public actual constructor() : this(emptyArray()) {}

    /**
     * Creates an empty [ArrayList].
     */
    @param initialCapacity initial capacity (ignored)
    public actual constructor(initialCapacity: Int) : this(emptyArray()) {}

    /**
     * Creates an [ArrayList] filled from the [elements] collection.
     */
    public actual constructor(elements: Collection<E>) : this(elements.toArray<Any?>()) {}

    @PublishedApi
    internal fun build(): List<E> {
        checkIsMutable()
        isReadOnly = true
        return this
    }

    /**
     * Does nothing in this ArrayList implementation.
     */
    public actual fun trimToSize() {}

    /**
     * Does nothing in this ArrayList implementation.
     */
    public actual fun ensureCapacity(minCapacity: Int) {}

    actual override val size: Int get() = array.size
    @Suppress("UNCHECKED_CAST")
    actual override fun get(index: Int): E = array[rangeCheck(index)] as E
    actual override fun set(index: Int, element: E): E {
        checkIsMutable()
        rangeCheck(index)
        @Suppress("UNCHECKED_CAST")
        return array[index].apply { array[index] = element } as E
    }

    actual override fun add(element: E): Boolean {
        checkIsMutable()
        array.asDynamic().push(element)
        modCount++
        return true
    }

    actual override fun add(index: Int, element: E): Unit {
        checkIsMutable()
        array.asDynamic().splice(insertionRangeCheck(index), 0, element)
        modCount++
    }

    actual override fun addAll(elements: Collection<E>): Boolean {
        checkIsMutable()
        if (elements.isEmpty()) return false
        array += elements.toArray<Any?>()
        modCount++
        return true
    }

    actual override fun addAll(index: Int, elements: Collection<E>): Boolean {
        checkIsMutable()
        insertionRangeCheck(index)
        if (index == size) return addAll(elements)
        if (elements.isEmpty()) return false
        when (index) {
            size -> return addAll(elements)
            0 -> array = elements.toArray<Any?>() + array
            else -> array = array.copyOfRange(0, index).asDynamic().concat(elements.toArray<Any?>()),
            array.copyOfRange(index, size))
        }
        modCount++
        return true
    }

    actual override fun removeAt(index: Int): E {
        checkIsMutable()
        rangeCheck(index)
        modCount++
        return if

```

```

(index == lastIndex)\n        array.asDynamic().pop()\n        else\n            array.asDynamic().splice(index, 1)[0]\n    }\n\n    actual override fun remove(element: E): Boolean {\n        checkIsMutable()\n        for (index in array.indices)\n        {\n            if (array[index] == element) {\n                array.asDynamic().splice(index, 1)\n                modCount++\n                return true\n            }\n        }\n        return false\n    }\n\n    override fun removeRange(fromIndex: Int, toIndex: Int) {\n        checkIsMutable()\n        modCount++\n        array.asDynamic().splice(fromIndex, toIndex - fromIndex)\n    }\n\n    actual override fun clear() {\n        checkIsMutable()\n        array = emptyArray()\n        modCount++\n    }\n\n    actual override fun indexOf(element: E): Int = array.indexOf(element)\n\n    actual override fun lastIndexOf(element: E): Int = array.lastIndexOf(element)\n\n    override fun toString() = arrayToString(array)\n\n    @SuppressWarnings("UNCHECKED_CAST")\n    override fun <T> toArray(array: Array<T>): Array<T> {\n        if (array.size < size) {\n            return toArray() as Array<T>\n        }\n        (this.array as Array<T>).copyInto(array)\n        if (array.size > size) {\n            array[size] = null as T // null-terminate\n        }\n        return array\n    }\n\n    override fun toArray(): Array<Any?> {\n        return js("[ ]").slice.call(array)\n    }\n\n    internal override fun checkIsMutable() {\n        if (isReadOnly) throw UnsupportedOperationException()\n    }\n\n    private fun rangeCheck(index: Int) = index.apply {\n        AbstractList.checkElementIndex(index, size)\n    }\n\n    private fun insertionRangeCheck(index: Int) = index.apply {\n        AbstractList.checkPositionIndex(index, size)\n    }\n}"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\ninternal fun <T> sortArrayWith(array: Array<out T>, comparison: (T, T) -> Int) {\n    if (getStableSortingIsSupported()) {\n        array.asDynamic().sort(comparison)\n    } else {\n        mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, Comparator(comparison))\n    }\n}\n\ninternal fun <T> sortArrayWith(array: Array<out T>, comparator: Comparator<in T>) {\n    if (getStableSortingIsSupported()) {\n        val comparison = { a: T, b: T -> comparator.compare(a, b) }\n        array.asDynamic().sort(comparison)\n    } else {\n        mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, comparator)\n    }\n}\n\ninternal fun <T> sortArrayWith(array: Array<out T>, fromIndex: Int, toIndex: Int, comparator: Comparator<in T>) {\n    if (fromIndex < toIndex - 1) {\n        mergeSort(array.unsafeCast<Array<T>>(), fromIndex, toIndex - 1, comparator)\n    }\n}\n\ninternal fun <T : Comparable<T>> sortArray(array: Array<out T>) {\n    if (getStableSortingIsSupported()) {\n        val comparison = { a: T, b: T -> a.compareTo(b) }\n        array.asDynamic().sort(comparison)\n    } else {\n        mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, naturalOrder())\n    }\n}\n\nprivate var _stableSortingIsSupported: Boolean? = null\nprivate fun getStableSortingIsSupported(): Boolean {\n    _stableSortingIsSupported?.let { return it }\n    _stableSortingIsSupported = false\n    val array = js("[ ]").unsafeCast<Array<Int>>()\n    // known implementations may use stable sort for arrays of up to 512 elements\n    // so we create slightly more elements to test stability\n    for (index in 0 until 600) array.asDynamic().push(index)\n\n    val comparison = { a: Int, b: Int -> (a and 3) - (b and 3) }\n    array.asDynamic().sort(comparison)\n    for (index in 1 until array.size) {\n        val a = array[index - 1]\n        val b = array[index]\n        if ((a and 3) == (b and 3) && a >= b) return false\n    }\n    _stableSortingIsSupported = true\n    return true\n}\n\nprivate fun <T> mergeSort(array: Array<T>, start: Int, endInclusive: Int, comparator: Comparator<in T>) {\n    val buffer = arrayOfNulls<Any?>(array.size).unsafeCast<Array<T>>()\n    val result = mergeSort(array, buffer, start, endInclusive, comparator)\n    if (result !== array) {\n        for (i in start..endInclusive) array[i] = result[i]\n    }\n}\n\n// Both start and end are inclusive indices.\nprivate fun <T> mergeSort(array: Array<T>, buffer: Array<T>, start: Int, end: Int, comparator: Comparator<in T>): Array<T> {\n    if (start == end) {\n        return array\n    }\n\n    val median = (start + end) / 2\n    val left = mergeSort(array, buffer, start, median, comparator)\n    val right = mergeSort(array, buffer, median + 1, end, comparator)\n\n    val target = if (left === buffer) array else buffer\n    // Merge.\n    var leftIndex = start\n    var rightIndex = median + 1\n    for (i in start..end) {\n        when {\n            leftIndex <= median && rightIndex <= end -> {\n                val leftValue = left[leftIndex]\n                val rightValue = right[rightIndex]\n                if (comparator.compare(leftValue, rightValue) <= 0) {\n                    target[i] = leftValue\n                    leftIndex++\n                } else {\n                    target[i] = rightValue\n                    rightIndex++\n                }\n            }\n        }\n    }\n}\n}

```

```

        } else {
            target[i] = rightValue
            rightIndex++
        }
    }
    leftIndex <= median -> {
        target[i] = left[leftIndex]
        leftIndex++
    } else /*
rightIndex <= end */ -> {
        target[i] = right[rightIndex]
        rightIndex++
    }
    Unit // TODO: Fix KT-31506
}

return target
}

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 */
package kotlin.collections

@OptIn(ExperimentalUnsignedTypes::class)
@SinceKotlin("1.3")
@kotlin.js.JsName("contentDeepHashCodeImpl")
internal fun <T> Array<out T>?.contentDeepHashCodeImpl(): Int {
    if (this == null) return 0
    var result = 1
    for (element in this) {
        val elementHash = when {
            element == null -> 0
            isArrayish(element) -> (element.unsafeCast<Array<*>>()).contentDeepHashCodeImpl()
            element is UByteArray -> element.contentHashCode()
            element is UShortArray -> element.contentHashCode()
            element is UIntArray -> element.contentHashCode()
            element is ULongArray -> element.contentHashCode()
            else -> element.hashCode()
        }
        result = 31 * result + elementHash
    }
    return result
}

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 */
package kotlin.collections

internal interface EqualityComparator {
    /**
     * Subclasses must override to return a value indicating whether or not two keys or values are equal.
     */
    abstract fun equals(value1: Any?, value2: Any?): Boolean

    /**
     * Subclasses must override to return the hash code of a given key.
     */
    abstract fun getHashCode(value: Any?): Int

    object HashCode : EqualityComparator {
        override fun equals(value1: Any?, value2: Any?): Boolean = value1 == value2
        override fun getHashCode(value: Any?): Int = value?.hashCode() ?: 0
    }
}

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 */
/* Based on GWT AbstractHashMap
 * Copyright 2008 Google Inc.
 */
package kotlin.collections

import kotlin.collections.MutableMap.MutableEntry

/**
 * Hash table based implementation of the [MutableMap] interface.
 * This implementation makes no guarantees regarding the order of enumeration of [keys], [values] and [entries] collections.
 * // Classes that extend HashMap and implement `build()` (freezing) operation
 * // have to make sure mutating methods check `checkIsMutable`.
 */
public actual open class HashMap<K, V> : AbstractMutableMap<K, V>, MutableMap<K, V> {
    private inner class EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V>() {
        override fun add(element: MutableEntry<K, V>): Boolean = throw UnsupportedOperationException("Add is not supported on entries")
        override fun clear() {
            this@HashMap.clear()
        }
        override fun containsEntry(element: Map.Entry<K, V>): Boolean = this@HashMap.containsEntry(element)
        override operator fun iterator(): MutableIterator<MutableEntry<K, V>> = internalMap.iterator()
        override fun removeEntry(element: Map.Entry<K, V>): Boolean {
            if (contains(element)) {
                this@HashMap.remove(element.key)
                return true
            }
            return false
        }
        override val size: Int get() = this@HashMap.size
    }

    /**
     * Internal implementation of the map: either string-based or hashcode-based.
     */
    private val internalMap: InternalMap<K, V>
    private val equality: EqualityComparator

    internal constructor(internalMap: InternalMap<K, V>) : super() {
        this.internalMap = internalMap
        this.equality = internalMap.equality
    }

    /**
     * Constructs an empty [HashMap] instance.
     */
    actual constructor() : this(InternalHashMap(EqualityComparator.HashCode))

    /**
     * Constructs an empty [HashMap] instance.
     * @param initialCapacity the initial capacity (ignored)
     * @param loadFactor the load factor (ignored)
     * @throws IllegalArgumentException if the initial capacity or load factor are negative
     */
    actual constructor(initialCapacity: Int, loadFactor: Float) : this() {
        // This implementation of HashMap has no need of load factors or capacities.
        require(initialCapacity >= 0) { "Negative initial capacity: $initialCapacity" }
        require(loadFactor >= 0) { "Non-positive load factor: $loadFactor" }
    }
}

```

```

actual constructor(initialCapacity: Int) : this(initialCapacity, 0.0f)\n\n /**\n * Constructs an instance of
[HashMap] filled with the contents of the specified [original]
map.\n */\n actual constructor(original: Map<out K, V>) : this() {\n this.putAll(original)\n }\n\n actual
override fun clear() {\n internalMap.clear()\n// structureChanged(this)\n }\n\n actual override fun
containsKey(key: K): Boolean = internalMap.containsKey(key)\n\n actual override fun containsValue(value: V):
Boolean = internalMap.any { equality.equals(it.value, value) }\n\n private var _entries:
MutableSet<MutableMap.MutableEntry<K, V>>? = null\n actual override val entries:
MutableSet<MutableMap.MutableEntry<K, V>>\n get() {\n if (_entries == null) {\n _entries =
createEntrySet()\n }\n return _entries!!\n }\n\n internal open fun createEntrySet():
MutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n actual override operator fun get(key: K): V? =
internalMap.get(key)\n\n actual override fun put(key: K, value: V): V? = internalMap.put(key, value)\n\n
actual override fun remove(key: K): V? = internalMap.remove(key)\n\n actual override val size: Int get() =
internalMap.size\n}\n\n/**\n * Constructs the specialized implementation of [HashMap] with [String] keys, which
stores the keys as properties of\n * JS object without hashing them.\n */\n\npublic fun <V> stringMapOf(vararg pairs:
Pair<String, V>): HashMap<String, V> {\n return HashMap<String,
V>(InternalStringMap(EqualityComparator.HashCode)).apply { putAll(pairs) }\n}\n\n","/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n/**\n * Based on GWT HashSet\n *
Copyright 2008 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * The implementation of the [MutableSet]
interface, backed by a [HashMap] instance.\n */\n\n// Classes that extend HashSet and implement `build()` (freezing)
operation\n// have to make sure mutating
methods check `checkIsMutable`.\n\npublic actual open class HashSet<E> : AbstractMutableSet<E>, MutableSet<E>
{\n\n internal val map: HashMap<E, Any>\n /**\n * Constructs a new empty [HashSet].\n */\n\n actual
constructor() {\n map = HashMap<E, Any>()\n }\n\n /**\n * Constructs a new [HashSet] filled with the
elements of the specified collection.\n */\n\n actual constructor(elements: Collection<E>) {\n map =
HashMap<E, Any>(elements.size)\n addAll(elements)\n }\n\n /**\n * Constructs a new empty
[HashSet].\n */\n\n * @param initialCapacity the initial capacity (ignored)\n * @param loadFactor the load
factor (ignored)\n * @throws IllegalArgumentException if the initial capacity or load factor are negative\n
*/\n\n actual constructor(initialCapacity: Int, loadFactor: Float) {\n map = HashMap<E, Any>(initialCapacity,
loadFactor)\n }\n\n actual constructor(initialCapacity: Int) : this(initialCapacity,
0.0f)\n\n /**\n * Protected constructor to specify the underlying map. This is used by\n * LinkedHashSet.\n
*/\n\n * @param map underlying map to use.\n */\n\n internal constructor(map: HashMap<E, Any>) {\n this.map
= map\n }\n\n actual override fun add(element: E): Boolean {\n val old = map.put(element, this)\n
return old == null\n }\n\n actual override fun clear() {\n map.clear()\n }\n\n// public override fun
clone(): Any {\n// return HashSet<E>(this)\n// }\n\n actual override operator fun contains(element: E):
Boolean = map.containsKey(element)\n\n actual override fun isEmpty(): Boolean = map.isEmpty()\n\n actual
override fun iterator(): MutableIterator<E> = map.keys.iterator()\n\n actual override fun remove(element: E):
Boolean = map.remove(element) != null\n\n actual override val size: Int get() = map.size\n}\n\n/**\n * Creates a
new instance of the specialized implementation
of [HashSet] with the specified [String] elements,\n * which elements the keys as properties of JS object without
hashing them.\n */\n\npublic fun stringSetOf(vararg elements: String): HashSet<String> {\n return
HashSet(stringMapOf<Any>()).apply { addAll(elements) }\n}\n\n","/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n/**\n * Based on GWT InternalHashCodeMap\n * Copyright
2008 Google Inc.\n */\n\npackage kotlin.collections\n\nimport
kotlin.collections.MutableMap.MutableEntry\nimport kotlin.collections.AbstractMutableMap.SimpleEntry\n\n/**\n
* A simple wrapper around JavaScriptObject to provide [java.util.Map]-like semantics for any\n * key type.\n */\n
*\n * Implementation notes:\n * *\n * A key's hashCode is the index in backingMap which should contain that

```

key. Since several keys may * have the same hash, each value

```
in hashCodeMap is actually an array containing all entries whose * keys share the same hash.\n\ninternal class\nInternalHashMap<K, V>(override val equality: EqualityComparator) : InternalMap<K, V> {\n\n    private var\nbackingMap: dynamic = createJsMap()\n    override var size: Int = 0\n    private set\n\n    override fun put(key: K,\nvalue: V): V? {\n        val hashCode = equality.getHashCode(key)\n        val chainOrEntry =\ngetChainOrEntryOrNull(hashCode)\n        if (chainOrEntry == null) {\n            // This is a new chain, put it to the\nmap.\n            backingMap[hashCode] = SimpleEntry(key, value)\n        } else {\n            if (chainOrEntry !is\nArray<*>) {\n                // It is an entry\n                val entry: SimpleEntry<K, V> = chainOrEntry\n                if\n(equality.equals(entry.key, key)) {\n                    return entry.setValue(value)\n                } else {\n                    backingMap[hashCode] = arrayOf(entry, SimpleEntry(key, value))\n                    size++\n                    return null\n                } else {\n                    // Chain already exists,\nperhaps key also exists.\n                    val chain: Array<MutableEntry<K, V>> = chainOrEntry\n                    val entry =\nchain.findEntryInChain(key)\n                    if (entry != null) {\n                        return entry.setValue(value)\n                    }\n                    chain.asDynamic().push(SimpleEntry(key, value))\n                    size++\n                }\n            }\n            structureChanged(host)\n            return null\n        }\n\n        override fun remove(key: K): V? {\n            val hashCode =\nequality.getHashCode(key)\n            val chainOrEntry = getChainOrEntryOrNull(hashCode) ?: return null\n            if\n(chainOrEntry !is Array<*>) {\n                val entry: MutableEntry<K, V> = chainOrEntry\n                if\n(equality.equals(entry.key, key)) {\n                    jsDeleteProperty(backingMap, hashCode)\n                    size--\n                    return entry.value\n                } else {\n                    return null\n                } else {\n                    val chain: Array<MutableEntry<K, V>> =\nchainOrEntry\n                    for (index in chain.indices) {\n                        val entry = chain[index]\n                        if\n(equality.equals(key, entry.key)) {\n                            if (chain.size == 1) {\n                                chain.asDynamic().length =\n0\n                                // remove the whole array\n                                jsDeleteProperty(backingMap, hashCode)\n                            } else {\n                                // splice out the entry we're removing\n                                chain.asDynamic().splice(index, 1)\n                            }\n                            size--\n                            structureChanged(host)\n                            return entry.value\n                        }\n                    }\n                    return null\n                }\n            }\n            override fun clear() {\n                backingMap = createJsMap()\n                size =\n0\n            }\n            override fun contains(key: K):\nBoolean = getEntry(key) != null\n            override fun get(key: K): V? = getEntry(key)?.value\n\n            private fun\ngetEntry(key: K): MutableEntry<K, V>? {\n                val chainOrEntry =\ngetChainOrEntryOrNull(equality.getHashCode(key)) ?: return null\n                if (chainOrEntry !is Array<*>) {\n                    val entry: MutableEntry<K, V> = chainOrEntry\n                    if (equality.equals(entry.key, key)) {\n                        return\nentry\n                    } else {\n                        return null\n                    } else {\n                        val chain: Array<MutableEntry<K,\nV>> = chainOrEntry\n                        return chain.findEntryInChain(key)\n                    }\n                }\n            }\n            private fun\nArray<MutableEntry<K, V>>.findEntryInChain(key: K): MutableEntry<K, V>? =\nfirstOrNull { entry ->\nequality.equals(entry.key, key) }\n            override fun iterator(): MutableIterator<MutableEntry<K, V>> {\n                return object : MutableIterator<MutableEntry<K, V>> {\n                    var state = -1 // -1 not ready, 0 - ready, 1 -\ndone\n\n                    val keys: Array<String> = js("Object").keys(backingMap)\n                    var keyIndex = -1\n                    var\nchainOrEntry: dynamic = null\n                    var isChain = false\n                    var itemIndex = -1\n                    var lastEntry:\nMutableEntry<K, V>? = null\n                    private fun computeNext(): Int {\n                        if (chainOrEntry != null &&\nisChain) {\n                            val chainSize: Int = chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>().size\n                            if (++itemIndex < chainSize)\n                                return 0\n                        }\n                        if (++keyIndex < keys.size)\n                            {\n                                chainOrEntry = backingMap[keys[keyIndex]]\n                                isChain = chainOrEntry is Array<*>\n                                itemIndex = 0\n                                return 0\n                            } else {\n                                chainOrEntry = null\n                                return 1\n                            }\n                        }\n                    }\n                    override fun hasNext(): Boolean {\n                        if (state == -1)\n                            state = computeNext()\n                        return state == 0\n                    }\n                    override fun next(): MutableEntry<K, V> {\n                        if (!hasNext()) throw NoSuchElementException\n                        val lastEntry = if (isChain) {\n                            chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>()[itemIndex]\n                        }\n                    }\n                }\n            }\n        }\n    }\n}
```



```

    } else {\n                chainOrEntry.unsafeCast<MutableEntry<K, V>>()\n                }\n
this.lastEntry = lastEntry\n                state = -1\n                return lastEntry\n                }\n\n                override fun
remove() {\n                checkNotNull(lastEntry)\n                this@InternalHashMap.remove(lastEntry!!.key)\n
                lastEntry = null\n                // the chain being iterated just got modified by InternalHashMap.remove\n
                itemIndex--\n                }\n                }\n\n                private fun getChainOrEntryOrNull(hashCode: Int): dynamic
{\n                val chainOrEntry = backingMap[hashCode]\n                return if (chainOrEntry === undefined) null else
chainOrEntry\n                }\n\n                }"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n                package kotlin.collections\n                /**\n * The common interface of
[InternalStringMap] and [InternalHashMap].\n */\n\n                internal interface InternalMap<K, V> :
MutableIterable<MutableMap.MutableEntry<K, V>> {\n                val equality: EqualityComparator\n                val size: Int\n
operator fun contains(key: K): Boolean\n                operator fun get(key: K): V?\n\n                fun put(key: K, value: V): V?\n                fun
remove(key: K): V?\n                fun clear(): Unit\n\n                fun createJsMap(): dynamic {\n                val result =
js("Object.create(null)")\n                // force to switch object representation to dictionary mode\n                result["foo"] =
1\n                jsDeleteProperty(result,
                "foo")\n                return result\n                }\n\n                }"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n                /*\n * Based on GWT InternalStringMap\n * Copyright 2008 Google Inc.\n
*/\n\n                package kotlin.collections\n                import kotlin.collections.MutableMap.MutableEntry\n                /**\n * A simple wrapper
around JavaScript Map for key type is string.\n */\n\n                * Though this map is instantiated only with K=String, the K type
is not fixed to String statically,\n * because we want to have it erased to Any? in order not to generate type-safe
override bridges for\n * [get], [contains], [remove] etc, if they ever are generated.\n */\n\n                internal class
InternalStringMap<K, V>(override val equality: EqualityComparator) : InternalMap<K, V> {\n\n                private var
backingMap: dynamic = createJsMap()\n                override var size: Int = 0\n                private set\n\n                /**\n * A mod count to track 'value' replacements in map to ensure that the 'value' that we have in the\n * iterator
entry is guaranteed to be still correct.\n * This is to optimize for the common scenario where the values are not
modified during\n * iterations where the entries are never stale.\n */\n\n                private var valueMod: Int = 0\n\n                override operator fun contains(key: K): Boolean {\n                if (key !is String) return false\n                return
backingMap[key] !== undefined\n                }\n\n                override operator fun get(key: K): V? {\n                if (key !is String) return
null\n                val value = backingMap[key]\n                return if (value !== undefined) value.unsafeCast<V>() else null\n                }\n\n                override fun put(key: K, value: V): V? {\n                require(key is String)\n                val oldValue =
backingMap[key]\n                backingMap[key] = value\n                if (oldValue === undefined) {\n                size++\n\n                structureChanged(host)\n                return null\n                }\n                } else {\n                valueMod++\n                return oldValue.unsafeCast<V>()\n                }\n                }\n\n                override fun
remove(key: K): V? {\n                if (key !is String) return null\n                val value = backingMap[key]\n                if (value !==
undefined) {\n                jsDeleteProperty(backingMap, key)\n                size--\n\n                structureChanged(host)\n                return value.unsafeCast<V>()\n                }\n                } else {\n                valueMod++\n                return null\n                }\n                }\n\n                override fun clear() {\n                backingMap = createJsMap()\n                size = 0\n                }\n\n                override fun iterator():
MutableIterator<MutableEntry<K, V>> {\n                return object : MutableIterator<MutableEntry<K, V>> {\n\n                private val keys: Array<String> = js("Object").keys(backingMap)\n                private val iterator = keys.iterator()\n\n                private var lastKey: String? = null\n\n                override fun hasNext(): Boolean = iterator.hasNext()\n\n                override fun next():
MutableEntry<K, V> {\n                val key = iterator.next()\n                lastKey = key\n\n                @Suppress("UNCHECKED_CAST")\n                return newMapEntry(key as K)\n                }\n\n                override
fun remove() {\n                @Suppress("UNCHECKED_CAST")\n                this@InternalStringMap.remove(checkNotNull(lastKey) as K)\n                }\n                }\n\n                private fun
newMapEntry(key: K): MutableEntry<K, V> = object : MutableEntry<K, V> {\n                override val key: K get() =
key\n                override val value: V get() = this@InternalStringMap[key].unsafeCast<V>()\n                override fun

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setValue(newValue: V): V = this@InternalStringMap.put(key, newValue).unsafeCast<V>()\n    override fun
hashCode(): Int = AbstractMap.entryHashCode(this)\n    override fun toString(): String =
AbstractMap.entryToString(this)\n    override fun equals(other: Any?): Boolean = AbstractMap.entryEquals(this,
other)\n } \n } \n", "/*\n * Copyright 2010-2020

```

```

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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n * Based on GWT

```

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LinkedHashMap\n * Copyright 2008 Google Inc.\n * \n package kotlin.collections\n import
kotlin.collections.MutableMap.MutableEntry\n /**\n * Hash table based implementation of the [MutableMap]
interface, which additionally preserves the insertion order\n * of entries during the iteration.\n * \n * The insertion
order is preserved by maintaining a doubly-linked list of all of its entries.\n * \n public actual open class
LinkedHashMap<K, V> : HashMap<K, V>, MutableMap<K, V> {\n\n // **\n * The entry we use includes
next/prev pointers for a doubly-linked circular\n * list with a head node. This reduces the special cases we have to
deal with\n * in the list operations.\n * \n * Note that we duplicate the key from the underlying hash map so we
can find\n * the eldest

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```

entry. The alternative would have been to modify HashMap so more\n * of the code was directly usable here, but
this would have added some\n * overhead to HashMap, or to reimplement most of the HashMap code here with\n
* small modifications. Paying a small storage cost only if you use\n * LinkedHashMap and minimizing code size
seemed like a better tradeoff\n * \n private inner class ChainEntry<K, V>(key: K, value: V) :

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AbstractMutableMap.SimpleEntry<K, V>(key, value) {\n    internal var next: ChainEntry<K, V>? = null\n
internal var prev: ChainEntry<K, V>? = null\n\n    override fun setValue(newValue: V): V {\n
this@LinkedHashMap.checkIsMutable()\n        return super.setValue(newValue)\n    } \n } \n\n private inner
class EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V>() {\n\n private inner class EntryIterator :

```

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MutableIterator<MutableEntry<K, V>> {\n    // The last entry that was returned from this iterator.\n
private var last: ChainEntry<K, V>? = null\n\n    // The next entry to return from this iterator.\n
private var next: ChainEntry<K, V>? = null\n\n    init {\n        next = head\n
recordLastKnownStructure(map, this)\n    } \n\n    override fun hasNext(): Boolean {\n        return
next != null\n    } \n\n    override fun next(): MutableEntry<K, V> {\n
checkStructuralChange(map, this)\n        if (!hasNext()) throw NoSuchElementException()\n\n        val
current = next!!\n        last = current\n        next = current.next.takeIf { it != head }\n        return
current\n    } \n\n    override fun remove() {\n        check(last != null)\n
this@EntrySet.checkIsMutable()\n        checkStructuralChange(map, this)\n        last!!.remove()\n
map.remove(last!!.key)\n

```

```

recordLastKnownStructure(map, this)\n        last = null\n    } \n } \n\n    override fun
add(element: MutableEntry<K, V>): Boolean = throw UnsupportedOperationException("Add is not supported on
entries")\n    override fun clear() {\n        this@LinkedHashMap.clear()\n    } \n\n    override fun
containsEntry(element: Map.Entry<K, V>): Boolean = this@LinkedHashMap.containsEntry(element)\n\n    override
operator fun iterator(): MutableIterator<MutableEntry<K, V>> = EntryIterator()\n\n    override fun
removeEntry(element: Map.Entry<K, V>): Boolean {\n        checkIsMutable()\n        if (contains(element)) {\n
this@LinkedHashMap.remove(element.key)\n            return true\n        } \n        return false\n
} \n\n    override val size: Int get() = this@LinkedHashMap.size\n\n    override fun checkIsMutable(): Unit =
this@LinkedHashMap.checkIsMutable()\n } \n } \n\n

```

```

/*\n * The head of the insert order chain, which is a doubly-linked circular\n * list.\n * \n * The most recently
inserted node is at the end of the chain, ie.\n * chain.prev.\n * \n private var head: ChainEntry<K, V>? =
null\n\n /**\n * Add this node to the end of the chain.\n * \n private fun ChainEntry<K, V>.addToEnd() {\n
// This entry is not in the list.\n    check(next == null && prev == null)\n\n    val _head = head\n    if
(_head == null) {\n        head = this\n        next = this\n        prev = this\n    } else {\n        // Chain is
valid.\n        val _tail = checkNotNull(_head.prev)\n        // Update me.\n        prev = _tail\n        next =
_head\n        // Update my new siblings: current head and old tail\n        _head.prev = this\n        _tail.next =

```

```

this\n    }\n }\n\n /**\n  * Remove this node from the chain it is a part of.\n  */\n private fun
ChainEntry<K,
V>.remove() {\n    if (this.next === this) {\n        // if this is single element, remove head\n        head =
null\n    } else {\n        if (head === this) {\n            // if this is first element, move head to next\n
head = next\n        }\n        next!!.prev = prev\n        prev!!.next = next\n    }\n    next = null\n    prev =
null\n }\n\n /**\n  * The hashmap that keeps track of our entries and the chain. Note that we\n  * duplicate the
key here to eliminate changes to HashMap and minimize the\n  * code here, at the expense of additional space.\n\n */\n private val map: HashMap<K, ChainEntry<K, V>>\n\n private var isReadOnly: Boolean = false\n\n /**\n  * Constructs an empty [LinkedHashMap] instance.\n  */\n actual constructor() : super() {\n    map =
HashMap<K, ChainEntry<K, V>>()\n }\n\n internal constructor(backingMap: HashMap<K, Any>) : super() {\n
    @Suppress("UNCHECKED_CAST")
// expected to work due to erasure\n    map = backingMap as HashMap<K, ChainEntry<K, V>>\n }\n\n /**\n  * Constructs an empty [LinkedHashMap] instance.\n  * @param initialCapacity the initial capacity
(ignored)\n  * @param loadFactor the load factor (ignored)\n  * @throws IllegalArgumentException if
the initial capacity or load factor are negative\n  */\n actual constructor(initialCapacity: Int, loadFactor: Float) :
super(initialCapacity, loadFactor) {\n    map = HashMap<K, ChainEntry<K, V>>()\n }\n\n actual
constructor(initialCapacity: Int) : this(initialCapacity, 0.0f)\n\n /**\n  * Constructs an instance of
[LinkedHashMap] filled with the contents of the specified [original] map.\n  */\n actual constructor(original:
Map<out K, V>) {\n    map = HashMap<K, ChainEntry<K, V>>()\n    this.putAll(original)\n }\n\n @PublishedApi\n internal fun build(): Map<K, V> {\n    checkIsMutable()\n
    isReadOnly = true\n    return this\n }\n\n actual override fun clear() {\n    checkIsMutable()\n
map.clear()\n    head = null\n }\n\n // override fun clone(): Any {\n//    return LinkedHashMap(this)\n//
}\n\n actual override fun containsKey(key: K): Boolean = map.containsKey(key)\n\n actual override fun
containsValue(value: V): Boolean {\n    var node: ChainEntry<K, V> = head ?: return false\n    do {\n        if
(node.value == value) {\n            return true\n        }\n        node = node.next!!\n    } while (node !==
head)\n    return false\n }\n\n internal override fun createEntrySet():
MutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n actual override operator fun get(key: K): V? =
map.get(key)?.value\n\n actual override fun put(key: K, value: V): V? {\n    checkIsMutable()\n    val old =
map.get(key)\n    if (old == null) {\n        val newEntry
= ChainEntry(key, value)\n        map.put(key, newEntry)\n        newEntry.addToEnd()\n        return null\n
    } else {\n        return old.setValue(value)\n    }\n }\n\n actual override fun remove(key: K): V? {\n
checkIsMutable()\n    val entry = map.remove(key)\n    if (entry != null) {\n        entry.remove()\n
return entry.value\n    }\n    return null\n }\n\n actual override val size: Int get() = map.size\n\n internal
override fun checkIsMutable() {\n    if (isReadOnly) throw UnsupportedOperationException()\n }\n}\n\n /**\n  * Constructs the specialized implementation of [LinkedHashMap] with [String] keys, which stores the keys as
properties of\n  * JS object without hashing them.\n  */\n public fun <V> linkedStringMapOf(vararg pairs:
Pair<String, V>): LinkedHashMap<String, V> {\n    return LinkedHashMap<String,
V>(stringMapOf<Any>()).apply { putAll(pairs) }\n }\n\n /**\n  * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n  * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n  */\n\n /**\n  * Based on GWT LinkedHashMap\n  * Copyright
2008 Google Inc.\n  */\n\n package kotlin.collections\n\n /**\n  * The implementation of the [MutableSet] interface,
backed by a [LinkedHashMap] instance.\n  * This implementation preserves the insertion order of elements
during the iteration.\n  */\n public actual open class LinkedHashMap<E> : HashSet<E>, MutableSet<E> {\n\n
internal constructor(map: LinkedHashMap<E, Any>) : super(map)\n\n /**\n  * Constructs a new empty
[LinkedHashSet].\n  */\n actual constructor() : super(LinkedHashMap<E, Any>())\n\n /**\n  * Constructs a
new [LinkedHashSet] filled with the elements of the specified collection.\n  */\n actual constructor(elements:
Collection<E>) : super(LinkedHashMap<E, Any>()) {\n    addAll(elements)\n }\n\n /**\n  * Constructs

```



```

String = throw UnsupportedOperationException("readln is not supported in
Kotlin/JS")\n\n@SinceKotlin("1.6")\npublic actual fun readlnOrNull(): String? = throw
UnsupportedOperationException("readlnOrNull is not supported in Kotlin/JS"), /*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.intrinsics.CoroutineSingletons.*\nimport
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal
actual class SafeContinuation<in T>\n\ninternal actual constructor(\n    private val delegate: Continuation<T>,\n    initialResult: Any?\n) : Continuation<T> {\n    @PublishedApi\n    internal actual constructor(delegate:
Continuation<T>) : this(delegate, UNDECIDED)\n\n    public actual override val context: CoroutineContext\n    get() = delegate.context\n\n    private var result: Any? = initialResult\n\n    public actual override fun resumeWith(result: Result<T>) {\n
val cur = this.result\n        when {\n            cur === UNDECIDED -> {\n                this.result = result.value\n
            }\n            cur === COROUTINE_SUSPENDED -> {\n                this.result = RESUMED\n
            }\n            delegate.resumeWith(result)\n        }\n        else -> throw IllegalStateException("Already resumed")\n    }\n\n    @PublishedApi\n    internal actual fun getOrThrow(): Any? {\n        if (result === UNDECIDED) {\n
result = COROUTINE_SUSPENDED\n            return COROUTINE_SUSPENDED\n        }\n        val result =
this.result\n        return when {\n            result === RESUMED -> COROUTINE_SUSPENDED // already called
continuation, indicate COROUTINE_SUSPENDED upstream\n            result is Result.Failure -> throw
result.exception\n            else -> result // either COROUTINE_SUSPENDED
or data\n        }\n    }\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines.cancellation\n\n@SinceKotlin("1.4")\npublic actual
open class CancellationException : IllegalStateException {\n    actual constructor()\n    actual
constructor(message: String?) : super(message)\n    constructor(message: String?, cause: Throwable?) :
super(message, cause)\n    constructor(cause: Throwable?) : super(cause)\n}\n\n", /*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines.js.internal\n\nimport
kotlin.coroutines.Continuation\nimport
kotlin.coroutines.EmptyCoroutineContext\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal
val EmptyContinuation = Continuation<Any?>(EmptyCoroutineContext) { result ->\n
result.getOrThrow()\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n * Exposes the [Date
API](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Date) to Kotlin.\n
*/\n\n@Suppress("NOT_DOCUMENTED")\npublic external class Date() {\n    public constructor(milliseconds:
Number)\n\n    public constructor(dateString: String)\n\n    public constructor(year: Int, month: Int)\n\n    public
constructor(year: Int, month: Int, day: Int)\n\n    public constructor(year: Int, month: Int, day: Int, hour: Int)\n\n
public constructor(year: Int, month: Int, day: Int, hour: Int, minute: Int)\n\n    public constructor(year: Int, month:
Int, day: Int, hour: Int, minute: Int, second: Int)\n\n    public constructor(year: Int, month: Int, day: Int, hour:
Int, minute: Int, second: Int, millisecond: Number)\n\n    public fun getDate(): Int\n\n    public fun getDay(): Int\n\n
public fun getFullYear(): Int\n\n    public fun
getHours(): Int\n\n    public fun getMilliseconds(): Int\n\n    public fun getMinutes(): Int\n\n    public fun
getMonth(): Int\n\n    public fun getSeconds(): Int\n\n    public fun getTime(): Double\n\n    public fun
getTimezoneOffset(): Int\n\n    public fun getUTCDate(): Int\n\n    public fun getUTCDay(): Int\n\n    public fun
getUTCFullYear(): Int\n\n    public fun getUTCHours(): Int\n\n    public fun getUTCMilliseconds(): Int\n\n    public
fun getUTCMinutes(): Int\n\n    public fun getUTCMonth(): Int\n\n    public fun getUTCSeconds(): Int\n\n    public
fun toDateString(): String\n\n    public fun toISOString(): String\n\n    public fun toJSON(): Json\n\n    public fun

```

```

toLocaleDateString(locales: Array<String> = definedExternally, options: LocaleOptions
= definedExternally): String\n\n public fun toLocaleDateString(locales: String, options: LocaleOptions =
definedExternally): String\n\n public fun toLocaleString(locales: Array<String> = definedExternally, options:
LocaleOptions = definedExternally): String\n\n public fun toLocaleString(locales: String, options: LocaleOptions
= definedExternally): String\n\n public fun toLocaleTimeString(locales: Array<String> = definedExternally,
options: LocaleOptions = definedExternally): String\n\n public fun toLocaleTimeString(locales: String, options:
LocaleOptions = definedExternally): String\n\n public fun toTimeString(): String\n\n public fun toUTCString():
String\n\n public companion object {\n public fun now(): Double\n\n public fun parse(dateString: String):
Double\n\n public fun UTC(year: Int, month: Int): Double\n\n public fun UTC(year: Int, month: Int, day:
Int): Double\n\n public fun UTC(year: Int, month: Int, day: Int, hour:
Int): Double\n\n public fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int): Double\n\n public
fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int): Double\n\n public fun UTC(year:
Int, month: Int, day: Int, hour: Int, minute: Int, second: Int, millisecond: Number): Double\n } \n\n public
interface LocaleOptions {\n public var localeMatcher: String?\n\n public var timeZone: String?\n\n
public var hour12: Boolean?\n\n public var formatMatcher: String?\n\n public var weekday: String?\n\n
public var era: String?\n\n public var year: String?\n\n public var month: String?\n\n public var day:
String?\n\n public var hour: String?\n\n public var minute: String?\n\n public var second: String?\n\n
public var timeZoneName: String? \n } \n\n public inline fun dateLocaleOptions(init: Date.LocaleOptions() ->
Unit): Date.LocaleOptions {\n
val result = js("new Object()").unsafeCast<Date.LocaleOptions>()\n init(result)\n return result\n } \n\n *
Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n package
kotlin.dom\n\n import org.w3c.dom.Document\n\n import org.w3c.dom.Element\n\n import
kotlin.internal.LowPriorityInOverloadResolution\n\n import kotlinx.dom.appendElement as
newAppendElement\n\n import kotlinx.dom.createElement as newCreateElement\n\n /**\n * Creates a new element
with the specified [name].\n *\n * The element is initialized with the specified [init] function.\n
*\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = "This API is moved to another package,
use 'kotlinx.dom.createElement' instead.",\n replaceWith = ReplaceWith("this.createElement(name, init)"),
"\n\n kotlinx.dom.createElement")\n\n * @DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.6")\n\n public inline fun Document.createElement(name: String, noinline init: Element.() -> Unit): Element =
this.newCreateElement(name, init)\n\n /**\n * Appends a newly created element with the specified [name] to this
element.\n *\n * The element is initialized with the specified [init] function.\n
*\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = "This API is moved to another package,
use 'kotlinx.dom.appendElement' instead.",\n replaceWith = ReplaceWith("this.appendElement(name, init)"),
"\n\n kotlinx.dom.appendElement")\n\n * @DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\n\n public
inline fun Element.appendElement(name: String, noinline init: Element.() -> Unit): Element =
this.newAppendElement(name, init)\n\n */\n\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n package
kotlin.dom\n\n import org.w3c.dom.Element\n\n import kotlin.internal.LowPriorityInOverloadResolution\n\n import
kotlinx.dom.addClass as newAddClass\n\n import kotlinx.dom.hasClass as newHasClass\n\n import
kotlinx.dom.removeClass as newRemoveClass\n\n /**\n * Returns true if the element has the given CSS class style in its
'class' attribute\n *\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = "This API is moved to
another package, use 'kotlinx.dom.hasClass' instead.",\n replaceWith = ReplaceWith("this.hasClass(cssClass)"),
"\n\n kotlinx.dom.hasClass")\n\n * @DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\n\n inline fun
Element.hasClass(cssClass: String): Boolean = this.newHasClass(cssClass)\n\n /**\n * Adds CSS class to element.
Has no effect if all specified classes are already in class attribute of the element\n *\n * @return true if at least one
class has been added\n *\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = "This API is moved

```

to another package,

```
use 'kotlinx.dom.addClass' instead.\",\n    replaceWith = ReplaceWith(\"this.addClass(cssClasses)\",  
\"kotlinx.dom.addClass\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\ninline fun  
Element.addClass(vararg cssClasses: String): Boolean = this.newAddClass(*cssClasses)\n\n\n/**\n * Removes all  
[cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the element\n *\n * @return true if at least one class has been removed\n */\n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to another package, use 'kotlinx.dom.removeClass' instead.\",\n    replaceWith =  
    ReplaceWith(\"this.removeClass(cssClasses)\",  
\"kotlinx.dom.removeClass\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\ninline  
fun Element.removeClass(vararg cssClasses: String): Boolean = this.newRemoveClass(*cssClasses), /*\n *  
Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.dom\nimport org.w3c.dom.Element\nimport org.w3c.dom.Node\nimport  
kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.isElement as newIsElement\nimport  
kotlinx.dom.isText as newIsText\n\n/**\n * Gets a value indicating whether this node is a TEXT_NODE or a  
CDATA_SECTION_NODE.\n */\n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API  
is moved to another package, use 'kotlinx.dom.isText' instead.\",\n    replaceWith = ReplaceWith(\"this.isText\",  
\"kotlinx.dom.isText\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic val  
Node.isText: Boolean\n    inline get() = this.newIsText\n\n/**\n * Gets a value indicating whether this node is an  
[Element].\n */\n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to  
another package, use 'kotlinx.dom.isElement'  
instead.\",\n    replaceWith = ReplaceWith(\"this.isElement\",  
\"kotlinx.dom.isElement\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic val  
Node.isElement: Boolean\n    inline get() = this.newIsElement\n\n\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and  
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that  
can be found in the license/LICENSE.txt file.\n */\n\npackage org.w3c.dom.events\n\npublic fun  
EventListener(handler: (Event) -> Unit): EventListener = EventListenerHandler(handler)\n\nprivate class  
EventListenerHandler(private val handler: (Event) -> Unit) : EventListener {\n    public override fun  
handleEvent(event: Event) {\n        handler(event)\n    }\n\n    public override fun toString(): String =  
\"EventListenerHandler($handler)\"\n}\n\n\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming  
Language contributors.\n * Use of this source code is governed by the Apache  
2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage org.w3c.dom\n\npublic external  
interface ItemArrayLike<out T> {\n    val length: Int\n    fun item(index: Int): T?\n}\n\n/**\n * Returns the view of  
this `ItemArrayLike<T>` collection as `List<T>`\n */\n\n@public fun <T> ItemArrayLike<T>.asList(): List<T> =  
object : AbstractList<T>() {\n    override val size: Int get() = this@asList.length\n\n    override fun get(index: Int): T  
= when (index) {\n        in 0..lastIndex -> this@asList.item(index).unsafeCast<T>()\n        else -> throw  
IndexOutOfBoundsException(\"index $index is not in range [0..$lastIndex]\")\n    }\n}\n\n\n\n/*\n * Copyright 2010-  
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the  
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.dom\nimport  
org.w3c.dom.Element\nimport org.w3c.dom.Node\nimport  
kotlin.internal.LowPriorityInOverloadResolution\nimport  
kotlinx.dom.appendText as newAppendText\nimport kotlinx.dom.clear as newClear\n\n/**\n * Removes all the  
children from this node.\n */\n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is  
moved to another package, use 'kotlinx.dom.clear' instead.\",\n    replaceWith = ReplaceWith(\"this.clear\"),  
\"kotlinx.dom.clear\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic inline fun  
Node.clear() = this.newClear()\n\n/**\n * Creates text node and append it to the element.\n */\n\n@return this  
element\n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to another  
package, use 'kotlinx.dom.appendText' instead.\",\n    replaceWith = ReplaceWith(\"this.appendText(text)\",
```

```

@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")
inline fun Element.appendText(text: String): Element = this.newAppendText(text)
"/** Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.js
/** Reinterprets this value as a value of the [dynamic type](/docs/reference/dynamic-type.html).
 */
@kotlin.internal.InlineOnly
public inline fun Any?.asDynamic(): dynamic = this
/** Reinterprets this value as a value of the specified type [T] without any actual type checking.
 */
@kotlin.internal.InlineOnly
public inline fun <T> Any?.unsafeCast(): @kotlin.internal.NoInfer T = this.asDynamic()
/** Reinterprets this `dynamic` value as a value of the specified type [T] without any actual type checking.
 */
@kotlin.internal.DynamicExtension
@JsName("unsafeCastDynamic")
@kotlin.internal.InlineOnly
public inline fun <T> dynamic.unsafeCast(): @kotlin.internal.NoInfer T = this
/** Allows to iterate this `dynamic` object in the following cases:
 * - when it has an `iterator` function,
 * - when it is an array
 * - when it is an instance of [kotlin.collections.Iterable]
 */
@kotlin.internal.DynamicExtension
public operator fun dynamic.iterator(): Iterator<dynamic> {
    val r: Any? = this
    return when {
        this["iterator"] != null -> this["iterator"]()
        isArrayish(r) -> r.unsafeCast<Array<*>>().iterator()
        else -> (r as Iterable<*>).iterator()
    }
}
"/** Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.collections
/** Groups elements from the [Grouping] source by key and counts elements in each group.
 * @return a [Map] associating the key of each group with the count of elements in the group.
 */
@sample samples.collections.Grouping.groupingByEachCount
@SinceKotlin("1.1")
public actual fun <T, K> Grouping<T, K>.eachCount(): Map<K, Int> = fold(0) { acc, _ -> acc + 1 }
/** Groups elements from the [Grouping] source by key and sums values provided by the [valueSelector] function for elements in each group.
 * @return a [Map] associating the key of each group with the count of element in the group.
 */
@SinceKotlin("1.1")
public inline fun <T, K> Grouping<T, K>.eachSumOf(valueSelector: (T) -> Int): Map<K, Int> = fold(0) { acc, e -> acc + valueSelector(e) }
"/** Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
@file:kotlin.jvm.JvmName("GroupingKt")
@file:kotlin.jvm.JvmMultifileClass
package kotlin.collections
/** Represents a source of elements with a [keyOf] function, which can be applied to each element to get its key.
 * A [Grouping] structure serves as an intermediate step in group-and-fold operations:
 * they group elements by their keys and then fold each group with some aggregating operation.
 * It is created by attaching `keySelector: (T) -> K` function to a source of elements.
 * To get an instance of [Grouping] use one of `groupingBy` extension functions:
 * - [Iterable.groupingBy]
 * - [Sequence.groupingBy]
 * - [Array.groupingBy]
 * - [CharSequence.groupingBy]
 * For the list of group-and-fold operations available, see the [extension functions](#extension-functions) for `Grouping`.
 */
@SinceKotlin("1.1")
public interface Grouping<T, out K> {
    /** Returns an [Iterator] over the elements of the source of this grouping.
 */
    fun sourceIterator(): Iterator<T>
    /** Extracts the key of an [element].
 */
    fun keyOf(element: T): K
}
}

```


Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current element as arguments, and stores the results in a new map.\n *\n * The key for each element is provided by the [Grouping.keyOf] function.\n *\n * @param operation

function is invoked on each element with the following parameters:\n * - `key`: the key of the group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group, can be `null` if it's the first `element` encountered in the group;\n * - `element`: the element from the source being aggregated;\n * - `first`: indicates whether it's the first `element` encountered in the group.\n *\n * @return a [Map] associating the key of each group with the result of aggregation of the group elements.\n * @sample

```
samples.collections.Grouping.aggregateByRadix\n *\n@SinceKotlin("1.1")\npublic inline fun <T, K, R>\n Grouping<T, K>.aggregate(\n operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R\n): Map<K, R> {\n return aggregateTo(mutableMapOf<K, R>(), operation)\n}\n\n/>\n *\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the previously accumulated value
```

and the current element as arguments,\n * and stores the results in the given [destination] map.\n *\n * The key for each element is provided by the [Grouping.keyOf] function.\n *\n * @param operation a function that is invoked on each element with the following parameters:\n * - `key`: the key of the group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group, can be `null` if it's the first `element` encountered in the group;\n * - `element`: the element from the source being aggregated;\n * - `first`: indicates whether it's the first `element` encountered in the group.\n *\n * If the [destination] map already has a value corresponding to some key,\n * then the elements being aggregated for that key are never considered as `first`.\n *\n * @return the [destination] map associating the key of each group with the result of aggregation of the group elements.\n * @sample

```
samples.collections.Grouping.aggregateByRadixTo\n *\n@SinceKotlin("1.1")\npublic inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.aggregateTo(\n destination: M,\n operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R\n): M {\n for (e in this.sourceIterator()) {\n val key = keyOf(e)\n val accumulator = destination[key]\n destination[key] = operation(key, accumulator, e, accumulator == null && !destination.containsKey(key))\n }\n return destination\n}\n\n/>\n *\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current element as arguments, and stores the results in a new map.\n * An initial value of accumulator is provided by [initialValueSelector] function.\n *\n * @param initialValueSelector a function that provides an initial value of accumulator for each group.\n * It's invoked with parameters:\n * - `key`: the key of the group;\n * - `element`: the first element
```

being encountered in that group.\n *\n * @param operation a function that is invoked on each element with the following parameters:\n * - `key`: the key of the group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group;\n * - `element`: the element from the source being accumulated.\n *\n * @return a [Map] associating the key of each group with the result of accumulating the group elements.\n * @sample

```
samples.collections.Grouping.foldByEvenLengthWithComputedInitialValue\n *\n@SinceKotlin("1.1")\npublic inline fun <T, K, R> Grouping<T, K>.fold(\n initialValueSelector: (key: K, element: T) -> R,\n operation: (key: K, accumulator: R, element: T) -> R\n): Map<K, R> =\n @Suppress("UNCHECKED_CAST")\n aggregate {\n key, acc, e, first -> operation(key, if (first) initialValueSelector(key, e) else acc as R, e)\n}\n\n/>\n *\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of accumulator is provided by [initialValueSelector] function.\n *\n * @param initialValueSelector a function that provides an initial value of accumulator for each group.\n * It's invoked with parameters:\n * - `key`: the key of the group;\n * - `element`: the first element being encountered in that group.\n *\n * If the [destination] map already has a value corresponding to some key, that value is used as an initial value of\n * the accumulator for that group and the [initialValueSelector] function is not called for that group.\n *\n * @param operation a function that is invoked on each element with the following parameters:\n * -
```

``key``: the key of the group this element belongs to;
``accumulator``: the current value of the accumulator of the group;
``element``: the element from the source being accumulated.

`* @return` the [destination] map associating the key of each group with the result of accumulating the group elements.
`* @sample` samples.collections.Grouping.foldByEvenLengthWithComputedInitialValueTo

```

*\n@SinceKotlin("1.1")\npublic inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n
destination: M,\n  initialValueSelector: (key: K, element: T) -> R,\n  operation: (key: K, accumulator: R, element:
T) -> R\n): M =\n  @Suppress("UNCHECKED_CAST")\n  aggregateTo(destination) { key, acc, e, first ->
operation(key, if (first) initialValueSelector(key, e) else acc as R, e) }\n\n/**\n * Groups elements from the
[Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the
previously accumulated value and the current element as arguments, and stores the results in a new map.\n * An
initial value of accumulator is the same [initialValue] for each group.\n *\n * @param operation a function that is
invoked
on each element with the following parameters:\n * - `accumulator`: the current value of the accumulator of the
group;\n * - `element`: the element from the source being accumulated.\n *\n * @return a [Map] associating the key
of each group with the result of accumulating the group elements.\n * @sample
samples.collections.Grouping.foldByEvenLengthWithConstantInitialValue\n *\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R> Grouping<T, K>.fold(\n  initialValue: R,\n  operation: (accumulator: R, element: T) -> R\n):
Map<K, R> =\n  @Suppress("UNCHECKED_CAST")\n  aggregate { _, acc, e, first -> operation(if (first)
initialValue else acc as R, e) }\n\n/**\n * Groups elements from the [Grouping] source by key and applies
[operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current
element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of accumulator
is the same [initialValue]
for each group.\n *\n * If the [destination] map already has a value corresponding to the key of some group,\n *
that value is used as an initial value of the accumulator for that group.\n *\n * @param operation a function that is
invoked on each element with the following parameters:\n * - `accumulator`: the current value of the accumulator
of the group;\n * - `element`: the element from the source being accumulated.\n *\n * @return the [destination]
map associating the key of each group with the result of accumulating the group elements.\n * @sample
samples.collections.Grouping.foldByEvenLengthWithConstantInitialValueTo\n *\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n  destination: M,\n  initialValue: R,\n
operation: (accumulator: R, element: T) -> R\n): M =\n  @Suppress("UNCHECKED_CAST")\n  aggregateTo(destination) { _, acc, e, first -> operation(if (first) initialValue else acc as R, e) }\n\n\n/**\n *
Groups elements from the [Grouping] source by key and applies the reducing [operation] to the elements of each
group\n * sequentially starting from the second element of the group,\n * passing the previously accumulated value
and the current element as arguments,\n * and stores the results in a new map.\n * An initial value of accumulator
is the first element of the group.\n *\n * @param operation a function that is invoked on each subsequent element
of the group with the following parameters:\n * - `key`: the key of the group this element belongs to;\n * -
`accumulator`: the current value of the accumulator of the group;\n * - `element`: the element from the source being
accumulated.\n *\n * @return a [Map] associating the key of each group with the result of accumulating the group
elements.\n * @sample samples.collections.Grouping.reduceByMaxVowels\n *\n@SinceKotlin("1.1")\npublic
inline fun <S, T : S, K> Grouping<T, K>.reduce(\n  operation: (key: K, accumulator: S, element:
T) -> S\n): Map<K, S> =\n  aggregate { key, acc, e, first ->\n    @Suppress("UNCHECKED_CAST")\n    if
(first) e else operation(key, acc as S, e)  }\n\n\n/**\n * Groups elements from the [Grouping] source by key and
applies the reducing [operation] to the elements of each group\n * sequentially starting from the second element
of the group,\n * passing the previously accumulated value and the current element as arguments,\n * and stores the
results in the given [destination] map.\n * An initial value of accumulator is the first element of the group.\n *\n *
If the [destination] map already has a value corresponding to the key of some group,\n * that value is used as an
initial value of the accumulator for that group and the first element of that group is also\n * subjected to the
[operation].\n *\n * @param operation a function that is invoked on each subsequent element of the group with the

```

following parameters:

- `accumulator`: the current value of the accumulator of the group;
- `element`: the element from the source being folded;
- `@return` the [destination] map associating the key of each group with the result of accumulating the group elements.

`@sample`

```

samples.collections.Grouping.reduceByMaxVowelsTo
^@SinceKotlin("1.1")
public inline fun <S, T : S, K, M : MutableMap<in K, S>> Grouping<T, K>.reduceTo(
    destination: M,
    operation: (key: K, accumulator: S, element: T) -> S): M =
    aggregateTo(destination) { key, acc, e, first ->
        @Suppress("UNCHECKED_CAST")
        if (first) e else operation(key, acc as S, e)
    }
}
^@n/n/**
 * Groups elements from the [Grouping] source by key and counts elements in each group to the given [destination] map.
 * If the [destination] map already has a value corresponding to the key of some group, that value is used as an initial value of the counter for that group.
 * @return the [destination] map associating the key of each group with the count of elements in the group.
 */
^@sample samples.collections.Grouping.groupingByEachCount
^@n/n@SinceKotlin("1.1")
public fun <T, K, M : MutableMap<in K, Int>> Grouping<T, K>.eachCountTo(destination: M): M =
    foldTo(destination, 0) { acc, _ -> acc + 1 }
}
^@n/n/**
 * Groups elements from the [Grouping] source by key and sums values provided by the [valueSelector] function for elements in each group to the given [destination] map.
 * If the [destination] map already has a value corresponding to the key of some group, that value is used as an initial value of the sum for that group.
 * @return the [destination] map associating the key of each group with the sum of elements in the group.
 */
^@n/n@SinceKotlin("1.1")
public inline fun <T, K, M : MutableMap<in K, Int>> Grouping<T, K>.eachSumOfTo(destination: M, valueSelector: (T) -> Int): M =
    foldTo(destination, 0) { acc, e -> acc + valueSelector(e) }
}
^@n/n/**
 * TODO: sum by long and by double overloads
 */
public inline fun <T, K, M : MutableMap<in K, Long>> Grouping<T, K>.sumEachByLongTo(destination: M, valueSelector: (T) -> Long): M =
    foldTo(destination, 0L) { acc, e -> acc + valueSelector(e) }
}
public inline fun <T, K> Grouping<T, K>.sumEachByLong(valueSelector: (T) -> Long): Map<K, Long> =
    fold(0L) { acc, e -> acc + valueSelector(e) }
}
public inline fun <T, K, M : MutableMap<in K, Double>> Grouping<T, K>.sumEachByDoubleTo(destination: M, valueSelector: (T) -> Double): M =
    foldTo(destination, 0.0) { acc, e -> acc + valueSelector(e) }
}
public inline fun <T, K> Grouping<T, K>.sumEachByDouble(valueSelector: (T) -> Double): Map<K, Double> =
    fold(0.0) { acc, e -> acc + valueSelector(e) }
}
^@n/n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
^@n/npackage
kotlin.js
^@Retention(AnnotationRetention.BINARY)
^@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY)
internal annotation class JsPolyfill(val implementation: String)
}
^@n/n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
^@n/npackage
kotlin.js
^@n/n/**
 * An interface for indexing access to a collection of key-value pairs, where type of key is [String] and type of value is [Any?][Any].
 */
public external interface Json {
    /**
     * Calls to the function will be translated to indexing operation (square brackets) on the receiver with [propertyName] as the argument.
     * E.g. for next code:
     * ```kotlin
     * fun test(j: Json, p: String) = j["prop"] + j.get(p)
     * ```
     * will be generated:
     * ```js
     * function test(j, p) {
     *     return j["prop"] + j[p];
     * }
     * ```
     * operator fun get(propertyName: String): Any?
     * Calls of the function will be translated to an assignment of [value] to the receiver indexed (with square brackets/index operation) with [propertyName].
     * E.g. for the following code:
     * ```kotlin
     * fun test(j: Json, p: String, newValue: Any) {
     *     j["prop"] = 1
     *     j.set(p, newValue)
     * }
     * ```
     * will be generated:
     * ```js
     * function test(j, p, newValue) {
     *     j["prop"] = 1;
     *     j[p] = newValue;
     * }
     * ```
     * operator fun set(propertyName: String, value: Any?): Unit
     * Returns a simple JavaScript object (as [Json]) using provided key-value pairs as names and values of its properties.
     */
    public fun json(vararg pairs: Pair<String, Any?>): Json {
        val res: dynamic = js("{}")
        for ((name, value) in pairs) {
            res[name] = value
        }
        return res
    }
}
^@n/n/**
 * Adds

```

```

key-value pairs from [other] to [this].\n * Returns the original receiver.\n */\npublic fun Json.add(other: Json): Json
{\n    val keys: Array<String> = js("Object").keys(other)\n    for (key in keys) {\n        if
(other.asDynamic().hasOwnProperty(key)) {\n            this[key] = other[key];\n        }\n    }\n    return
this}\n}\n\n/**\n * Exposes the JavaScript [JSON object](https://developer.mozilla.org/en-
US/docs/Web/JavaScript/Reference/Global_Objects/JSON) to Kotlin.\n
*/\n@Suppress("NOT_DOCUMENTED")\npublic external object JSON {\n    public fun stringify(o: Any?):
String\n    public fun stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?): String)\n    public fun
stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? = definedExternally, space: Int): String\n    public
fun stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? = definedExternally, space: String): String\n
    public fun stringify(o: Any?, replacer: Array<String>): String\n
        public fun stringify(o: Any?, replacer: Array<String>, space: Int): String\n    public fun stringify(o: Any?,
replacer: Array<String>, space: String): String\n\n    public fun <T> parse(text: String): T\n    public fun <T>
parse(text: String, reviver: ((key: String, value: Any?) -> Any?): T)\n}\n\n"/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.math\n\nimport
kotlin.internal.InlineOnly\nimport kotlin.js.JsMath as nativeMath\n\n// region ===== Double Math
=====
\n\n/** Computes the sine of the angle [x] given in
radians.\n */\n * Special cases:\n * - `sin(NaN|+Inf|-Inf)` is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sin(x: Double): Double =
nativeMath.sin(x)\n\n/** Computes the cosine of the angle [x] given in radians.\n
*/\n * Special cases:\n * - `cos(NaN|+Inf|-Inf)` is `NaN`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual
inline fun cos(x: Double): Double = nativeMath.cos(x)\n\n/** Computes the tangent of the angle [x] given in
radians.\n */\n * Special cases:\n * - `tan(NaN|+Inf|-Inf)` is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tan(x: Double): Double =
nativeMath.tan(x)\n\n/** Computes the arc sine of the value [x];\n */\n * the returned value is an angle in the range
from `-PI/2` to `PI/2` radians.\n */\n * Special cases:\n * - `asin(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asin(x: Double): Double =
nativeMath.asin(x)\n\n/** Computes the arc cosine of the value [x];\n */\n * the returned value is an angle in the
range from `0.0` to `PI` radians.\n */\n * Special cases:\n * - `acos(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual
inline fun acos(x: Double): Double = nativeMath.acos(x)\n\n/** Computes the arc tangent of the value [x];\n */\n *
the returned value is an angle in the range from `-PI/2` to `PI/2` radians.\n */\n * Special cases:\n * - `atan(NaN)`
is `NaN`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atan(x: Double): Double =
nativeMath.atan(x)\n\n/** Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond\n */\n * to the
rectangular coordinates `(x, y)` by computing the arc tangent of the value [y] / [x];\n */\n * the returned value is an
angle in the range from `-PI` to `PI` radians.\n */\n * Special cases:\n * - `atan2(0.0, 0.0)` is `0.0`\n * - `atan2(0.0, x)`
is `0.0` for `x > 0` and `PI` for `x < 0`\n * - `atan2(-0.0, x)` is `-0.0` for `x > 0` and `-PI` for `x < 0`\n * - `atan2(y,
+Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for `-Inf < y < 0`\n * - `atan2(y, -Inf)` is `PI` for `0 < y < +Inf` and `-PI`
for `-Inf < y < 0`\n * - `atan2(y, 0.0)`
is `PI/2` for `y > 0` and `-PI/2` for `y < 0`\n * - `atan2(+Inf, x)` is `PI/2` for finite `x`\n * - `atan2(-Inf, x)` is
`-PI/2` for finite `x`\n * - `atan2(NaN, x)` and `atan2(y, NaN)` is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atan2(y: Double, x: Double): Double =
nativeMath.atan2(y, x)\n\n/** Computes the hyperbolic sine of the value [x].\n */\n * Special cases:\n * -
`sinh(NaN)` is `NaN`\n * - `sinh(+Inf)` is `+Inf`\n * - `sinh(-Inf)` is `-Inf`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sinh(x: Double): Double = nativeSinh(x)\n\n/**
Computes the hyperbolic cosine of the value [x].\n */\n * Special cases:\n * - `cosh(NaN)` is `NaN`\n * -
`cosh(+Inf|-Inf)` is `+Inf`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cosh(x: Double):
Double = nativeCosh(x)\n\n/** Computes the hyperbolic tangent of the value [x].\n */\n * Special cases:\n * -

```

`tanh(NaN)` is `NaN` * `-tanh(+Inf)` is `-1.0` * `-tanh(-Inf)` is `-1.0` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun tanh(x: Double): Double = nativeTanh(x)` * Computes the inverse hyperbolic sine of the value [x]. * The returned value is `y` such that `sinh(y) == x`. * Special cases: * `asinh(NaN)` is `NaN` * `asinh(+Inf)` is `+Inf` * `asinh(-Inf)` is `-Inf` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun asinh(x: Double): Double = nativeAsinh(x)` * Computes the inverse hyperbolic cosine of the value [x]. * The returned value is positive `y` such that `cosh(y) == x`. * Special cases: * `acosh(NaN)` is `NaN` * `acosh(x)` is `NaN` when `x < 1` * `acosh(+Inf)` is `+Inf` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun acosh(x: Double): Double = nativeAcosh(x)` * Computes the inverse hyperbolic tangent of the value [x]. * The returned value is `y` such that `tanh(y) == x`. * Special cases: * `tanh(NaN)` is `NaN` * `tanh(x)` is `NaN` when `x > 1` or `x < -1` * `tanh(1.0)` is `+Inf` * `tanh(-1.0)` is `-Inf` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun atanh(x: Double): Double = nativeAtanh(x)` * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow. * Special cases: * returns `+Inf` if any of arguments is infinite * returns `NaN` if any of arguments is `NaN` and the other is not infinite * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun hypot(x: Double, y: Double): Double = nativeHypot(x, y)` * Computes the positive square root of the value [x]. * Special cases: * `sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun sqrt(x: Double): Double = nativeMath.sqrt(x)` * Computes Euler's number `e` raised to the power of the value [x]. * Special cases: * `exp(NaN)` is `NaN` * `exp(+Inf)` is `+Inf` * `exp(-Inf)` is `0.0` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun exp(x: Double): Double = nativeMath.exp(x)` * Computes `exp(x) - 1`. * This function can be implemented to produce more precise result for [x] near zero. * Special cases: * `expm1(NaN)` is `NaN` * `expm1(+Inf)` is `+Inf` * `expm1(-Inf)` is `-1.0` * @see [exp] function. * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun expm1(x: Double): Double = nativeExp1(x)` * Computes the logarithm of the value [x] to the given [base]. * Special cases: * `log(x, b)` is `NaN` if either `x` or `b` are `NaN` * `log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0` * `log(+Inf, +Inf)` is `NaN` * `log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1` * `log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b < 1` * See also logarithm functions for common fixed bases: [ln], [log10] and [log2]. * `^` `@SinceKotlin("1.2")` `public actual fun log(x: Double, base: Double): Double { if (base <= 0.0 || base == 1.0) return Double.NaN return nativeMath.log(x) / nativeMath.log(base)}` * Computes the natural logarithm (base `E`) of the value [x]. * Special cases: * `ln(NaN)` is `NaN` * `ln(x)` is `NaN` when `x < 0.0` * `ln(+Inf)` is `+Inf` * `ln(0.0)` is `-Inf` * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun ln(x: Double): Double = nativeMath.log(x)` * Computes the common logarithm (base 10) of the value [x]. * @see [ln] function for special cases. * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun log10(x: Double): Double = nativeLog10(x)` * Computes the binary logarithm (base 2) of the value [x]. * @see [ln] function for special cases. * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun log2(x: Double): Double = nativeLog2(x)` * Computes `ln(x + 1)`. * This function can be implemented to produce more precise result for [x] near zero. * Special cases: * `ln1p(NaN)` is `NaN` * `ln1p(x)` is `NaN` where `x < -1.0` * `ln1p(-1.0)` is `-Inf` * `ln1p(+Inf)` is `+Inf` * @see [ln] function * @see [expm1] function * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun ln1p(x: Double): Double = nativeLog1p(x)` * Rounds the given value [x] to an integer towards positive infinity. * @return the smallest double value that is greater than or equal to the given value [x] and is a mathematical integer. * Special cases: * `ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer. * `^` `@SinceKotlin("1.2")` `@InlineOnly` `public actual inline fun ceil(x: Double): Double = nativeMath.ceil(x)` * Rounds the given value [x] to an integer towards negative infinity. * @return the

largest

double value that is smaller than or equal to the given value [x] and is a mathematical integer.
Special cases: $\text{floor}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.

```
@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun floor(x: Double): Double = nativeMath.floor(x)\n\n/**\n * Rounds the given value [x] to an integer towards zero.\n * @return the value [x] having its fractional part truncated.\n * Special cases:\n * -  $\text{truncate}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun truncate(x: Double): Double = nativeTrunc(x)\n\n/**\n * Rounds the given value [x] towards the closest integer with ties rounded towards even integer.\n * Special cases:\n * -  $\text{round}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.\n */\n@SinceKotlin("1.2")\npublic actual fun round(x: Double): Double {\n    if (x % 0.5 != 0.0) {\n        return nativeMath.round(x)\n    }\n    val floor = floor(x)\n    return if (floor % 2 == 0.0) floor else ceil(x)\n}\n\n/**\n * Returns the absolute value of the given value [x].\n * Special cases:\n * -  $\text{abs}(\text{NaN})$  is  $\text{NaN}$ \n * @see absoluteValue extension property for [Double]\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun abs(x: Double): Double = nativeMath.abs(x)\n\n/**\n * Returns the sign of the given value [x]:\n * -  $-1.0$  if the value is negative,\n * -  $0.0$  if the value is zero,\n * -  $1.0$  if the value is positive\n * Special case:\n * -  $\text{sign}(\text{NaN})$  is  $\text{NaN}$ \n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sign(x: Double): Double = nativeSign(x)\n\n/**\n * Returns the smaller of two values.\n * If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ .  
@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Double, b: Double): Double = nativeMath.min(a, b)\n\n/**\n * Returns the greater of two values.\n * If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ .  
@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun max(a: Double, b: Double): Double = nativeMath.max(a, b)\n\n// extensions\n\n/**\n * Raises this value to the power [x].\n * Special cases:\n * -  $\text{b.pow}(0.0)$  is  $1.0$ \n * -  $\text{b.pow}(1.0) == b$ \n * -  $\text{b.pow}(\text{NaN})$  is  $\text{NaN}$ \n * -  $\text{NaN.pow}(x)$  is  $\text{NaN}$  for  $x != 0.0$ \n * -  $\text{b.pow}(\text{Inf})$  is  $\text{NaN}$  for  $\text{abs}(b) == 1.0$ \n * -  $\text{b.pow}(x)$  is  $\text{NaN}$  for  $b < 0$  and  $x$  is finite and not an integer\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.pow(x: Double): Double = nativeMath.pow(this, x)\n\n/**\n * Raises this value to the integer power [n].\n * See the other overload of [pow] for details.\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.pow(n: Int): Double = nativeMath.pow(this, n.toDouble())\n\n/**\n * Returns the absolute value of this value.\n * Special cases:\n * -  $\text{NaN.absoluteValue}$  is  $\text{NaN}$ \n * @see abs function\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Double.absoluteValue: Double get() = nativeMath.abs(this)\n\n/**\n * Returns the sign of this value:\n * -  $-1.0$  if the value is negative,\n * -  $0.0$  if the value is zero,\n * -  $1.0$  if the value is positive\n * Special case:\n * -  $\text{NaN.sign}$  is  $\text{NaN}$ \n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Double.sign: Double get() = nativeSign(this)\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.withSign(sign: Int): Double = this.withSign(sign.toDouble())\n\n/**\n * Returns the ulp (unit in the last place) of this value.\n * An ulp is a positive distance between this value and the next nearest [Double] value larger in magnitude.\n * Special Cases:\n * -  $\text{NaN.ulp}$  is  $\text{NaN}$ \n * -  $x.ulp$  is  $+\text{Inf}$  when  $x$  is  $+\text{Inf}$  or  $-\text{Inf}$ \n * -  $0.0.ulp$  is  $\text{Double.MIN\_VALUE}$ \n */\n@SinceKotlin("1.2")\npublic actual val Double.ulp: Double get() = when {\n    this < 0 -> (-this).ulp\n    this.isNaN() || this == Double.POSITIVE_INFINITY -> this\n    this == Double.MAX\_VALUE -> this - this.nextDown()\n    else -> this.nextUp() - this\n}\n\n/**\n * Returns the [Double] value nearest to this value in direction of positive infinity.\n */\n@SinceKotlin("1.2")\npublic actual fun Double.nextUp(): Double = when {\n    this.isNaN() || this == Double.POSITIVE_INFINITY -> this\n    this == 0.0 -> Double.MIN\_VALUE\n    else -> Double.fromBits(this.toRawBits() + if (this > 0) 1 else -1)\n}\n\n/**\n * Returns the [Double] value nearest to this value in direction of negative infinity.\n */\n@SinceKotlin("1.2")\npublic actual fun Double.nextDown(): Double = when {\n    this.isNaN() || this == Double.NEGATIVE\_INFINITY -> this\n    this == 0.0 -> -
```


- `sinh(-Inf)` is `-Inf`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sinh(x: Float): Float = nativeSinh(x.toDouble()).toFloat()\n\n**\n`
 * Computes the hyperbolic cosine of the value [x].
 * Special cases:
 * - `cosh(NaN)` is `NaN`
 * - `cosh(+Inf|-Inf)` is `+Inf`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cosh(x: Float): Float = nativeCosh(x.toDouble()).toFloat()\n\n**\n`
 * Computes the hyperbolic tangent of the value [x].
 * Special cases:
 * - `tanh(NaN)` is `NaN`
 * - `tanh(+Inf)` is `1.0`
 * - `tanh(-Inf)` is `-1.0`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tanh(x: Float): Float = nativeTanh(x.toDouble()).toFloat()\n\n**\n`
 * Computes the inverse hyperbolic sine of the value [x].
 * The returned value is `y` such that `sinh(y) == x`.
 * Special cases:
 * - `asinh(NaN)` is `NaN`
 * - `asinh(+Inf)` is `+Inf`
 * - `asinh(-Inf)` is `-Inf`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asinh(x: Float): Float = nativeAsinh(x.toDouble()).toFloat()\n\n**\n`
 * Computes the inverse hyperbolic cosine of the value [x].
 * The returned value is positive `y` such that `cosh(y) == x`.
 * Special cases:
 * - `acosh(NaN)` is `NaN`
 * - `acosh(x)` is `NaN` when `x < 1`
 * - `acosh(+Inf)` is `+Inf`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun acosh(x: Float): Float = nativeAcosh(x.toDouble()).toFloat()\n\n**\n`
 * Computes the inverse hyperbolic tangent of the value [x].
 * The returned value is `y` such that `tanh(y) == x`.
 * Special cases:
 * - `tanh(NaN)` is `NaN`
 * - `tanh(x)` is `NaN` when `x > 1` or `x < -1`
 * - `tanh(1.0)` is `+Inf`
 * - `tanh(-1.0)` is `-Inf`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atanh(x: Float): Float = nativeAtanh(x.toDouble()).toFloat()\n\n**\n`
 * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.
 * Special cases:
 * - returns `+Inf` if any of arguments is infinite
 * - returns `NaN` if any of arguments is `NaN` and the other is not infinite
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun hypot(x: Float, y: Float): Float = nativeHypot(x.toDouble(), y.toDouble()).toFloat()\n\n**\n`
 * Computes the positive square root of the value [x].
 * Special cases:
 * - `sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sqrt(x: Float): Float = nativeMath.sqrt(x.toDouble()).toFloat()\n\n**\n`
 * Computes Euler's number `e` raised to the power of the value [x].
 * Special cases:
 * - `exp(NaN)` is `NaN`
 * - `exp(+Inf)` is `+Inf`
 * - `exp(-Inf)` is `0.0`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun exp(x: Float): Float = nativeMath.exp(x.toDouble()).toFloat()\n\n**\n`
 * Computes `exp(x) - 1`.
 * This function can be implemented to produce more precise result for [x] near zero.
 * Special cases:
 * - `expm1(NaN)` is `NaN`
 * - `expm1(+Inf)` is `+Inf`
 * - `expm1(-Inf)` is `-1.0`
 * @see
 [exp] function.
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun expm1(x: Float): Float = nativeExp1(x.toDouble()).toFloat()\n\n**\n`
 * Computes the logarithm of the value [x] to the given [base].
 * Special cases:
 * - `log(x, b)` is `NaN` if either `x` or `b` are `NaN`
 * - `log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0`
 * - `log(+Inf, +Inf)` is `NaN`
 * - `log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1`
 * - `log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1`
 * See also logarithm functions for common fixed bases: [ln], [log10] and [log2].
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log(x: Float, base: Float): Float = log(x.toDouble(), base.toDouble()).toFloat()\n\n**\n`
 * Computes the natural logarithm (base `E`) of the value [x].
 * Special cases:
 * - `ln(NaN)` is `NaN`
 * - `ln(x)` is `NaN` when `x < 0.0`
 * - `ln(+Inf)` is `+Inf`
 * - `ln(0.0)` is `-Inf`
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ln(x: Float): Float = nativeMath.log(x.toDouble()).toFloat()\n\n**\n`
 * Computes the common logarithm (base 10) of the value [x].
 * @see [ln] function for special cases.
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log10(x: Float): Float = nativeLog10(x.toDouble()).toFloat()\n\n**\n`
 * Computes the binary logarithm (base 2) of the value [x].
 * @see [ln] function for special cases.
`*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log2(x: Float): Float = nativeLog2(x.toDouble()).toFloat()\n\n**\n`
 * Computes `ln(a + 1)`.
 * This function can be implemented to produce more precise result for [x] near zero.
 * Special cases:
 * - `ln1p(NaN)` is `NaN`
 * - `ln1p(x)` is `NaN` where `x < -1.0`
 * - `ln1p(-1.0)` is `-Inf`
 * - `ln1p(+Inf)` is `+Inf`
 * @see [ln]


```

function\n * @see [expm1] function\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline
fun ln1p(x: Float): Float = nativeLog1p(x.toDouble()).toFloat()\n\n/**\n * Rounds the given value [x] to an integer
towards positive infinity.\n\n * @return the smallest Float value that is greater than or equal to the given value [x]
and is a mathematical integer.\n\n * Special cases:\n * - `ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or
already a mathematical integer.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ceil(x: Float):
Float = nativeMath.ceil(x.toDouble()).toFloat()\n\n/**\n * Rounds the given value [x] to an integer towards negative
infinity.\n\n * @return the largest Float value that is smaller than or equal to the given value [x] and is a
mathematical integer.\n\n * Special cases:\n * - `floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a
mathematical integer.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun floor(x: Float): Float =
nativeMath.floor(x.toDouble()).toFloat()\n\n/**\n * Rounds the
given value [x] to an integer towards zero.\n\n * @return the value [x] having its fractional part truncated.\n\n * Special cases:\n * - `truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun truncate(x: Float): Float =
truncate(x.toDouble()).toFloat()\n\n/**\n * Rounds the given value [x] towards the closest integer with ties rounded
towards even integer.\n\n * Special cases:\n * - `round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already
a mathematical integer.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun round(x: Float): Float =
round(x.toDouble()).toFloat()\n\n/**\n * Returns the absolute value of the given value [x].\n\n * Special cases:\n
* - `abs(NaN)` is `NaN`\n\n * @see absoluteValue extension property for [Float]\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun abs(x: Float): Float =
nativeMath.abs(x.toDouble()).toFloat()\n\n/**\n
* Returns the sign of the given value [x]:\n * - `-1.0` if the value is negative,\n * - zero if the value is zero,\n * -
`1.0` if the value is positive\n\n * Special case:\n * - `sign(NaN)` is `NaN`\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sign(x: Float): Float =
nativeSign(x.toDouble()).toFloat()\n\n/**\n * Returns the smaller of two values.\n\n * If either value is `NaN`,
then the result is `NaN`.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Float, b: Float):
Float = nativeMath.min(a, b)\n\n/**\n * Returns the greater of two values.\n\n * If either value is `NaN`, then the
result is `NaN`.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun max(a: Float, b: Float): Float =
nativeMath.max(a, b)\n\n// extensions\n\n/**\n * Raises this value to the power [x].\n\n * Special cases:\n * -
`b.pow(0.0)` is `1.0`\n * - `b.pow(1.0) == b`\n * - `b.pow(NaN)` is `NaN`\n *
- `NaN.pow(x)` is `NaN` for `x != 0.0`\n * - `b.pow(Inf)` is `NaN` for `abs(b) == 1.0`\n * - `b.pow(x)` is `NaN`
for `b < 0` and `x` is finite and not an integer\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
Float.pow(x: Float): Float = nativeMath.pow(this.toDouble(), x.toDouble()).toFloat()\n\n/**\n * Raises this value to
the integer power [n].\n\n * See the other overload of [pow] for details.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.pow(n: Int): Float =
nativeMath.pow(this.toDouble(), n.toDouble()).toFloat()\n\n/**\n * Returns the absolute value of this value.\n\n * Special cases:\n * - `NaN.absoluteValue` is `NaN`\n\n * @see abs function\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Float.absoluteValue: Float get() =
nativeMath.abs(this.toDouble()).toFloat()\n\n/**\n * Returns the sign of this value:\n * - `-1.0` if the value is
negative,\n * - zero if the value is zero,\n * - `1.0` if the
value is positive\n\n * Special case:\n * - `NaN.sign` is `NaN`\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Float.sign: Float get() =
nativeSign(this.toDouble()).toFloat()\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.\n\n
* If [sign] is `NaN` the sign of the result is undefined.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual
inline fun Float.withSign(sign: Float): Float = this.toDouble().withSign(sign.toDouble()).toFloat()\n\n/**\n * Returns
this value with the sign bit same as of the [sign] value.\n\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic
actual inline fun Float.withSign(sign: Int): Float = this.toDouble().withSign(sign.toDouble()).toFloat()\n\n/**\n * Rounds
this [Float] value to the nearest integer and converts the result to [Int].\n * Ties are rounded towards positive
infinity.\n\n * Special cases:\n * - `x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`\n * -

```

```

`x.roundToInt() == Int.MIN_VALUE`
when `x < Int.MIN_VALUE` \n * \n * @throws IllegalArgumentException when this value is `NaN` \n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.roundToInt(): Int =
toDouble().roundToInt()\n\n/** \n * Rounds this [Float] value to the nearest integer and converts the result to
[Long]. \n * Ties are rounded towards positive infinity. \n * \n * Special cases: \n * - `x.roundToLong() ==
Long.MAX_VALUE` when `x > Long.MAX_VALUE` \n * - `x.roundToLong() == Long.MIN_VALUE` when `x
< Long.MIN_VALUE` \n * \n * @throws IllegalArgumentException when this value is `NaN` \n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.roundToLong(): Long =
toDouble().roundToLong()\n\n// endregion\n\n// region ===== Integer Math
===== \n\n/** \n * Returns the absolute value of the given value
[n]. \n * \n * Special cases: \n * - `abs(Int.MIN_VALUE)` is `Int.MIN_VALUE` due to an overflow \n * \n * @see
absoluteValue extension property
for [Int] \n * \n // TODO: remove manual 'or' when KT-19290 is fixed\n@SinceKotlin("1.2")\npublic actual fun
abs(n: Int): Int = if (n < 0) (-n or 0) else n\n\n/** \n * Returns the smaller of two values. \n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Int, b: Int): Int = nativeMath.min(a,
b)\n\n/** \n * Returns the greater of two values. \n * \n @SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
max(a: Int, b: Int): Int = nativeMath.max(a, b)\n\n/** \n * Returns the absolute value of this value. \n * \n * Special
cases: \n * - `Int.MIN_VALUE.absoluteValue` is `Int.MIN_VALUE` due to an overflow \n * \n * @see abs
function \n * \n @SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Int.absoluteValue: Int get() =
abs(this)\n\n/** \n * Returns the sign of this value: \n * - `-1` if the value is negative, \n * - `0` if the value is zero, \n
* - `1` if the value is positive \n * \n @SinceKotlin("1.2")\npublic actual val Int.sign: Int get() = when { \n
this < 0 -> -1 \n this > 0 -> 1 \n else -> 0 } \n\n\n/** \n * Returns the absolute value of the given value [n]. \n
*\n * Special cases: \n * - `abs(Long.MIN_VALUE)` is `Long.MIN_VALUE` due to an overflow \n * \n * @see
absoluteValue extension property for [Long] \n * \n @SinceKotlin("1.2")\npublic actual fun abs(n: Long): Long = if
(n < 0) -n else n\n\n/** \n * Returns the smaller of two values. \n
*\n@SinceKotlin("1.2")\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun min(a: Long, b:
Long): Long = if (a <= b) a else b\n\n/** \n * Returns the greater of two values. \n
*\n@SinceKotlin("1.2")\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun max(a: Long, b:
Long): Long = if (a >= b) a else b\n\n/** \n * Returns the absolute value of this value. \n * \n * Special cases: \n * -
`Long.MIN_VALUE.absoluteValue` is `Long.MIN_VALUE` due to an overflow \n * \n * @see abs function \n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Long.absoluteValue: Long
get() = abs(this)\n\n/** \n * Returns the sign of this value: \n * - `-1` if the value is negative, \n * - `0` if the value
is zero, \n * - `1` if the value is positive \n * \n @SinceKotlin("1.2")\npublic actual val Long.sign: Int get() = when
{ \n this < 0 -> -1 \n this > 0 -> 1 \n else -> 0 } \n\n\n// endregion \n", "/* \n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file. \n * \n @npackage kotlin\n\n/** \n * Returns `true` if the
specified number is a \n * Not-a-Number (NaN) value, `false` otherwise. \n * \n @npublic actual fun Double.isNaN():
Boolean = this != this\n\n/** \n * Returns `true` if the specified number is a \n * Not-a-Number (NaN) value, `false`
otherwise. \n * \n @npublic actual fun Float.isNaN(): Boolean = this != this\n\n/** \n * Returns `true` if this value is
infinitely large in magnitude. \n * \n @npublic actual fun Double.isInfinite():
Boolean = this == Double.POSITIVE_INFINITY || this == Double.NEGATIVE_INFINITY\n\n/** \n * Returns
`true` if this value is infinitely large in magnitude. \n * \n @npublic actual fun Float.isInfinite(): Boolean = this ==
Float.POSITIVE_INFINITY || this == Float.NEGATIVE_INFINITY\n\n/** \n * Returns `true` if the argument is a
finite floating-point value; returns `false` otherwise (for `NaN` and infinity arguments). \n * \n @npublic actual fun
Double.isFinite(): Boolean = !isInfinite() && !isNaN()\n\n/** \n * Returns `true` if the argument is a finite floating-
point value; returns `false` otherwise (for `NaN` and infinity arguments). \n * \n @npublic actual fun Float.isFinite():
Boolean = !isInfinite() && !isNaN()\n\n/** \n * Counts the number of set bits in the binary representation of this
[Int] number. \n * \n @SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun

```

```

Int.countOneBits(): Int {
    // Hacker's Delight 5-1 algorithm
    var v = this
    v = (v and 0x55555555) + (v.ushr(1) and 0x55555555)
    v = (v and 0x33333333) + (v.ushr(2) and 0x33333333)
    v = (v and 0x0F0F0F0F) + (v.ushr(4) and 0x0F0F0F0F)
    v = (v and 0x00FF00FF) + (v.ushr(8) and 0x00FF00FF)
    v = (v and 0x0000FFFF) + (v.ushr(16))
    return v
}

/**
 * Counts the number of consecutive most
 * significant bits that are zero in the binary representation of this [Int] number.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public actual inline fun Int.countLeadingZeroBits(): Int = nativeClz32(this)

/**
 * Counts the number of consecutive
 * least significant bits that are zero in the binary representation of this [Int] number.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public actual fun
Int.countTrailingZeroBits(): Int =
    // Hacker's Delight 5-4 algorithm for expressing countTrailingZeroBits with
    countLeadingZeroBits
    Int.SIZE_BITS - (this or -this).inv().countLeadingZeroBits()

    /**
     * Returns a number having a single bit set in the position of the most significant set bit of this [Int] number,
     * or zero, if this number is zero.
     */
    @SinceKotlin("1.4")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Int.takeHighestOneBit(): Int =
        if (this == 0) 0 else 1.shl(Int.SIZE_BITS - 1 - countLeadingZeroBits())

    /**
     * Returns a number having a single bit set in the position of the least significant set bit of this [Int] number,
     * or zero, if this number is zero.
     */
    @SinceKotlin("1.4")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Int.takeLowestOneBit(): Int =
        // Hacker's Delight 2-1 algorithm for isolating rightmost 1-bit
        this and -
        this

    /**
     * Rotates the binary representation of this [Int] number left by the specified [bitCount] number of
     * bits.
     * The most significant bits pushed out from the left side reenter the number as the least significant bits on the
     * right side.
     * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:
     * number.rotateLeft(-n) == number.rotateRight(n)
     * Rotating by a multiple of [Int.SIZE_BITS] (32) returns
     * the same number, or more generally
     * number.rotateLeft(n) == number.rotateLeft(n % 32)
     */
    @SinceKotlin("1.6")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Int.rotateLeft(bitCount: Int): Int =
        shl(bitCount) or ushr(Int.SIZE_BITS - bitCount)

    /**
     * Rotates the
     * binary representation of this [Int] number right by the specified [bitCount] number of bits.
     * The least significant
     * bits pushed out from the right side reenter the number as the most significant bits on the left side.
     * Rotating
     * the number right by a negative bit count is the same as rotating it left by the negated bit count:
     * number.rotateRight(-n) == number.rotateLeft(n)
     * Rotating by a multiple of [Int.SIZE_BITS] (32) returns
     * the same number,
     * or more generally
     * number.rotateRight(n) == number.rotateRight(n % 32)
     */
    @SinceKotlin("1.6")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Int.rotateRight(bitCount: Int): Int =
        shl(Int.SIZE_BITS - bitCount) or ushr(bitCount)

    /**
     * Counts the
     * number of set bits in the binary representation of this [Long] number.
     */
    @SinceKotlin("1.4")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Long.countOneBits(): Int =
        high.countOneBits() + low.countOneBits()

    /**
     * Counts the number of
     * consecutive most significant bits that are zero in the binary representation of this [Long] number.
     */
    @SinceKotlin("1.4")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Long.countLeadingZeroBits(): Int =
        when (val high = this.high) {
            0 -> Int.SIZE_BITS +
            low.countLeadingZeroBits()
            else -> high.countLeadingZeroBits()
        }

    /**
     * Counts the number of
     * consecutive least significant bits
     * that are zero in the binary representation of this [Long] number.
     */
    @SinceKotlin("1.4")
    @WasExperimental(ExperimentalStdlibApi::class)
    public actual fun
    Long.countTrailingZeroBits(): Int =
        when (val low = this.low) {
            0 -> Int.SIZE_BITS +
            high.countTrailingZeroBits()
            else -> low.countTrailingZeroBits()
        }

    /**
     * Returns a number having a
     * single bit set in the position of the most significant set bit of this [Long] number,
     * or zero, if this number is
     */

```

```

zero.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.takeHighestOneBit(): Long =\n    when (val high = this.high) {\n        0 -> Long(low.takeHighestOneBit(),
0)\n        else -> Long(0, high.takeHighestOneBit())\n    }\n\n/**\n * Returns a number having a single bit set in the
position of the least significant set bit of this [Long] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
actual fun Long.takeLowestOneBit(): Long =\n    when (val low = this.low) {\n        0 -> Long(0,
high.takeLowestOneBit())\n        else -> Long(low.takeLowestOneBit(), 0)\n    }\n\n/**\n * Rotates the binary
representation of this [Long] number left by the specified [bitCount] number of bits.\n * The most significant bits
pushed out from the left side reenter the number as the least significant bits on the right side.\n *\n * Rotating the
number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-
n) == number.rotateRight(n)`\n *\n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or
more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.rotateLeft(bitCount: Int): Long {\n    if ((bitCount and 31) != 0) {\n        val low = this.low\n        val high =
this.high\n
        val newLow = low.shl(bitCount) or high.ushr(-bitCount)\n        val newHigh = high.shl(bitCount) or low.ushr(-
bitCount)\n        return if ((bitCount and 32) == 0) Long(newLow, newHigh) else Long(newHigh, newLow)\n    }
else {\n        return if ((bitCount and 32) == 0) this else Long(high, low)\n    }\n\n\n/**\n * Rotates the binary
representation of this [Long] number right by the specified [bitCount] number of bits.\n * The least significant bits
pushed out from the right side reenter the number as the most significant bits on the left side.\n *\n * Rotating the
number right by a negative bit count is the same as rotating it left by the negated bit count:\n *
`number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns
the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual
inline fun Long.rotateRight(bitCount: Int): Long = rotateLeft(-bitCount)\n\n",/*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.js\n\nimport
kotlin.internal.LowPriorityInOverloadResolution\n\n/**\n * Exposes the JavaScript [Promise
object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/Promise) to Kotlin.\n
*\n@Suppress("NOT_DOCUMENTED")\npublic open external class Promise<out T>(executor: (resolve: (T) ->
Unit, reject: (Throwable) -> Unit) -> Unit) {\n    @LowPriorityInOverloadResolution\n    public open fun <S>
then(onFulfilled: ((T) -> S)?): Promise<S>\n\n    @LowPriorityInOverloadResolution\n    public open fun <S>
then(onFulfilled: ((T) -> S)?, onRejected: ((Throwable) -> S)?): Promise<S>\n\n    public open fun <S>
catch(onRejected: (Throwable) -> S): Promise<S>\n\n    public
open fun finally(onFinally: () -> Unit): Promise<T>\n\n    companion object {\n        public fun <S> all(promise:
Array<out Promise<S>>): Promise<Array<out S>>\n\n        public fun <S> race(promise: Array<out
Promise<S>>): Promise<S>\n\n        public fun reject(e: Throwable): Promise<Nothing>\n\n        public fun <S>
resolve(e: S): Promise<S>\n\n        public fun <S> resolve(e: Promise<S>): Promise<S>\n    }\n\n\n// It's workaround
for KT-19672 since we can fix it properly until KT-11265 isn't fixed.\n\ninline fun <T, S>
Promise<Promise<T>>.then(\n    noinline onFulfilled: ((T) -> S)?\n): Promise<S> {\n    return
this.unsafeCast<Promise<T>>().then(onFulfilled)\n}\n\ninline fun <T, S> Promise<Promise<T>>.then(\n    noinline
onFulfilled: ((T) -> S)?,\n    noinline onRejected: ((Throwable) -> S)?\n): Promise<S> {\n    return
this.unsafeCast<Promise<T>>().then(onFulfilled, onRejected)\n}\n\n",/*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n
*\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\npackage kotlin.random\n\nimport kotlin.math.pow\n\ninternal actual fun defaultPlatformRandom(): Random
= Random(js\("Math.random() * Math.pow(2, 32)) | 0").unsafeCast<Int>())\n\nprivate val INV_2_26:

```

```

Double = 2.0.pow(-26)\nprivate val INV_2_53: Double = 2.0.pow(-53)\ninternal actual fun doubleFromParts(hi26:
Int, low27: Int): Double =\n  hi26 * INV_2_26 + low27 * INV_2_53", /*\n * Copyright 2010-2020 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.reflect\n\nimport
findAssociatedObject\n\n/**\n * The experimental marker for associated objects API.\n *\n * Any usage of a
declaration annotated with `@ExperimentalAssociatedObjects` must be accepted either by\n * annotating that usage
with the [OptIn] annotation,
  e.g. `@OptIn(ExperimentalAssociatedObjects::class)`,\n * or by using the compiler argument `-opt-
in=kotlin.reflect.ExperimentalAssociatedObjects`.\n *\n * @RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n * @Retention(value = AnnotationRetention.BINARY)\n * public annotation class
ExperimentalAssociatedObjects\n\n/**\n * Makes the annotated annotation class an associated object key.\n *\n * An associated object key annotation should have single [KClass] parameter.\n * When applied to a class with
reference to an object declaration as an argument, it binds\n * the object to the class, making this binding
discoverable at runtime using [findAssociatedObject].\n\n *
\n * @ExperimentalAssociatedObjects\n * @Retention(AnnotationRetention.BINARY)\n * @Target(AnnotationTarget.A
NNOTATION_CLASS)\n * public annotation class AssociatedObjectKey\n\n/**\n * If [T] is an
@[AssociatedObjectKey]-annotated annotation class and [this] class is annotated with @[T] (`S::class`),\n * returns
object `S`.\n *\n * Otherwise
  returns `null`.\n *\n * @ExperimentalAssociatedObjects\n * public inline fun <reified T : Annotation>
KClass<*>.findAssociatedObject(): Any? =\n  this.findAssociatedObject(T::class)", /*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\nimport
getKClass\n\nimport kotlin.reflect.KClass\n\nimport kotlin.reflect.js.internal.KClassImpl\n\n/**\n * Represents the
constructor of a class. Instances of `JsClass` can be passed to JavaScript APIs that expect a constructor reference.\n\n *
\n * external interface JsClass<T : Any> {\n  /**\n   * Returns the unqualified name of the class represented by
this instance.\n   *\n   * val name: String\n  }\n\n/**\n * Obtains a constructor reference for the given `KClass`.\n\n *
\n * nval <T : Any> KClass<T>.js: JsClass<T>\n  get() = (this as KClassImpl<T>).jClass\n\n/**\n * Obtains a
`KClass` instance for the given constructor reference.\n *\n * nval <T : Any> JsClass<T>.kotlin: KClass<T>\n  get()
= getKClass(this)\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal abstract
class KClassImpl<T : Any>(\n  internal open val jClass: JsClass<T>\n) : KClass<T> {\n\n  override val
qualifiedName: String?\n  get() = TODO()\n\n  override fun equals(other: Any?): Boolean {\n    return other
is KClassImpl<*> && jClass == other.jClass\n  }\n\n  // TODO: use FQN\n  override fun hashCode(): Int =
simpleName?.hashCode() ?: 0\n\n  override fun toString(): String {\n    // TODO: use FQN\n    return "\"class
$simpleName\"\n  }\n}\n\ninternal class SimpleKClassImpl<T : Any>(jClass: JsClass<T>) :
KClassImpl<T>(jClass)\n  {\n    override val simpleName: String? =
jClass.asDynamic().$metadata$.simpleName.unsafeCast<String?>()\n\n    override fun isInstance(value: Any?):
Boolean {\n      return jsIsType(value, jClass)\n    }\n\n    internal class PrimitiveKClassImpl<T : Any>(\n
jClass: JsClass<T>,\n    private val givenSimpleName: String,\n    private val isInstanceFunction: (Any?) ->
Boolean\n) : KClassImpl<T>(jClass) {\n      override fun equals(other: Any?): Boolean {\n        if (other !is
PrimitiveKClassImpl<*>) return false\n        return super.equals(other) && givenSimpleName ==
other.givenSimpleName\n      }\n\n      override val simpleName: String? get() = givenSimpleName\n\n      override fun
isInstance(value: Any?): Boolean {\n        return isInstanceFunction(value)\n      }\n\n    }\n\n    internal object
NothingKClassImpl : KClassImpl<Nothing>(js("Object")) {\n      override val simpleName: String =
\"Nothing\"\n\n      override fun isInstance(value: Any?): Boolean = false\n\n      override val jClass:
JsClass<Nothing>\n

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    get() = throw UnsupportedOperationException("There's no native JS class for Nothing type")\n\n    override
fun equals(other: Any?): Boolean = other === this\n\n    override fun hashCode(): Int = 0\n}\n\ninternal class
ErrorKClass : KClass<Nothing> {\n    override val simpleName: String? get() = error("Unknown simpleName for
ErrorKClass")\n    override val qualifiedName: String? get() = error("Unknown qualifiedName for
ErrorKClass")\n\n    override fun isInstance(value: Any?): Boolean = error("Can's check isInstance on
ErrorKClass")\n\n    override fun equals(other: Any?): Boolean = other === this\n\n    override fun hashCode(): Int
= 0\n}" , /*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\npackage kotlin.reflect\n\ninternal actual inline val KClass<*>.qualifiedOrSimpleName: String?\n    get()
= simpleName" , /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n// a package is omitted to get declarations directly under the module\n\n// TODO: Remove once
JsReflectionAPICallChecker supports more reflection types\n@file:Suppress("Unsupported")\n\nimport
kotlin.reflect.*\nimport kotlin.reflect.js.internal.*\n\n@JsName("createKType")\n\ninternal fun createKType(\n
classifier: KClassifier,\n    arguments: Array<KTypeProjection>,\n    isMarkedNullable: Boolean)\n    =\n    KTypeImpl(classifier, arguments.asList(), isMarkedNullable)\n\n\n@JsName("createDynamicKType")\n\ninternal fun
createDynamicKType(): KType = DynamicKType\n\n\n@JsName("markKTypeNullable")\n\ninternal fun
markKTypeNullable(kType: KType) = KTypeImpl(kType.classifier!!, kType.arguments,
true)\n\n\n@JsName("createKTypeParameter")\n\ninternal fun createKTypeParameter(\n
    name: String,\n    upperBounds: Array<KType>,\n    variance: String)\n    : KTypeParameter {\n    val kVariance =
when (variance) {\n        "in" -> KVariance.IN\n        "out" -> KVariance.OUT\n        else ->
KVariance.INVARIANT\n    }\n\n    return KTypeParameterImpl(name, upperBounds.asList(), kVariance,
false)\n}\n\n\n@JsName("getStarKTypeProjection")\n\ninternal fun getStarKTypeProjection(): KTypeProjection =\n
KTypeProjection.STAR\n\n\n@JsName("createCovariantKTypeProjection")\n\ninternal fun
createCovariantKTypeProjection(type: KType): KTypeProjection =\n
KTypeProjection.covariant(type)\n\n\n@JsName("createInvariantKTypeProjection")\n\ninternal fun
createInvariantKTypeProjection(type: KType): KTypeProjection =\n
KTypeProjection.invariant(type)\n\n\n@JsName("createContravariantKTypeProjection")\n\ninternal fun
createContravariantKTypeProjection(type: KType): KTypeProjection =\n
KTypeProjection.contravariant(type)\n}" , /*\n * Copyright 2010-2019 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.reflect.js.internal\n\nimport
kotlin.reflect.*\n\ninternal class KTypeImpl(\n    override val classifier: KClassifier,\n    override val arguments:
List<KTypeProjection>,\n    override val isMarkedNullable: Boolean)\n    : KType {\n    override fun equals(other:
Any?): Boolean =\n        other is KTypeImpl &&\n            classifier == other.classifier && arguments ==
other.arguments && isMarkedNullable == other.isMarkedNullable\n\n    override fun hashCode(): Int =\n
(classifier.hashCode() * 31 + arguments.hashCode()) * 31 + isMarkedNullable.hashCode()\n\n    override fun
toString(): String {\n        val kClass = (classifier as? KClass<*>)\n        val classifierName = when {\n            kClass
== null -> classifier.toString()\n            kClass.simpleName != null -> kClass.simpleName\n            else ->
"(non-denotable type)"\n        }\n\n        val args =\n            if (arguments.isEmpty()) ""\n            else
arguments.joinToString(", ", "<", ">")\n        val nullable = if (isMarkedNullable) "?" else ""\n\n        return
classifierName + args + nullable\n    }\n}\n\ninternal object DynamicKType : KType {\n    override val classifier:
KClassifier? = null\n    override val arguments: List<KTypeProjection> = emptyList()\n    override val
isMarkedNullable: Boolean = false\n    override fun toString(): String = "dynamic"\n}\n}" , /*\n * Copyright 2010-
2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal data class KTypeParameterImpl(\n    override val
name: String,\n    override val upperBounds: List<KType>,\n    override val variance: KVariance,\n

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    override val isReified: Boolean\n) : KTypeParameter {\n    override fun toString(): String = name\n}", /*\n *
Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.reflect.js.internal\n\nimport kotlin.js.JsClass\n\n@JsName("PrimitiveClasses")\n\ninternal object
PrimitiveClasses {\n    @JsName("anyClass")\n    val anyClass =
PrimitiveKClassImpl(js("Object").unsafeCast<JsClass<Any>>(), "Any", { it is Any })\n\n    @JsName("numberClass")\n    val numberClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Number>>(), "Number", { it is Number })\n\n    @JsName("nothingClass")\n    val nothingClass = NothingKClassImpl\n\n    @JsName("booleanClass")\n    val
booleanClass = PrimitiveKClassImpl(js("Boolean").unsafeCast<JsClass<Boolean>>(), "Boolean", { it is Boolean
})\n\n    @JsName("byteClass")\n
    val byteClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Byte>>(), "Byte", { it is Byte })\n\n    @JsName("shortClass")\n    val shortClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Short>>(),
"Short", { it is Short })\n\n    @JsName("intClass")\n    val intClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Int>>(), "Int", { it is Int })\n\n    @JsName("floatClass")\n    val floatClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Float>>(),
"Float", { it is Float })\n\n    @JsName("doubleClass")\n    val doubleClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Double>>(), "Double", { it is Double })\n\n    @JsName("arrayClass")\n    val arrayClass =
PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<Array<*>>(), "Array", { it is Array<*> })\n\n    @JsName("stringClass")\n    val stringClass = PrimitiveKClassImpl(js("String").unsafeCast<JsClass<String>>(),
"String", { it is String })\n\n    @JsName("throwableClass")\n    val throwableClass =
PrimitiveKClassImpl(js("Error").unsafeCast<JsClass<Throwable>>(), "Throwable", { it is Throwable })\n\n    @JsName("booleanArrayClass")\n    val booleanArrayClass =
PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<BooleanArray>>(), "BooleanArray", { it is BooleanArray
})\n\n    @JsName("charArrayClass")\n    val charArrayClass =
PrimitiveKClassImpl(js("Uint16Array").unsafeCast<JsClass<CharArray>>(), "CharArray", { it is CharArray
})\n\n    @JsName("byteArrayClass")\n    val byteArrayClass =
PrimitiveKClassImpl(js("Int8Array").unsafeCast<JsClass<ByteArray>>(), "ByteArray", { it is ByteArray })\n\n    @JsName("shortArrayClass")\n    val shortArrayClass =
PrimitiveKClassImpl(js("Int16Array").unsafeCast<JsClass<ShortArray>>(), "ShortArray", { it is ShortArray
})\n\n    @JsName("intArrayClass")\n    val intArrayClass =
PrimitiveKClassImpl(js("Int32Array").unsafeCast<JsClass<IntArray>>(), "IntArray",
{ it is IntArray })\n\n    @JsName("longArrayClass")\n    val longArrayClass =
PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<LongArray>>(), "LongArray", { it is LongArray })\n\n    @JsName("floatArrayClass")\n    val floatArrayClass =
PrimitiveKClassImpl(js("Float32Array").unsafeCast<JsClass<FloatArray>>(), "FloatArray", { it is FloatArray
})\n\n    @JsName("doubleArrayClass")\n    val doubleArrayClass =
PrimitiveKClassImpl(js("Float64Array").unsafeCast<JsClass<DoubleArray>>(), "DoubleArray", { it is
DoubleArray })\n\n    @JsName("functionClass")\n    fun functionClass(arity: Int): KClassImpl<Any> {\n
return functionClasses.get(arity) ?: run {\n        val result =
PrimitiveKClassImpl(js("Function").unsafeCast<JsClass<Any>>(), "Function$arity",\n
{ jsTypeOf(it) === "function" && it.asDynamic().length === arity })\n        functionClasses.asDynamic()[arity]
= result\n        result\n    }\n\n    }\n\nprivate val functionClasses = arrayOfNulls<KClassImpl<Any>>(0), /*\n * Copyright 2010-2020
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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get

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declarations directly under the module\n\nimport kotlin.reflect.*\nimport
kotlin.reflect.js.internal.*\n\n@JsName("getKClass")\ninternal fun <T : Any> getKClass(jClass: Any /*
JsClass<T> | Array<JsClass<T>> */): KClass<T> {\n    return if (js("Array").isArray(jClass)) {\n
getKClassM(jClass.unsafeCast<Array<JsClass<T>>>())\n    } else {\n
getKClass1(jClass.unsafeCast<JsClass<T>>())\n    }\n}\n\n@JsName("getKClassM")\ninternal fun <T : Any>
getKClassM(jClasses: Array<JsClass<T>>): KClass<T> = when (jClasses.size) {\n    1 ->
getKClass1(jClasses[0])\n    0 -> NothingKClassImpl.unsafeCast<KClass<T>>()\n    else ->
ErrorKClass().unsafeCast<KClass<T>>()\n}\n\n@JsName("getKClassFromExpression")\ninternal
fun <T : Any> getKClassFromExpression(e: T): KClass<T> =\n    when (jsTypeOf(e)) {\n        "string" ->
PrimitiveClasses.stringClass\n        "number" -> if (jsBitwiseOr(e, 0).asDynamic() === e)
PrimitiveClasses.intClass else PrimitiveClasses.doubleClass\n        "boolean" -> PrimitiveClasses.booleanClass\n
        "function" -> PrimitiveClasses.functionClass(e.asDynamic().length)\n        else -> {\n            when {\n                e
is BooleanArray -> PrimitiveClasses.booleanArrayClass\n                e is CharArray ->
PrimitiveClasses.charArrayClass\n                e is ByteArray -> PrimitiveClasses.byteArrayClass\n                e is
ShortArray -> PrimitiveClasses.shortArrayClass\n                e is IntArray -> PrimitiveClasses.intArrayClass\n
                e is LongArray -> PrimitiveClasses.longArrayClass\n                e is FloatArray ->
PrimitiveClasses.floatArrayClass\n                e is DoubleArray -> PrimitiveClasses.doubleArrayClass\n
                e is KClass<*> -> KClass::class\n                e is Array<*> -> PrimitiveClasses.arrayClass\n            }
else -> {\n                val constructor = js("Object").getPrototypeOf(e).constructor\n                when {\n
constructor === js("Object") -> PrimitiveClasses.anyClass\n                constructor === js("Error") ->
PrimitiveClasses.throwableClass\n                else -> {\n                    val jsClass: JsClass<T> =
constructor\n                    getKClass1(jsClass)\n                }\n            }\n        }\n    }.unsafeCast<KClass<T>>()\n\n@JsName("getKClass1")\ninternal fun <T : Any> getKClass1(jClass:
JsClass<T>): KClass<T> {\n    if (jClass === js("String")) return
PrimitiveClasses.stringClass.unsafeCast<KClass<T>>()\n\n    val metadata = jClass.asDynamic().`$metadata$\`\n\n
return if (metadata
!= null) {\n        if (metadata.`$kClass$\` == null) {\n            val kClass = SimpleKClassImpl(jClass)\n
metadata.`$kClass$\` = kClass\n            kClass\n        } else {\n            metadata.`$kClass$\`\n        }\n    } else {\n
SimpleKClassImpl(jClass)\n    }\n}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n * Exposes the JavaScript [RegExp
object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/RegExp) to Kotlin.\n
*/\n\n@Suppress("NOT_DOCUMENTED")\npublic external class RegExp(pattern: String, flags: String? =
definedExternally) {\n\n    public fun test(str: String): Boolean\n\n    public fun exec(str: String): RegExpMatch?\n\n
    public override fun toString(): String\n\n    /**\n     * The lastIndex is a read/write integer property
of regular expressions that specifies the index at which to start the next match.\n     */\n\n    public var lastIndex:
Int\n\n    public val global: Boolean\n    public val ignoreCase: Boolean\n    public val multiline:
Boolean\n}\n\n/**\n * Resets the regular expression so that subsequent [RegExp.test] and [RegExp.exec] calls will
match starting with the beginning of the input string.\n */\n\npublic fun RegExp.reset() {\n    lastIndex = 0\n}\n\n//
TODO: Inherit from array or introduce asArray() extension\n\n/**\n * Represents the return value of
[RegExp.exec].\n */\n\n@Suppress("NOT_DOCUMENTED")\npublic external interface RegExpMatch {\n    public
val index: Int\n    public val input: String\n    public val length: Int\n}\n\n/**\n * Returns the entire text
matched by [RegExp.exec] if the [index] parameter is 0, or the text matched by the capturing parenthesis\n * at the
given index.\n */\n\npublic inline operator fun RegExpMatch.get(index: Int): String? = asDynamic()[index]\n\n/**\n *
Converts the result of [RegExp.exec] to an array where the first element contains the entire matched text and each
subsequent\n * element is the text matched by each capturing parenthesis.\n */\n\npublic inline fun
RegExpMatch.asArray(): Array<out String?> = unsafeCast<Array<out String?>>()\n\n\n/*\n * Copyright 2010-2018

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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.sequences\n\ninternal
actual class ConstrainedOnceSequence<T> actual constructor(sequence: Sequence<T>) : Sequence<T> {\n    private
var sequenceRef: Sequence<T>? = sequence\n\n    actual override fun iterator(): Iterator<T> {\n        val sequence =
sequenceRef ?: throw IllegalStateException("This sequence can be consumed only once.")\n        sequenceRef =
null\n        return sequence.iterator()\n    }\n}\n",/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
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Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n@SinceKotlin("1.5")\npublic actual enum class
CharCategory(internal val value: Int, public actual val code: String) {\n    /**\n     * General category \"Cn\" in the
Unicode specification.\n     */\n    UNASSIGNED(0, \"Cn\"),\n\n    /**\n     * General category \"Lu\" in the Unicode
specification.\n     */\n    UPPER_CASE_LETTER(1, \"Lu\"),\n\n    /**\n     * General category \"Ll\" in the Unicode
specification.\n     */\n    LOWER_CASE_LETTER(2, \"Ll\"),\n\n    /**\n     * General category \"Lt\" in the Unicode
specification.\n     */\n    TITLE_CASE_LETTER(3, \"Lt\"),\n\n    /**\n     * General category \"Lm\" in the Unicode
specification.\n     */\n    MODIFIER_LETTER(4, \"Lm\"),\n\n    /**\n     * General category \"Lo\" in the Unicode
specification.\n     */\n    OTHER_LETTER(5, \"Lo\"),\n\n    /**\n     * General
category \"Mn\" in the Unicode specification.\n     */\n    NON_SPACING_MARK(6, \"Mn\"),\n\n    /**\n     *
General category \"Me\" in the Unicode specification.\n     */\n    ENCLOSING_MARK(7, \"Me\"),\n\n    /**\n     *
General category \"Mc\" in the Unicode specification.\n     */\n    COMBINING_SPACING_MARK(8, \"Mc\"),\n\n    /**\n     *
General category \"Nd\" in the Unicode specification.\n     */\n    DECIMAL_DIGIT_NUMBER(9,
\"Nd\"),\n\n    /**\n     * General category \"Nl\" in the Unicode specification.\n     */\n    LETTER_NUMBER(10,
\"Nl\"),\n\n    /**\n     * General category \"No\" in the Unicode specification.\n     */\n    OTHER_NUMBER(11,
\"No\"),\n\n    /**\n     * General category \"Zs\" in the Unicode specification.\n     */\n    SPACE_SEPARATOR(12,
\"Zs\"),\n\n    /**\n     * General category \"Zl\" in the Unicode specification.\n     */\n    LINE_SEPARATOR(13,
\"Zl\"),\n\n    /**\n     * General category \"Zp\" in the Unicode specification.\n     */\n    PARAGRAPH_SEPARATOR(14,
\"Zp\"),\n\n    /**\n     * General category \"Cc\" in the Unicode specification.\n     */\n    CONTROL(15,
\"Cc\"),\n\n    /**\n     * General category \"Cf\" in the Unicode specification.\n     */\n    FORMAT(16, \"Cf\"),\n\n
    /**\n     * General category \"Co\" in the Unicode specification.\n     */\n    PRIVATE_USE(18, \"Co\"),\n\n    /**\n
     * General category \"Cs\" in the Unicode specification.\n     */\n    SURROGATE(19, \"Cs\"),\n\n    /**\n     *
General category \"Pd\" in the Unicode specification.\n     */\n    DASH_PUNCTUATION(20, \"Pd\"),\n\n    /**\n     *
General category \"Ps\" in the Unicode specification.\n     */\n    START_PUNCTUATION(21, \"Ps\"),\n\n    /**\n     *
General category \"Pe\" in the Unicode specification.\n     */\n    END_PUNCTUATION(22, \"Pe\"),\n\n    /**\n     *
General category \"Pc\" in the Unicode specification.\n     */\n    CONNECTOR_PUNCTUATION(23,
\"Pc\"),\n\n    /**\n     * General category \"Po\" in the Unicode specification.\n     */\n    OTHER_PUNCTUATION(24,
\"Po\"),\n\n    /**\n     * General category \"Sm\" in the Unicode
specification.\n     */\n    MATH_SYMBOL(25, \"Sm\"),\n\n    /**\n     * General category \"Sc\" in the Unicode
specification.\n     */\n    CURRENCY_SYMBOL(26, \"Sc\"),\n\n    /**\n     * General category \"Sk\" in the
Unicode specification.\n     */\n    MODIFIER_SYMBOL(27, \"Sk\"),\n\n    /**\n     * General category \"So\" in the
Unicode specification.\n     */\n    OTHER_SYMBOL(28, \"So\"),\n\n    /**\n     * General category \"Pi\" in the
Unicode specification.\n     */\n    INITIAL_QUOTE_PUNCTUATION(29, \"Pi\"),\n\n    /**\n     * General
category \"Pf\" in the Unicode specification.\n     */\n    FINAL_QUOTE_PUNCTUATION(30, \"Pf\");\n\n    /**\n     *
Returns `true` if [char] character belongs to this category.\n     */\n    public actual operator fun contains(char:
Char): Boolean = char.getCategoryValue() == this.value\n\n    companion object {\n        internal fun
valueOf(category: Int): CharCategory =\n            when (category) {\n                in 0..16 -> values()[category]\n
                in 18..30 -> values()[category - 1]\n                else -> throw IllegalArgumentException("Category #\$category is
not defined.")\n            }\n    }\n}\n",/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

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license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * The exception thrown when a character encoding
or decoding error occurs.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
actual open class CharacterCodingException(message: String?) : Exception(message) {\n    actual constructor() :
this(null)\n}\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * A mutable sequence of characters.\n
*\n * String builder can be used to efficiently perform multiple string manipulation operations.\n */\n\npublic actual
class StringBuilder actual constructor(content: String) : Appendable, CharSequence {\n    /**\n     * Constructs an
empty string builder with the specified initial [capacity].\n     *\n     * In Kotlin/JS implementation of StringBuilder
the initial capacity has no effect on the further performance of operations.\n     */\n    actual constructor(capacity:
Int) : this() {\n    }\n\n    /** Constructs a string builder that contains the same characters as the specified [content]
char sequence. */\n    actual constructor(content: CharSequence) : this(content.toString()) {\n    }\n\n    /** Constructs an
empty string builder. */\n    actual constructor() : this("")\n\n    private var string: String = if (content !==
undefined) content else ""\n\n    actual override
val length: Int\n        get() = string.asDynamic().length\n\n    actual override fun get(index: Int): Char =\n
string.getOrNull(index) { throw IndexOutOfBoundsException("index: $index, length: $length")} }\n\n    actual
override fun subSequence(startIndex: Int, endIndex: Int): CharSequence = string.substring(startIndex, endIndex)\n\n
actual override fun append(value: Char): StringBuilder {\n    string += value\n    return this\n }\n\n    actual
override fun append(value: CharSequence?): StringBuilder {\n    string += value.toString()\n    return this\n
}\n\n    actual override fun append(value: CharSequence?, startIndex: Int, endIndex: Int): StringBuilder =\n
this.appendRange(value ?: "null", startIndex, endIndex)\n\n    /**\n     * Reverses the contents of this string builder
and returns this instance.\n     *\n     * Surrogate pairs included in this string builder are treated as single
characters.\n     * Therefore, the order of the high-low
surrogates is never reversed.\n     *\n     * Note that the reverse operation may produce new surrogate pairs that were
unpaired low-surrogates and high-surrogates before the operation.\n     * For example, reversing
`"\uDC00\uD800"` produces `"\uD800\uDC00"` which is a valid surrogate pair.\n     */\n    actual fun
reverse(): StringBuilder {\n    var reversed = ""\n    var index = string.length - 1\n    while (index >= 0) {\n
        val low = string[index--]\n        if (low.isLowSurrogate() && index >= 0) {\n            val high =
string[index--]\n            if (high.isHighSurrogate()) {\n                reversed = reversed + high + low\n            }
else {\n                reversed = reversed + low + high\n            }\n        } else {\n            reversed += low\n        }
}\n    string = reversed\n    return this\n }\n\n    /**\n     * Appends the string representation of the
specified object
[value] to this string builder and returns this instance.\n     *\n     * The overall effect is exactly as if the [value] were
converted to a string by the `value.toString()` method,\n     * and then that string was appended to this string
builder.\n     */\n    actual fun append(value: Any?): StringBuilder {\n    string += value.toString()\n    return
this\n }\n\n    /**\n     * Appends the string representation of the specified boolean [value] to this string builder and
returns this instance.\n     *\n     * The overall effect is exactly as if the [value] were converted to a string by the
`value.toString()` method,\n     * and then that string was appended to this string builder.\n     */\n    @SinceKotlin("1.3")\n    actual fun append(value: Boolean): StringBuilder {\n    string += value\n    return
this\n }\n\n    /**\n     * Appends characters in the specified character array [value] to this string builder and
returns this instance.\n     *\n     * Characters
are appended in order, starting at the index 0.\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    actual fun append(value: CharArray): StringBuilder {\n
string += value.concatToString()\n    return this\n }\n\n    @Deprecated("Provided for binary compatibility.",
level = DeprecationLevel.HIDDEN)\n    fun append(value: String): StringBuilder = append(value)\n\n    /**\n     *
Appends the specified string [value] to this string builder and returns this instance.\n     *\n     * If [value] is `null`,
then the four characters `null` are appended.\n     */\n    @SinceKotlin("1.3")\n    actual fun append(value:
String?): StringBuilder {\n    this.string += value ?: "null"\n    return this\n }\n\n    /**\n     * Returns the

```

```

current capacity of this string builder.\n    *\n    * The capacity is the maximum length this string builder can have
before an allocation occurs.\n    *\n    * In Kotlin/JS implementation
of StringBuilder the value returned from this method may not indicate the actual size of the backing storage.\n
*/\n @SinceKotlin("1.3")\n// @ExperimentalStdlibApi\n @Deprecated("Obtaining StringBuilder capacity is
not supported in JS and common code.", level = DeprecationLevel.ERROR)\n    actual fun capacity(): Int =
length\n\n    /**\n    * Ensures that the capacity of this string builder is at least equal to the specified
[minimumCapacity].\n    *\n    * If the current capacity is less than the [minimumCapacity], a new backing storage
is allocated with greater capacity.\n    * Otherwise, this method takes no action and simply returns.\n    *\n    * In
Kotlin/JS implementation of StringBuilder the size of the backing storage is not extended to comply the given
[minimumCapacity],\n    * thus calling this method has no effect on the further performance of operations.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
    actual fun ensureCapacity(minimumCapacity: Int) {\n    }\n\n    /**\n    * Returns the index within this string
builder of the first occurrence of the specified [string].\n    *\n    * Returns -1 if the specified [string] does not
occur in this string builder.\n    */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n    actual fun indexOf(string: String): Int =
this.string.asDynamic().indexOf(string)\n\n    /**\n    * Returns the index within this string builder of the first
occurrence of the specified [string],\n    * starting at the specified [startIndex].\n    *\n    * Returns -1 if the
specified [string] does not occur in this string builder starting at the specified [startIndex].\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
    actual fun indexOf(string: String,
startIndex: Int): Int = this.string.asDynamic().indexOf(string, startIndex)\n\n    /**\n    * Returns the index within
this string
builder of the last occurrence of the specified [string].\n    * The last occurrence of empty string `""` is considered
to be at the index equal to `this.length`.\n    *\n    * Returns -1 if the specified [string] does not occur in this string
builder.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
    actual fun lastIndexOf(string: String): Int = this.string.asDynamic().lastIndexOf(string)\n\n    /**\n    * Returns the index
within this string builder of the last occurrence of the specified [string],\n    * starting from the specified [startIndex]
toward the beginning.\n    *\n    * Returns -1 if the specified [string] does not occur in this string builder starting
at the specified [startIndex].\n    */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n    actual fun lastIndexOf(string: String, startIndex: Int): Int {\n
    if (string.isEmpty() && startIndex < 0) return -1\n    return this.string.asDynamic().lastIndexOf(string,
startIndex)\n    }\n\n    /**\n    * Inserts the string representation of the specified boolean [value] into this string
builder at the specified [index] and returns this instance.\n    *\n    * The overall effect is exactly as if the [value]
were converted to a string by the `value.toString()` method,\n    * and then that string was inserted into this string
builder at the specified [index].\n    *\n    * @throws IndexOutOfBoundsException if [index] is less than zero or
greater than the length of this string builder.\n    */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n    actual fun insert(index: Int, value: Boolean): StringBuilder
{\n    AbstractList.checkPositionIndex(index, length)\n\n    string = string.substring(0, index) + value +
string.substring(index)\n    return this\n    }\n\n    /**\n    * Inserts the specified character [value] into this string
builder at the specified [index] and
returns this instance.\n    *\n    * @throws IndexOutOfBoundsException if [index] is less than zero or greater than
the length of this string builder.\n    */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n    actual fun insert(index: Int, value: Char): StringBuilder {\n
    AbstractList.checkPositionIndex(index, length)\n\n    string = string.substring(0, index) + value +
string.substring(index)\n    return this\n    }\n\n    /**\n    * Inserts characters in the specified character array
[value] into this string builder at the specified [index] and returns this instance.\n    *\n    * The inserted characters
go in same order as in the [value] character array, starting at [index].\n    *\n    * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
    actual fun insert(index: Int, value:

```

```

CharArray): StringBuilder {
    AbstractList.checkPositionIndex(index, length)
    string = string.substring(0, index) + value.concatToString() + string.substring(index)
    return this
}

/**
 * Inserts characters in the specified character sequence [value] into this string builder at the specified [index] and
 * returns this instance.
 *
 * The inserted characters go in the same order as in the [value] character sequence,
 * starting at [index].
 *
 * @param index the position in this string builder to insert at.
 * @param value the character sequence from which characters are inserted. If [value] is `null`, then the four characters `"\null"` are
 * inserted.
 *
 * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of
 * this string builder.
 *
 * @SinceKotlin("1.4")
 * @WasExperimental(ExperimentalStdlibApi::class)
 */
actual fun insert(index: Int, value: CharSequence?): StringBuilder
{
    AbstractList.checkPositionIndex(index, length)
    string = string.substring(0, index) +
    value.toString() + string.substring(index)
    return this
}

/**
 * Inserts the string representation of
 * the specified object [value] into this string builder at the specified [index] and returns this instance.
 *
 * The overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,
 * and then that string was inserted into this string builder at the specified [index].
 *
 * @throws
 * IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.
 *
 * @SinceKotlin("1.4")
 * @WasExperimental(ExperimentalStdlibApi::class)
 */
actual fun insert(index: Int, value: Any?): StringBuilder {
    AbstractList.checkPositionIndex(index, length)
    string = string.substring(0,
    index) + value.toString() + string.substring(index)
    return this
}

@Deprecated("Provided for binary compatibility.", level =
    DeprecationLevel.HIDDEN)
fun insert(index: Int, value: String): StringBuilder = insert(index, value)

/**
 * Inserts the string [value] into this string builder at the specified [index] and returns this instance.
 *
 * If [value] is `null`, then the four characters `"\null"` are inserted.
 *
 * @throws IndexOutOfBoundsException
 * if [index] is less than zero or greater than the length of this string builder.
 *
 * @SinceKotlin("1.4")
 * @WasExperimental(ExperimentalStdlibApi::class)
 */
actual fun insert(index: Int, value: String?): StringBuilder
{
    AbstractList.checkPositionIndex(index, length)
    val toInsert = value ?: "\null"
    this.string =
    this.string.substring(0, index) + toInsert + this.string.substring(index)
    return this
}

/**
 * Sets
 * the length of this string builder to the specified [newLength].
 *
 * If the [newLength] is less than the current length, it is changed to the specified [newLength].
 *
 * Otherwise, null characters '\u0000' are appended to this string builder until its length is less than the [newLength].
 *
 * Note that in Kotlin/JS [set] operator function has non-constant execution time complexity.
 *
 * Therefore, increasing length of this string builder and then updating each character by index may slow down your
 * program.
 *
 * @throws IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less
 * than zero.
 *
 * @SinceKotlin("1.4")
 * @WasExperimental(ExperimentalStdlibApi::class)
 */
actual fun
setLength(newLength: Int) {
    if (newLength < 0) {
        throw IllegalArgumentException("Negative new
        length: $newLength.")
    }
    if (newLength <= length) {
        string = string.substring(0,
        newLength)
    } else {
        for (i in length
        until newLength) {
            string += "\u0000"
        }
    }
}

/**
 * Returns a new [String]
 * that contains characters in this string builder at [startIndex] (inclusive) and up to the [length] (exclusive).
 *
 * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater than the length of this string
 * builder.
 *
 * @SinceKotlin("1.4")
 * @WasExperimental(ExperimentalStdlibApi::class)
 */
actual fun
substring(startIndex: Int): String {
    AbstractList.checkPositionIndex(startIndex, length)
    return
    string.substring(startIndex)
}

/**
 * Returns a new [String] that contains characters in this string builder
 * at [startIndex] (inclusive) and up to the [endIndex] (exclusive).
 *
 * @throws IndexOutOfBoundsException
 * or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when
 * `startIndex > endIndex`.
 *
 * @SinceKotlin("1.4")
 * @WasExperimental(ExperimentalStdlibApi::class)
 */
actual fun substring(startIndex: Int, endIndex: Int): String
{
    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)
    return string.substring(startIndex,
    endIndex)
}

/**
 * Attempts to reduce storage used for this string builder.
 *
 * If the backing

```

storage of this string builder is larger than necessary to hold its current contents, then it may be resized to become more space efficient. Calling this method may, but is not required to, affect the value of the [capacity] property.

In Kotlin/JS implementation of StringBuilder the size of the backing storage is always equal to the length of the string builder.

```

@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
actual fun trimToSize(): String {
    override fun toString(): String = string
}
/**
 * Clears the content of this string builder making it empty and returns this instance.
 */
@sample samples.text.Strings.clearStringBuilder
@SinceKotlin("1.3")
public fun clear(): StringBuilder {
    string = ""
    return this
}
/**
 * Sets the character at the specified [index] to the specified [value].
 * @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public operator fun set(index: Int, value: Char): String {
    AbstractList.checkElementIndex(index, length)
    string = string.substring(0, index) + value + string.substring(index + 1)
    return this
}
/**
 * Replaces characters in the specified range of this string builder with characters in the specified string [value] and returns this instance.
 * @param startIndex the beginning (inclusive) of the range to replace.
 * @param endIndex the end (exclusive) of the range to replace.
 * @param value the string to replace with.
 * @throws IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length of this string builder, or `startIndex > endIndex`.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun setRange(startIndex: Int, endIndex: Int, value: String): StringBuilder {
    checkReplaceRange(startIndex, endIndex, length)
    this.string = this.string.substring(0, startIndex) + value + this.string.substring(endIndex)
    return this
}
private fun checkReplaceRange(startIndex: Int, endIndex: Int, length: Int) {
    if (startIndex < 0 || startIndex > length) {
        throw IndexOutOfBoundsException("startIndex: $startIndex, length: $length")
    }
    if (startIndex > endIndex) {
        throw IllegalArgumentException("startIndex($startIndex) > endIndex($endIndex)")
    }
}
/**
 * Removes the character at the specified [index] from this string builder and returns this instance.
 * If the `Char` at the specified [index] is part of a supplementary code point, this method does not remove the entire supplementary character.
 * @param index the index of `Char` to remove.
 * @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun deleteAt(index: Int): StringBuilder {
    AbstractList.checkElementIndex(index, length)
    string = string.substring(0, index) + string.substring(index + 1)
    return this
}
/**
 * Removes characters in the specified range from this string builder and returns this instance.
 * @param startIndex the beginning (inclusive) of the range to remove.
 * @param endIndex the end (exclusive) of the range to remove.
 * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex > endIndex`.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun deleteRange(startIndex: Int, endIndex: Int): StringBuilder {
    checkReplaceRange(startIndex, endIndex, length)
    string = string.substring(0, startIndex) + string.substring(endIndex)
    return this
}
/**
 * Copies characters from this string builder into the [destination] character array.
 * @param destination the array to copy to.
 * @param destinationOffset the position in the array to copy to, 0 by default.
 * @param startIndex the beginning (inclusive) of the range to copy, 0 by default.
 * @param endIndex the end (exclusive) of the range to copy, length of this string builder by default.
 * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.
 * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = this.length) {

```

```

AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n
AbstractList.checkBoundsIndexes(destinationOffset, destinationOffset + endIndex - startIndex, destination.size)\n\n
    var dstIndex = destinationOffset\n        for (index in startIndex until endIndex) {\n            destination[dstIndex++]
= string[index]\n        }\n    }\n\n /**\n    * Appends characters in a subarray of the specified character array [value] to this string builder and returns this
instance.\n    * Characters are appended in order, starting at specified [startIndex].\n    * @param value the array from which characters are appended.\n    * @param startIndex the beginning (inclusive) of the subarray to append.\n    * @param endIndex the end (exclusive) of the subarray to append.\n    * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] array indices or when `startIndex > endIndex`.\n    * @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    public fun appendRange(value: CharArray, startIndex: Int,
endIndex: Int): StringBuilder {\n        string += value.concatToString(startIndex, endIndex)\n        return this\n    }\n\n /**\n    * Appends a subsequence of the specified character sequence [value] to this
string builder and returns this instance.\n    * @param value the character sequence from which a
subsequence is appended.\n    * @param startIndex the beginning (inclusive) of the subsequence to append.\n    *
@param endIndex the end (exclusive) of the subsequence to append.\n    * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] character sequence indices or when `startIndex > endIndex`.\n    * @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    public fun appendRange(value: CharSequence, startIndex:
Int, endIndex: Int): StringBuilder {\n        val stringCsq = value.toString()\n
AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n        string +=
stringCsq.substring(startIndex, endIndex)\n        return this\n    }\n\n /**\n    * Inserts characters in a subarray of
the specified character array [value] into this string
builder at the specified [index] and returns this instance.\n    * The inserted characters go in same order as in
the [value] array, starting at [index].\n    * @param index the position in this string builder to insert at.\n    *
@param value the array from which characters are inserted.\n    * @param startIndex the beginning (inclusive) of
the subarray to insert.\n    * @param endIndex the end (exclusive) of the subarray to insert.\n    * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] array indices or when `startIndex > endIndex`.\n    * @throws IndexOutOfBoundsException if [index] is
less than zero or greater than the length of this string builder.\n    * @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    public fun insertRange(index: Int, value: CharArray,
startIndex: Int, endIndex: Int): StringBuilder {\n        AbstractList.checkPositionIndex(index,
this.length)\n        string = string.substring(0, index) + value.concatToString(startIndex, endIndex) +
string.substring(index)\n        return this\n    }\n\n /**\n    * Inserts characters in a subsequence of the specified
character sequence [value] into this string builder at the specified [index] and returns this instance.\n    * The
inserted characters go in the same order as in the [value] character sequence, starting at [index].\n    *
@param index the position in this string builder to insert at.\n    * @param value the character sequence from which
a subsequence is inserted.\n    * @param startIndex the beginning (inclusive) of the subsequence to insert.\n    *
@param endIndex the end (exclusive) of the subsequence to insert.\n    * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] character sequence indices or when `startIndex > endIndex`.\n    *
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n
    * @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    public fun
insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder {\n
AbstractList.checkPositionIndex(index, length)\n        val stringCsq = value.toString()\n
AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n        string = string.substring(0, index)
+ stringCsq.substring(startIndex, endIndex) + string.substring(index)\n        return this\n    }\n\n /**\n    * Clears
the content of this string builder making it empty and returns this instance.\n    * @sample

```

```

samples.text.Strings.clearStringBuilder\n
*\n@SinceKotlin("1.3")\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.clear(): StringBuilder = this.clear()\n\n**\n *
Sets the character at
the specified [index] to the specified [value].\n *\n * @throws IndexOutOfBoundsException if [index] is out of
bounds of this string builder.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline operator fun
StringBuilder.set(index: Int, value: Char) = this.set(index, value)\n\n**\n * Replaces characters in the specified
range of this string builder with characters in the specified string [value] and returns this instance.\n *\n * @param
startIndex the beginning (inclusive) of the range to replace.\n * @param endIndex the end (exclusive) of the range to
replace.\n * @param value the string to replace with.\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] if [startIndex] is less than zero, greater than the length of this string builder, or
`startIndex > endIndex`.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.setRange(startIndex: Int, endIndex: Int, value:
String): StringBuilder =\n this.setRange(startIndex, endIndex, value)\n\n**\n * Removes the character at the
specified [index] from this string builder and returns this instance.\n *\n * If the `Char` at the specified [index] is
part of a supplementary code point, this method does not remove the entire supplementary character.\n *\n *
@param index the index of `Char` to remove.\n *\n * @throws IndexOutOfBoundsException if [index] is out of
bounds of this string builder.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.deleteAt(index:
Int): StringBuilder = this.deleteAt(index)\n\n**\n * Removes characters in the specified range from this string
builder and returns this instance.\n *\n * @param startIndex the
beginning (inclusive) of the range to remove.\n * @param endIndex the end (exclusive) of the range to remove.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] is out of range of
this string builder indices or when `startIndex > endIndex`.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun
StringBuilder.deleteRange(startIndex: Int, endIndex: Int): StringBuilder = this.deleteRange(startIndex,
endIndex)\n\n**\n * Copies characters from this string builder into the [destination] character array.\n *\n *
@param destination the array to copy to.\n * @param destinationOffset the position in the array to copy to, 0 by
default.\n * @param startIndex the beginning (inclusive) of the range to copy, 0 by default.\n * @param endIndex
the end (exclusive) of the range to copy, length of this string builder by default.\n *\n * @throws
IndexOutOfBoundsException
or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when
`startIndex > endIndex`.\n *\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the
[destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination]
array indices range.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE",
"ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun
StringBuilder.toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int =
this.length) =\n this.toCharArray(destination, destinationOffset, startIndex, endIndex)\n\n**\n * Appends
characters in a subarray of the specified character array [value] to this string builder and returns this instance.\n
*\n * Characters are appended in order, starting at specified [startIndex].\n

```

```

*\n * @param value the array from which characters are appended.\n * @param startIndex the beginning
(inclusive) of the subarray to append.\n * @param endIndex the end (exclusive) of the subarray to append.\n *\n *
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of the [value] array indices or when `startIndex > endIndex`.\n
*\n *@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public actual inline fun
StringBuilder.appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder =\n
this.appendRange(value, startIndex, endIndex)\n\n/**\n * Appends a subsequence of the specified character
sequence [value] to this string builder and returns this instance.\n *\n * @param value the character sequence from
which a subsequence is appended.\n *\n * @param startIndex the beginning (inclusive) of the subsequence to append.\n
*\n * @param endIndex the end (exclusive) of the subsequence to append.\n *\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] character sequence indices or when `startIndex > endIndex`.\n
*\n *@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public actual inline fun
StringBuilder.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder =\n
this.appendRange(value, startIndex, endIndex)\n\n/**\n * Inserts characters in a subarray of the specified character
array [value] into this string builder at the specified [index] and returns this instance.\n *\n * The inserted characters
go in same order as in the [value] array, starting at [index].\n *\n * @param index the position in this string builder
to insert at.\n *\n * @param value the array from which characters are inserted.\n *\n * @param startIndex the
beginning (inclusive) of the subarray to insert.\n *\n * @param endIndex the end (exclusive) of the subarray to insert.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of the [value] array indices or when `startIndex > endIndex`.\n *\n * @throws IndexOutOfBoundsException if
[index] is less than zero or greater than the length of this string builder.\n
*\n *@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public actual inline fun
StringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder =\n
this.insertRange(index, value, startIndex, endIndex)\n\n/**\n * Inserts characters in a subsequence of the specified
character sequence [value] into this string builder at the specified [index] and returns this instance.\n *\n * The
inserted characters go in the same order as in the [value] character
sequence, starting at [index].\n *\n * @param index the position in this string builder to insert at.\n *\n * @param value
the character sequence from which a subsequence is inserted.\n *\n * @param startIndex the beginning (inclusive) of the
subsequence to insert.\n *\n * @param endIndex the end (exclusive) of the subsequence to insert.\n *\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] character sequence indices or when `startIndex > endIndex`.\n *\n * @throws IndexOutOfBoundsException if
[index] is less than zero or greater than the length of this string builder.\n
*\n *@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public actual inline fun
StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder =\n
this.insertRange(index, value, startIndex, endIndex)\n", "/**\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n *\n package kotlin.text\n\n/**\n *
Returns `true` if the content of this string is equal to the word "true", ignoring case, and `false` otherwise.\n
*\n *@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n @kotlin.internal.InlineOnly\n public actual inline
fun String.toBoolean(): Boolean = this.toBoolean()\n\n/**\n * Returns `true` if this string is not `null` and its content
is equal to the word "true", ignoring case, and `false` otherwise.\n *\n * There are also strict versions of the
function available on non-nullable String, [toBooleanStrict] and [toBooleanStrictOrNull].\n

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*^@SinceKotlin("1.4")\npublic actual fun String?.toBoolean(): Boolean = this != null && this.lowercase() ==
"true"\n\n/**\n * Parses the string as
a signed [Byte] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n */\npublic actual fun String.toByte(): Byte = toByteOrNull() ?:
numberFormatError(this)\n\n/**\n * Parses the string as a signed [Byte] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid representation of a number.\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n */\npublic actual fun
String.toByte(radix: Int): Byte = toByteOrNull(radix) ?: numberFormatError(this)\n\n/**\n * Parses the string as a
[Short] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n */\npublic actual fun String.toShort(): Short = toShortOrNull() ?:
numberFormatError(this)\n\n/**\n * Parses the string as a [Short] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid
representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to
number conversion.\n */\npublic actual fun String.toShort(radix: Int): Short = toShortOrNull(radix) ?:
numberFormatError(this)\n\n/**\n * Parses the string as an [Int] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid representation of a number.\n */\npublic actual fun
String.toInt(): Int = toIntOrNull() ?: numberFormatError(this)\n\n/**\n * Parses the string as an [Int] number and
returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a number.\n *
@throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n */\npublic
actual fun String.toInt(radix: Int): Int = toIntOrNull(radix) ?: numberFormatError(this)\n\n/**\n * Parses the string
as a [Long] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation
of a number.\n */\npublic actual fun String.toLong(): Long = toLongOrNull() ?: numberFormatError(this)\n\n/**\n *
Parses the string as a [Long] number and returns the result.\n * @throws NumberFormatException if the string is
not a valid representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for
string to number conversion.\n */\npublic actual fun String.toLong(radix: Int): Long = toLongOrNull(radix) ?:
numberFormatError(this)\n\n/**\n * Parses the string as a [Double] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid representation of a number.\n */\npublic actual fun
String.toDouble(): Double = +(this.asDynamic()).unsafeCast<Double>().also { \n    if (it.isNaN() && !this.isNaN())
|| it == 0.0 && this.isBlank())\n        numberFormatError(this)\n}\n\n/**\n * Parses the string as a [Float] number
and returns the result.\n * @throws NumberFormatException if the string is not a valid representation
of a number.\n */\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toFloat(): Float =
toDouble().unsafeCast<Float>()\n\n/**\n * Parses the string as a [Double] number and returns the result.\n * or `null`
if the string is not a valid representation of a number.\n */\npublic actual fun String.toDoubleOrNull(): Double? =
+(this.asDynamic()).unsafeCast<Double>().takeIf { \n    !(it.isNaN() && !this.isNaN()) || it == 0.0 &&
this.isBlank()\n}\n\n/**\n * Parses the string as a [Float] number and returns the result.\n * or `null` if the string is
not a valid representation of a number.\n */\n@kotlin.internal.InlineOnly\npublic actual inline fun
String.toFloatOrNull(): Float? = toDoubleOrNull().unsafeCast<Float?>()\n\n/**\n * Returns a string representation
of this [Byte] value in the specified [radix].\n * @throws IllegalArgumentException when [radix] is not a valid
radix for number to string conversion.\n */\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic
actual inline fun Byte.toString(radix: Int): String = this.toInt().toString(radix)\n\n/**\n * Returns a string
representation of this [Short] value in the specified [radix].\n * @throws IllegalArgumentException when [radix]
is not a valid radix for number to string conversion.\n */
*^@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Short.toString(radix: Int): String =
this.toInt().toString(radix)\n\n/**\n * Returns a string representation of this [Int] value in the specified [radix].\n *
@throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n */
*^@SinceKotlin("1.2")\npublic actual fun Int.toString(radix: Int): String =
asDynamic().toString(checkRadix(radix))\n\nprivate fun String.isNaN(): Boolean = when (this.lowercase()) { \n

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\"nan\", \"+nan\", \"-nan\" -> true\n else -> false\n}\n\n/**\n * Checks whether the given [radix] is valid radix for
string to number and number to string conversion.\n */\n@PublishedApi\ninternal
actual fun checkRadix(radix: Int): Int {\n if (radix !in 2..36) {\n throw IllegalArgumentException(\"radix
$radix was not in valid range 2..36\")\n }\n return radix\n}\n\ninternal actual fun digitOf(char: Char, radix: Int):
Int = when {\n char >= '0' && char <= '9' -> char - '0'\n char >= 'A' && char <= 'Z' -> char - 'A' + 10\n char >=
'a' && char <= 'z' -> char - 'a' + 10\n char < \"\u0080\" -> -1\n char >= \"\uFF21\" && char <= \"\uFF3A\" -> char -
\" \uFF21\" + 10 // full-width latin capital letter\n char >= \"\uFF41\" && char <= \"\uFF5A\" -> char - \"\uFF41\" + 10 //
full-width latin small letter\n else -> char.digitToIntImpl()\n}.let { if (it >= radix) -1 else it }\n\", \"/*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\nimport
kotlin.js.RegExp\n\n/**\n
* Provides enumeration values to use to set regular expression options.\n */\n\npublic actual enum class
RegexOption(val value: String) {\n /** Enables case-insensitive matching. */\n IGNORE_CASE(\"i\"),\n /**
Enables multiline mode.\n * In multiline mode the expressions `^` and `$` match just after or just before,\n
* respectively, a line terminator or the end of the input sequence. */\n MULTILINE(\"m\")\n}\n\nprivate fun
Iterable<RegexOption>.toFlags(prepend: String): String = joinToString(\"\", prefix = prepend) { it.value
}\n\n/**\n * Represents the results from a single capturing group within a [MatchResult] of [Regex].\n */\n *
@param value The value of captured group.\n */\n\npublic actual data class MatchGroup(actual val value:
String)\n\n/**\n * Returns a named group with the specified [name].\n */\n * @return An instance of
[MatchGroup] if the group with the specified [name] was matched or `null` otherwise.\n * @throws
IllegalArgumentException
if there is no group with the specified [name] defined in the regex pattern.\n * @throws
UnsupportedOperationException if this match group collection doesn't support getting match groups by name,\n *
for example, when it's not supported by the current platform.\n */\n\n@SinceKotlin(\"1.7\")\n\npublic operator fun
MatchGroupCollection.get(name: String): MatchGroup? {\n val namedGroups = this as?
MatchNamedGroupCollection\n ?: throw UnsupportedOperationException(\"Retrieving groups by name is not
supported on this platform.\")\n return namedGroups[name]\n}\n\n/**\n * Represents a compiled regular
expression.\n * Provides functions to match strings in text with a pattern, replace the found occurrences and split
text around matches.\n * For pattern syntax reference see [MDN RegExp](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp#Special_characters_meaning_in_regular_expressions)\n
*/\n * and
[http://www.w3schools.com/jsref/jsref_obj_regexp.asp](https://www.w3schools.com/jsref/jsref_obj_regexp.asp).\n
*/\n * Note that `RegExp` objects under the hood are constructed with [the `u`
flag](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp/unicode)\n * that
enables Unicode-related features in regular expressions. This also makes the pattern syntax more strict,\n * for
example, prohibiting unnecessary escape sequences.\n */\n * @constructor Creates a regular expression from the
specified [pattern] string and the specified set of [options].\n */\n\npublic actual class Regex actual
constructor(pattern: String, options: Set<RegexOption>) {\n /** Creates a regular expression from the specified
[pattern] string and the specified single [option]. */\n public actual constructor(pattern: String, option:
RegexOption) : this(pattern, setOf(option))\n /** Creates a regular expression from the specified [pattern] string
and the default options. */\n public actual constructor(pattern:
String) : this(pattern, emptySet())\n\n /** The pattern string of this regular expression. */\n public actual val
pattern: String = pattern\n /** The set of options that were used to create this regular expression. */\n public
actual val options: Set<RegexOption> = options.toSet()\n private val nativePattern: RegExp = RegExp(pattern,
options.toFlags(\"gu\"))\n private var nativeStickyPattern: RegExp? = null\n private fun initStickyPattern():
RegExp =\n nativeStickyPattern ?: RegExp(pattern, options.toFlags(\"yu\")).also { nativeStickyPattern = it }\n\n
private var nativeMatchesEntirePattern: RegExp? = null\n private fun initMatchesEntirePattern(): RegExp =\n
nativeMatchesEntirePattern ?: run {\n if (pattern.startsWith('^') && pattern.endsWith('$'))\n

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nativePattern\n         else\n         return RegExp("^${pattern.trimStart('^').trimEnd('$')}\$"),
options.toFlags("\\gu"))\n     }.also { nativeMatchesEntirePattern
= it }\n\n\n     /** Indicates whether the regular expression matches the entire [input]. */\n     public actual infix fun
matches(input: CharSequence): Boolean {\n         nativePattern.reset()\n         val match =
nativePattern.exec(input.toString())\n         return match != null && match.index == 0 && nativePattern.lastIndex ==
input.length\n     }\n\n     /** Indicates whether the regular expression can find at least one match in the specified
[input]. */\n     public actual fun containsMatchIn(input: CharSequence): Boolean {\n         nativePattern.reset()\n
return nativePattern.test(input.toString())\n     }\n\n     @SinceKotlin("1.7")\n     @WasExperimental(ExperimentalStdlibApi::class)\n     public actual fun matchesAt(input: CharSequence, index:
Int): Boolean {\n         if (index < 0 || index > input.length) {\n             throw IndexOutOfBoundsException("index
out of bounds: $index, input length: ${input.length}")\n         }\n         val pattern = initStickyPattern()\n
         pattern.lastIndex = index\n         return pattern.test(input.toString())\n     }\n\n     /**\n     * Returns the first match
of a regular expression in the [input], beginning at the specified [startIndex].\n     *\n     * @param startIndex An
index to start search with, by default 0. Must be not less than zero and not greater than `input.length()`\n     *\n
     * @return An instance of [MatchResult] if match was found or `null` otherwise.\n     * @throws
IndexOutOfBoundsException if [startIndex] is less than zero or greater than the length of the [input] char
sequence.\n     * @sample samples.text.Regexps.find\n     */\n\n     @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n     public actual fun find(input:
CharSequence, startIndex: Int = 0): MatchResult? {\n         if (startIndex < 0 || startIndex > input.length) {\n
throw IndexOutOfBoundsException("Start index out of bounds: $startIndex, input length: ${input.length}")\n
        }\n         return nativePattern.findNext(input.toString(),
startIndex, nativePattern)\n     }\n\n     /**\n     * Returns a sequence of all occurrences of a regular expression within
the [input] string, beginning at the specified [startIndex].\n     *\n     * @throws IndexOutOfBoundsException if
[startIndex] is less than zero or greater than the length of the [input] char sequence.\n     *\n     * @sample
samples.text.Regexps.findAll\n     */\n\n     @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n     public actual fun findAll(input:
CharSequence, startIndex: Int = 0): Sequence<MatchResult> {\n         if (startIndex < 0 || startIndex > input.length)
{\n             throw IndexOutOfBoundsException("Start index out of bounds: $startIndex, input length:
${input.length}")\n         }\n         return generateSequence({ find(input, startIndex) }, { match -> match.next() })\n
        }\n     }\n\n     /**\n     * Attempts to match the entire [input] CharSequence against the pattern.\n     *\n
     * @return An
instance of [MatchResult] if the
entire input matches or `null` otherwise.\n     */\n     public actual fun matchEntire(input: CharSequence):
MatchResult? =\n         initMatchesEntirePattern().findNext(input.toString(), 0, nativePattern)\n\n     @SinceKotlin("1.7")\n     @WasExperimental(ExperimentalStdlibApi::class)\n     public actual fun matchAt(input:
CharSequence, index: Int): MatchResult? {\n         if (index < 0 || index > input.length) {\n             throw
IndexOutOfBoundsException("index out of bounds: $index, input length: ${input.length}")\n         }\n         return
initStickyPattern().findNext(input.toString(), index, nativePattern)\n     }\n\n     /**\n     * Replaces all occurrences
of this regular expression in the specified [input] string with specified [replacement] expression.\n     *\n     * The
replacement string may contain references to the captured groups during a match. Occurrences of `${name}` or
`${index}`\n     * in the replacement string will be substituted with the subsequences corresponding
to the captured groups with the specified name or index.\n     * In case of `${index}`, the first digit after '$' is always
treated as a part of group reference. Subsequent digits are incorporated\n     * into `index` only if they would form a
valid group reference. Only the digits '0'..'9' are considered as potential components\n     * of the group reference.
Note that indexes of captured groups start from 1, and the group with index 0 is the whole match.\n     * In case of
`${name}`, the `name` can consist of latin letters 'a'..'z' and 'A'..'Z', or digits '0'..'9'. The first character must be\n
     * a letter.\n     *\n     * Backslash character '\\' can be used to include the succeeding character as a literal in the
replacement string, e.g. `\\$` or `\\\\`.\n     * [Regex.escapeReplacement] can be used if [replacement] have to be
treated as a literal string.\n     *\n     * @param input the char sequence to find matches of this regular expression

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in\n    * @param replacement the expression
to replace found matches with\n    * @return the result of replacing each occurrence of this regular expression in
[input] with the result of evaluating the [replacement] expression\n    * @throws RuntimeException if
[replacement] expression is malformed, or capturing group with specified `name` or `index` does not exist\n    */\n
public actual fun replace(input: CharSequence, replacement: String): String {\n    if (!replacement.contains("\\\\")\n    && !replacement.contains("$")) {\n        return input.toString().nativeReplace(nativePattern, replacement)\n    }\n    return replace(input) { substituteGroupRefs(it, replacement) }\n }\n\n /**\n  * Replaces all
occurrences of this regular expression in the specified [input] string with the result of\n  * the given function
[transform] that takes [MatchResult] and returns a string to be used as a\n  * replacement for that match.\n  */\n
public actual fun replace(input: CharSequence, transform:
(MatchResult) -> CharSequence): String {\n    var match = find(input)\n    if (match == null) return
input.toString()\n\n    var lastStart = 0\n    val length = input.length\n    val sb = StringBuilder(length)\n
do {\n    val foundMatch = match!\n    sb.append(input, lastStart, foundMatch.range.start)\n
sb.append(transform(foundMatch))\n    lastStart = foundMatch.range.endInclusive + 1\n    match =
foundMatch.next()\n    } while (lastStart < length && match != null)\n\n    if (lastStart < length) {\n
sb.append(input, lastStart, length)\n    }\n\n    return sb.toString()\n }\n\n /**\n  * Replaces the first
occurrence of this regular expression in the specified [input] string with specified [replacement] expression.\n  */\n
  * The replacement string may contain references to the captured groups during a match. Occurrences of `${name}`
or `${index}`\n  * in the replacement string
will be substituted with the subsequences corresponding to the captured groups with the specified name or index.\n
  * In case of `${index}`, the first digit after '$' is always treated as a part of group reference. Subsequent digits are
incorporated\n  * into `index` only if they would form a valid group reference. Only the digits '0'..'9' are considered
as potential components\n  * of the group reference. Note that indexes of captured groups start from 1, and the
group with index 0 is the whole match.\n  * In case of `${name}`, the `name` can consist of latin letters 'a'..'z' and
'A'..'Z', or digits '0'..'9'. The first character must be\n  * a letter.\n  * \n  * Backslash character '\\' can be used to
include the succeeding character as a literal in the replacement string, e.g, `\\$` or `\\\\`. \n  *
[Regex.escapeReplacement] can be used if [replacement] have to be treated as a literal string.\n  */\n
  * @param
input the char sequence to find a match of
this regular expression in\n  * @param replacement the expression to replace the found match with\n  * @return
the result of replacing the first occurrence of this regular expression in [input] with the result of evaluating the
[replacement] expression\n  * @throws RuntimeException if [replacement] expression is malformed, or capturing
group with specified `name` or `index` does not exist\n  */\n
public actual fun replaceFirst(input: CharSequence,
replacement: String): String {\n    if (!replacement.contains("\\\\") && !replacement.contains("$")) {\n    val
nonGlobalOptions = options.toFlags("\\u")\n    return input.toString().nativeReplace(RegExp(pattern,
nonGlobalOptions), replacement)\n    }\n\n    val match = find(input) ?: return input.toString()\n\n    return
buildString {\n    append(input.substring(0, match.range.first))\n    append(substituteGroupRefs(match,
replacement))\n    append(input.substring(match.range.last
+ 1, input.length))\n    }\n }\n\n /**\n  * Splits the [input] CharSequence to a list of strings around matches
of this regular expression.\n  */\n
  * @param limit Non-negative value specifying the maximum number of
substrings the string can be split to.\n  * Zero by default means no limit is set.\n  */\n
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun split(input:
CharSequence, limit: Int = 0): List<String> {\n    requireNonNegativeLimit(limit)\n    val matches =
findAll(input).let { if (limit == 0) it else it.take(limit - 1) }\n    val result = mutableListOf<String>()\n    var
lastStart = 0\n    for (match in matches) {\n    result.add(input.subSequence(lastStart,
match.range.start).toString())\n    lastStart = match.range.endInclusive + 1\n    }\n
result.add(input.subSequence(lastStart, input.length).toString())\n    return result\n }\n\n /**\n  * Splits the
[input] CharSequence to a sequence of strings around matches of this regular expression.\n  */\n
  * @param limit
Non-negative value specifying the maximum number of substrings the string can be split to.\n  * Zero by default

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means no limit is set.\n * @sample samples.text.Regexps.splitToSequence\n */\n @SinceKotlin("1.6")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun\n splitToSequence(input: CharSequence, limit: Int = 0): Sequence<String> {\n requireNonNegativeLimit(limit)\n return sequence {\n var match = find(input)\n if (match ==\n null || limit == 1) {\n yield(input.toString())\n return@sequence\n }\n var\n nextStart = 0\n var splitCount = 0\n do {\n val foundMatch = match!!\n yield(input.substring(nextStart, foundMatch.range.first))\n\n nextStart = foundMatch.range.endInclusive + 1\n match = foundMatch.next()\n } while\n ( ++splitCount != limit - 1 && match != null)\n yield(input.substring(nextStart, input.length))\n }\n }\n\n /**\n * Returns the string representation of this regular expression, namely the [pattern] of this regular\n expression.\n *\n * Note that another regular expression constructed from the same pattern string may have\n different [options]\n * and may match strings differently.\n */\n public override fun toString(): String =\n nativePattern.toString()\n actual companion object {\n /**\n * Returns a regular expression that\n matches the specified [literal] string literally.\n * No characters of that string will have special meaning when\n searching for an occurrence of the regular expression.\n */\n public actual fun fromLiteral(literal: String):\n Regex = Regex(escape(literal))\n\n /**\n * Returns a regular expression pattern string that matches the specified [literal] string literally.\n * No characters of that string will have special meaning when searching for an occurrence of the regular\n expression.\n */\n public actual fun escape(literal: String): String = literal.nativeReplace(patternEscape,\n '\\\\$&\\')\n\n /**\n * Returns a literal replacement expression for the specified [literal] string.\n * No\n characters of that string will have special meaning when it is used as a replacement string in [Regex.replace]\n function.\n */\n public actual fun escapeReplacement(literal: String): String =\n literal.nativeReplace(replacementEscape, '\\\\$&\\')\n\n private val patternEscape = Regex("\\\\$")\n private val replacementEscape = Regex("\\\\$")\n\n internal fun nativeEscapeReplacement(literal: String): String =\n literal.nativeReplace(nativeReplacementEscape,\n \\$$$$)\n\n private val nativeReplacementEscape = Regex("\\\\$")\n\n } private fun\n Regex.findNext(input: String, from: Int, nextPattern: Regex): MatchResult? {\n this.lastIndex = from\n val\n match = exec(input)\n if (match == null) return null\n val range = match.index..lastIndex - 1\n return object :\n MatchResult {\n override val range: IntRange = range\n override val value: String\n get() =\n match[0]!\n\n override val groups: MatchGroupCollection = object : MatchNamedGroupCollection,\n AbstractCollection<MatchGroup?>() {\n override val size: Int get() = match.length\n override fun\n iterator(): Iterator<MatchGroup?> = indices.asSequence().map { this[it] }.iterator()\n\n override fun get(index:\n Int): MatchGroup? = match[index]?.let { MatchGroup(it) }\n\n override fun get(name: String): MatchGroup?\n {\n // An object\n of named capturing groups whose keys are the names and values are the capturing groups\n // or undefined\n if no named capturing groups were defined.\n val groups = match.asDynamic().groups\n ?:\n throw IllegalArgumentException("Capturing group with name {$name} does not exist. No named capturing group\n was defined in Regex")\n\n // If the match was successful but the group specified failed to match any part\n of the input sequence,\n // the associated value is 'undefined'. Value for a non-existent key is also\n 'undefined'. Thus, explicitly check if the key exists.\n if (!hasOwnPrototypeProperty(groups, name))\n throw IllegalArgumentException("Capturing group with name {$name} does not exist")\n\n val\n value = groups[name]\n return if (value == undefined) null else MatchGroup(value as String)\n }\n\n }\n\n private fun hasOwnPrototypeProperty(o:\n Any?, name: String): Boolean {\n return js("Object").prototype.hasOwnProperty.call(o,\n name).unsafeCast<Boolean>()\n }\n\n private var groupValues_: List<String>? = null\n\n override\n val groupValues: List<String>\n get() {\n if (groupValues_ == null) {\n groupValues_ =

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get(index: Int): Char\n\n override fun subSequence(startIndex: Int, endIndex: Int): CharSequence\n\n override
fun append(value: Char): StringBuilder\n\n override fun append(value: CharSequence?):
StringBuilder\n\n override fun append(value: CharSequence?, startIndex: Int, endIndex: Int): StringBuilder\n\n
/**\n * Reverses the contents of this string builder and returns this instance.\n *\n * Surrogate pairs included
in this string builder are treated as single characters.\n * Therefore, the order of the high-low surrogates is never
reversed.\n *\n * Note that the reverse operation may produce new surrogate pairs that were unpaired low-
surrogates and high-surrogates before the operation.\n * For example, reversing `"\uDC00\uD800"` produces
`"\uD800\uDC00"` which is a valid surrogate pair.\n */\n fun reverse(): StringBuilder\n\n /**\n *
Appends the string representation of the specified object [value] to this string builder and returns this instance.\n
*\n * The overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n
* and then that string was appended
to this string builder.\n */\n fun append(value: Any?): StringBuilder\n\n /**\n * Appends the string
representation of the specified boolean [value] to this string builder and returns this instance.\n *\n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was appended to this string builder.\n */\n @SinceKotlin("1.3")\n fun append(value: Boolean):
StringBuilder\n\n /**\n * Appends characters in the specified character array [value] to this string builder and
returns this instance.\n *\n * Characters are appended in order, starting at the index 0.\n */\n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun append(value: CharArray):
StringBuilder\n\n /**\n * Appends the specified string [value] to this string builder and returns this instance.\n
*\n * If [value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"`
are appended.\n */\n @SinceKotlin("1.3")\n fun append(value: String?): StringBuilder\n\n /**\n *
Returns the current capacity of this string builder.\n *\n * The capacity is the maximum length this string
builder can have before an allocation occurs.\n */\n @SinceKotlin("1.3")\n// @ExperimentalStdlibApi\n
@Deprecated("Obtaining StringBuilder capacity is not supported in JS and common code.", level =
DeprecationLevel.ERROR)\n fun capacity(): Int\n\n /**\n * Ensures that the capacity of this string builder is
at least equal to the specified [minimumCapacity].\n *\n * If the current capacity is less than the
[minimumCapacity], a new backing storage is allocated with greater capacity.\n * Otherwise, this method takes
no action and simply returns.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun ensureCapacity(minimumCapacity: Int)\n\n /**\n *
Returns the index
within this string builder of the first occurrence of the specified [string].\n *\n * Returns `-1` if the specified
[string] does not occur in this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun indexOf(string: String): Int\n\n /**\n * Returns the
index within this string builder of the first occurrence of the specified [string],\n * starting at the specified
[startIndex].\n *\n * Returns `-1` if the specified [string] does not occur in this string builder starting at the
specified [startIndex].\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
fun indexOf(string: String, startIndex: Int): Int\n\n /**\n * Returns the index within this string builder of the last
occurrence of the specified [string].\n * The last occurrence of empty string `""` is considered to be at the index
equal to `this.length`.\n *\n * Returns `-1` if the specified
[string] does not occur in this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun lastIndexOf(string: String): Int\n\n /**\n * Returns
the index within this string builder of the last occurrence of the specified [string],\n * starting from the specified
[startIndex] toward the beginning.\n *\n * Returns `-1` if the specified [string] does not occur in this string
builder starting at the specified [startIndex].\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun lastIndexOf(string: String, startIndex: Int): Int\n\n
/**\n * Inserts the string representation of the specified boolean [value] into this string builder at the specified
[index] and returns this instance.\n *\n * The overall effect is exactly as if the [value] were converted to a string
by the `value.toString()` method,\n * and then that string was inserted into this string builder

```

```

at the specified [index].\n * \n * @throws IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Boolean): StringBulder\n\n
/**\n * Inserts the specified character [value] into this string builder at the specified [index] and returns this
instance.\n * \n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of
this string builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: Char): StringBulder\n\n /**\n * Inserts characters in the specified character array
[value] into this string builder at the specified [index] and returns this instance.\n * \n * The inserted characters
go in same order as in the [value] character array, starting at [index].\n * \n *
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n
* \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int,
value: CharArray): StringBulder\n\n /**\n * Inserts characters in the specified character sequence [value] into
this string builder at the specified [index] and returns this instance.\n * \n * The inserted characters go in the
same order as in the [value] character sequence, starting at [index].\n * \n * @param index the position in this
string builder to insert at.\n * @param value the character sequence from which characters are inserted. If [value]
is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n * \n * @throws IndexOutOfBoundsException if
[index] is less than zero or greater than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: CharSequence?): StringBulder\n\n /**\n * Inserts the string representation of the
specified object [value] into this string builder at the specified [index] and returns this instance.\n * \n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was inserted into this string builder at the specified [index].\n * \n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value:
Any?): StringBulder\n\n /**\n * Inserts the string [value] into this string builder at the specified [index] and
returns this instance.\n * \n * If [value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n * \n *
@throws IndexOutOfBoundsException if [index] is less than zero
or greater than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: String?): StringBulder\n\n
/**\n * Sets the length of this string builder to the specified [newLength].\n * \n * If the [newLength] is less
than the current length, it is changed to the specified [newLength].\n * \n * Otherwise, null characters `'\u0000'` are
appended to this string builder until its length is less than the [newLength].\n * \n * Note that in Kotlin/JS [set]
operator function has non-constant execution time complexity.\n * \n * Therefore, increasing length of this string
builder and then updating each character by index may slow down your program.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less than zero.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun setLength(newLength:
Int)\n\n /**\n * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive)
and up to the [length] (exclusive).\n * \n * @throws IndexOutOfBoundsException if [startIndex] is less than
zero or greater than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun substring(startIndex: Int): String\n\n /**\n * Returns
a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the [endIndex]
(exclusive).\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex]
or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun substring(startIndex: Int,
endIndex: Int): String\n\n /**\n * Attempts to reduce storage used for this string builder.\n
* \n * If the backing storage of this string builder is larger than necessary to hold its current contents,\n *
then it may be resized to become more space efficient.\n * \n * Calling this method may, but is not required to, affect
the value of the [capacity] property.\n * \n @SinceKotlin("1.4")\n

```



```

@WasExperimental(ExperimentalStdlibApi::class)\n fun trimToSize()\n\n/**\n * Clears the content of this
string builder making it empty and returns this instance.\n *\n * @sample samples.text.Strings.clearStringBuilder\n
*/\n@SinceKotlin("1.3")\npublic expect fun StringBuilder.clear(): StringBuilder\n\n/**\n * Sets the character at
the specified [index] to the specified [value].\n *\n * @throws IndexOutOfBoundsException if [index] is out of
bounds of this string builder.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect operator fun
StringBuilder.set(index: Int, value: Char)\n\n/**\n * Replaces characters in the specified
range of this string builder with characters in the specified string [value] and returns this instance.\n *\n * @param
startIndex the beginning (inclusive) of the range to replace.\n * @param endIndex the end (exclusive) of the range to
replace.\n * @param value the string to replace with.\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] if [startIndex] is less than zero, greater than the length of this string builder, or
`startIndex > endIndex`.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
StringBuilder.setRange(startIndex: Int, endIndex: Int, value: String): StringBuilder\n\n/**\n * Removes
the character at the specified [index] from this string builder and returns this instance.\n *\n * If the `Char` at the
specified [index] is part of a supplementary code point, this method does not remove the entire supplementary
character.\n *\n * @param index the index of `Char` to remove.\n *\n * @throws IndexOutOfBoundsException
if [index] is out of bounds of this string builder.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
StringBuilder.deleteAt(index: Int): StringBuilder\n\n/**\n * Removes characters in the specified range from this
string builder and returns this instance.\n *\n * @param startIndex the beginning (inclusive) of the range to
remove.\n * @param endIndex the end (exclusive) of the range to remove.\n *\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] is out of range of this string builder
indices or when `startIndex > endIndex`.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
StringBuilder.deleteRange(startIndex: Int, endIndex: Int): StringBuilder\n\n/**\n * Copies characters from this
string builder into the [destination] character array.\n *\n * @param destination the array to copy to.\n * @param
destinationOffset the position in the array to copy to,
0 by default.\n * @param startIndex the beginning (inclusive) of the range to copy, 0 by default.\n * @param
endIndex the end (exclusive) of the range to copy, length of this string builder by default.\n *\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
string builder indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the
subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is
out of the [destination] array indices range.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
StringBuilder.toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int =
this.length)\n\n/**\n * Appends characters in a subarray of the specified character array [value] to this string builder
and returns this instance.\n *\n * Characters are appended in order,
starting at specified [startIndex].\n *\n * @param value the array from which characters are appended.\n * @param
startIndex the beginning (inclusive) of the subarray to append.\n * @param endIndex the end (exclusive) of the
subarray to append.\n *\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
[startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
StringBuilder.appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder\n\n/**\n * Appends a
subsequence of the specified character sequence [value] to this string builder and returns this instance.\n *\n *
@param value the character sequence from which a subsequence is appended.\n * @param startIndex the beginning
(inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n
*\n * @throws IndexOutOfBoundsException
*/

```

or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.

```

*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic expect fun
StringBuilder.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder\n/n/**n * Inserts
characters in a subarray of the specified character array [value] into this string builder at the specified [index] and
returns this instance.\n *n * The inserted characters go in same order as in the [value] array, starting at [index].\n
*n * @param index the position in this string builder to insert at.\n * @param value the array from which characters
are inserted.\n * @param startIndex the beginning (inclusive) of the subarray to insert.\n * @param endIndex the
end (exclusive) of the subarray to insert.\n *n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of the [value] array indices or when `startIndex > endIndex`.n * @throws IndexOutOfBoundsException if
[index] is less than zero or greater than the length of this string builder.\n
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic expect fun
StringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder\n/n/**n *
Inserts characters in a subsequence of the specified character sequence [value] into this string builder at the specified
[index] and returns this instance.\n *n * The inserted characters go in the same order as in the [value] character
sequence, starting at [index].\n *n * @param index the position in this string builder to insert at.\n * @param value
the character sequence from which a subsequence is inserted.\n * @param startIndex the beginning (inclusive) of the
subsequence to insert.\n * @param endIndex the end (exclusive) of the subsequence to insert.\n *n * @throws
IndexOutOfBoundsException
or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence
indices or when `startIndex > endIndex`.n * @throws IndexOutOfBoundsException if [index] is less than zero or
greater than the length of this string builder.\n
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic expect fun
StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int):
StringBuilder\n/n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")n@Deprecated("Use
append(value: Any?) instead", ReplaceWith("append(value = obj)"),
DeprecationLevel.WARNING)n@kotlin.internal.InlineOnlynpublic inline fun StringBuilder.append(obj: Any?):
StringBuilder = this.append(obj)\n/n/**n * Builds new string by populating newly created [StringBuilder] using
provided [builderAction]\n * and then converting it to [String].\n *\/n@kotlin.internal.InlineOnlynpublic inline fun
buildString(builderAction: String Builder.() -> Unit):
String {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
StringBuilder().apply(builderAction).toString()\n}\n/n/**n * Builds new string by populating newly created
[StringBuilder] initialized with the given [capacity]\n * using provided [builderAction] and then converting it to
[String].\n *\/n@SinceKotlin("1.1")n@kotlin.internal.InlineOnlynpublic inline fun buildString(capacity: Int,
builderAction: String Builder.() -> Unit): String {\n contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE) }\n return
StringBuilder(capacity).apply(builderAction).toString()\n}\n/n/**n * Appends all arguments to the given
StringBuilder.\n *\/npublic fun StringBuilder.append(vararg value: String?): String Builder {\n for (item in
value)\n append(item)\n return this\n}\n/n/**n * Appends all arguments to the given StringBuilder.\n
*\/npublic fun StringBuilder.append(vararg value: Any?): String Builder {\n for (item in value)\n
append(item)\n return this\n}\n/n/** Appends a line feed character (`\n`) to this StringBuilder.
*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun StringBuilder.appendLine():
StringBuilder = append("\n")\n/n/** Appends [value] to this [StringBuilder], followed by a line feed character
(`\n`).\n *\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun StringBuilder.appendLine(value:
CharSequence?): String Builder = append(value).appendLine()\n/n/** Appends [value] to this [StringBuilder],
followed by a line feed character (`\n`).\n *\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun
StringBuilder.appendLine(value: String?): String Builder = append(value).appendLine()\n/n/** Appends [value] to

```

this [StringBuilder], followed by a line feed character (`\n`).

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.appendLine(value: Any?):  
StringBuilder = append(value).appendLine()\n\n/**
```

Appends [value] to this [StringBuilder], followed by a line feed character (`\n`).

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.appendLine(value:  
CharArray): StringBuilder = append(value).appendLine()\n\n/** Appends [value] to this [StringBuilder], followed  
by a line feed character (`\n`). *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun  
StringBuilder.appendLine(value: Char): StringBuilder = append(value).appendLine()\n\n/** Appends [value] to this  
[StringBuilder], followed by a line feed character (`\n`).
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.appendLine(value:  
Boolean): StringBuilder = append(value).appendLine()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin  
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be  
found in the license/LICENSE.txt file.\n *\n\npackage kotlin.text\n\nimport  
kotlin.js.RegExp\n\n@kotlin.internal.InlineOnly\ninternal
```

```
actual inline fun String.nativeIndexOf(ch: Char, fromIndex: Int): Int = nativeIndexOf(ch.toString(),  
fromIndex)\n\n@kotlin.internal.InlineOnly\ninternal actual inline fun String.nativeLastIndexOf(ch: Char,  
fromIndex: Int): Int = nativeLastIndexOf(ch.toString(), fromIndex)\n\n/**\n * Returns `true` if this string starts with  
the specified prefix.\n *\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic  
actual fun String.startsWith(prefix: String, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase)\n        return  
nativeStartsWith(prefix, 0)\n    else\n        return regionMatches(0, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if a substring of this string starting at the specified offset [startIndex] starts with the specified prefix.\n *\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun
```

```
String.startsWith(prefix: String, startIndex: Int, ignoreCase: Boolean = false): Boolean  
{\n    if (!ignoreCase)\n        return nativeStartsWith(prefix, startIndex)\n    else\n        return  
regionMatches(startIndex, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if this string ends with  
the specified suffix.\n *\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic  
actual fun String.endsWith(suffix: String, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase)\n        return  
nativeEndsWith(suffix)\n    else\n        return regionMatches(length - suffix.length, suffix, 0, suffix.length,  
ignoreCase)\n}\n\n@Deprecated("Use Regex.matches() instead",
```

```
ReplaceWith("regex.toRegex().matches(this)")\n@DeprecatedSinceKotlin(warningSince = "1.6")\npublic fun  
String.matches(regex: String): Boolean {\n    @Suppress("DEPRECATION")\n    val result = this.match(regex)\n    return result != null && result.size != 0\n}\n\n/**\n * Returns `true` if this string is empty or consists solely of  
whitespace characters.\n *\n * @sample samples.text.Strings.stringIsBlank\n
```

```
*\npublic actual fun CharSequence.isBlank(): Boolean = length == 0 || indices.all { this[it].isWhitespace() }\n\n/**\n * Returns `true` if this string is equal to [other], optionally ignoring character case.\n *\n * Two strings  
are considered to be equal if they have the same length and the same character at the same index.\n *\n * If [ignoreCase]  
is true, the result of `Char.uppercaseChar().lowercaseChar()` on each character is compared.\n *\n * @param  
ignoreCase `true` to ignore character case when comparing strings. By default `false`.\n
```

```
*\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun  
String?.equals(other: String?, ignoreCase: Boolean = false): Boolean {\n    if (this == null) return other == null\n    if  
(other == null) return false\n    if (!ignoreCase) return this == other\n    if (this.length != other.length) return  
false\n    for (index in 0 until this.length) {\n        val thisChar = this[index]\n        val otherChar  
= other[index]\n        if (!thisChar.equals(otherChar, ignoreCase)) {\n            return false\n        }\n    }\n    return  
true\n}\n\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun  
CharSequence.regionMatches(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int, ignoreCase:  
Boolean = false): Boolean =\n    regionMatchesImpl(thisOffset, other, otherOffset, length, ignoreCase)\n\n/**\n * Returns a copy of this string having its first letter titlecased using the rules of the default locale,\n * or the original  
string if it's empty or already starts with a title case letter.\n *\n * The title case of a character is usually the same as
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its upper case with several exceptions.

```

 * The particular list of characters with the special title case form depends
on the underlying platform.
 * @sample samples.text.Strings.capitalize
 * @Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { if (it.isLowerCase()) it.titlecase()
else it.toString() }"))
 * @DeprecatedSinceKotlin(warningSince = "1.5")
public actual fun String.capitalize():
String {
    return if (isEmpty()) substring(0, 1).uppercase() + substring(1) else this
}
 * Returns a
copy of this string having its first letter lowercased using the rules of the default locale,
 * or the original string if
it's empty or already starts with a lower case letter.
 * @sample samples.text.Strings.decapitalize
 * @Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { it.lowercase()
}"))
 * @DeprecatedSinceKotlin(warningSince = "1.5")
public actual fun String.decapitalize(): String {
    return
if (isEmpty()) substring(0, 1).lowercase() + substring(1) else this
}
 * Returns a string containing this
char sequence repeated [n] times.
 * @throws [IllegalArgumentException] when n < 0.
 * @sample
samples.text.Strings.repeat
 * @public actual fun CharSequence.repeat(n: Int): String {
    require(n
>= 0) { "Count 'n' must be non-negative, but was $n." }
    return when (n) {
        0 -> ""
        1 ->
this.toString()
        else -> {
            var result = ""
            if (!isEmpty()) {
                var s = this.toString()
                var count = n
                while (true) {
                    if ((count and 1) == 1) {
                        result += s
                    }
                    count = count ushr 1
                    if (count == 0) {
                        break
                    }
                    s += s
                }
            }
            return result
        }
    }
}
 * Returns a new string
obtained by replacing all occurrences of the [oldValue] substring in this string
 * with the specified [newValue]
string.
 * @sample samples.text.Strings.replace
 * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun
String.replace(oldValue: String, newValue: String,
ignoreCase: Boolean = false): String =
    nativeReplace(Regex.escape(oldValue), if (ignoreCase) "gui"
else "gu"), Regex.nativeEscapeReplacement(newValue))
 * Returns a new string with all occurrences of
[oldChar] replaced with [newChar].
 * @sample samples.text.Strings.replace
 * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun
String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean = false): String =
    nativeReplace(Regex.escape(oldChar.toString()), if (ignoreCase) "gui" else "gu"),
newChar.toString())
 * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual
fun String.replaceFirst(oldValue: String, newValue: String, ignoreCase: Boolean = false): String =
    nativeReplace(Regex.escape(oldValue), if (ignoreCase) "ui" else "u"),
Regex.nativeEscapeReplacement(newValue))
 * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGU
MENTS")
public actual fun String.replaceFirst(oldChar: Char, newChar:
Char, ignoreCase: Boolean = false): String =
    nativeReplace(Regex.escape(oldChar.toString()), if
(ignoreCase) "ui" else "u"), newChar.toString())
 * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.
 * @package kotlin.text
 * Returns the negative [size] if
[throwOnMalformed] is false, throws [CharacterCodingException] otherwise.
 * @private fun malformed(size: Int,
index: Int, throwOnMalformed: Boolean): Int {
    if (throwOnMalformed) throw
CharacterCodingException("Malformed sequence starting at ${index - 1}")
    return -size
}
 * Returns
code point corresponding to UTF-16 surrogate pair,
 * where the first of the pair is the [high] and the second is in
the [string] at the [index].
 * Returns zero if the pair is malformed and [throwOnMalformed] is false.
 * @throws CharacterCodingException
if the pair is malformed and [throwOnMalformed] is true.
 * @private fun codePointFromSurrogate(string: String,
high: Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int {
    if (high !in 0xD800..0xDBFF || index
>= endIndex) {
        return malformed(0, index, throwOnMalformed)
    }
    val low = string[index].code
    if (low !in 0xDC00..0xDFFF) {
        return malformed(0, index, throwOnMalformed)
    }
    return 0x10000 +
((high and 0x3FF) shl 10) or (low and 0x3FF)
}
 * Returns code point corresponding to UTF-8 sequence of
two bytes,
 * where the first byte of the sequence is the [byte1] and the second byte is in the [bytes] array at the

```

```

[index].\n * Returns zero if the sequence is malformed and [throwOnMalformed] is false.\n *\n * @throws
CharacterCodingException if the sequence of two bytes is malformed and [throwOnMalformed] is true.\n
*\nprivate fun codePointFrom2(bytes: ByteArray, byte1: Int, index: Int, endIndex: Int, throwOnMalformed:
Boolean): Int {\n    if (byte1 and 0x1E == 0 || index >= endIndex) {\n        return malformed(0, index,
throwOnMalformed)\n    }\n    val byte2 = bytes[index].toInt()\n    if (byte2 and 0xC0 != 0x80) {\n        return
malformed(0, index, throwOnMalformed)\n    }\n    return (byte1 shl 6) xor byte2 xor 0xF80}\n}\n\n**\n * Returns
code point corresponding to UTF-8 sequence of three bytes,\n * where the first byte of the sequence is the [byte1]
and the others are in the [bytes] array starting from the [index].\n * Returns a non-positive value indicating number
of bytes from [bytes] included in malformed sequence\n * if the sequence is malformed and [throwOnMalformed] is
false.\n *\n * @throws CharacterCodingException if the sequence of three bytes is malformed and
[throwOnMalformed] is true.\n *\nprivate fun codePointFrom3(bytes: ByteArray, byte1: Int, index: Int, endIndex:
Int, throwOnMalformed: Boolean): Int {\n    if (index >= endIndex) {\n        return malformed(0, index,
throwOnMalformed)\n    }\n    val byte2 = bytes[index].toInt()\n    if (byte1 and 0xF == 0) {\n        if (byte2 and 0xE0 != 0xA0) {\n
// Non-shortest form\n            return malformed(0, index, throwOnMalformed)\n        }\n    } else if (byte1 and 0xF
== 0xD) {\n        if (byte2 and 0xE0 != 0x80) {\n            // Surrogate code point\n                return malformed(0, index,
throwOnMalformed)\n        }\n    } else if (byte2 and 0xC0 != 0x80) {\n        return malformed(0, index,
throwOnMalformed)\n    }\n    if (index + 1 == endIndex) {\n        return malformed(1, index,
throwOnMalformed)\n    }\n    val byte3 = bytes[index + 1].toInt()\n    if (byte3 and 0xC0 != 0x80) {\n        return
malformed(1, index, throwOnMalformed)\n    }\n    return (byte1 shl 12) xor (byte2 shl 6) xor byte3 xor -
0x1E080}\n}\n\n**\n * Returns code point corresponding to UTF-8 sequence of four bytes,\n * where the first byte
of the sequence is the [byte1] and the others are in the [bytes]
array starting from the [index].\n * Returns a non-positive value indicating number of bytes from [bytes] included in
malformed sequence\n * if the sequence is malformed and [throwOnMalformed] is false.\n *\n * @throws
CharacterCodingException if the sequence of four bytes is malformed and [throwOnMalformed] is true.\n
*\nprivate fun codePointFrom4(bytes: ByteArray, byte1: Int, index: Int, endIndex: Int, throwOnMalformed:
Boolean): Int {\n    if (index >= endIndex) {\n        malformed(0, index, throwOnMalformed)\n    }\n    val byte2 =
bytes[index].toInt()\n    if (byte1 and 0xF == 0x0) {\n        if (byte2 and 0xF0 <= 0x80) {\n            // Non-shortest
form\n                return malformed(0, index, throwOnMalformed)\n        }\n    } else if (byte1 and 0xF == 0x4) {\n
if (byte2 and 0xF0 != 0x80) {\n            // Out of Unicode code points domain (larger than U+10FFFF)\n                return
malformed(0, index, throwOnMalformed)\n        }\n    } else if (byte1 and 0xF > 0x4) {\n        return
malformed(0, index, throwOnMalformed)\n    } else if (byte2 and 0xC0 != 0x80) {\n        return
malformed(0, index, throwOnMalformed)\n    }\n    if (index + 1 == endIndex) {\n        return malformed(1, index,
throwOnMalformed)\n    }\n    val byte3 = bytes[index + 1].toInt()\n    if (byte3 and 0xC0 != 0x80) {\n        return
malformed(1, index, throwOnMalformed)\n    }\n    if (index + 2 == endIndex) {\n        return malformed(2, index,
throwOnMalformed)\n    }\n    val byte4 = bytes[index + 2].toInt()\n    if (byte4 and 0xC0 != 0x80) {\n        return
malformed(2, index, throwOnMalformed)\n    }\n    return (byte1 shl 18) xor (byte2 shl 12) xor (byte3 shl 6) xor
byte4 xor 0x381F80}\n}\n\n**\n * Maximum number of bytes needed to encode a single char.\n *\n * Code points in
`0..0x7F` are encoded in a single byte.\n * Code points in `0x80..0x7FF` are encoded in two bytes.\n * Code points
in `0x800..0xD7FF` or in `0xE000..0xFFFF` are encoded in three bytes.\n * Surrogate
code points in `0xD800..0xDFFF` are not Unicode scalar values, therefore aren't encoded.\n * Code points in
`0x10000..0x10FFFF` are represented by a pair of surrogate `Char`s and are encoded in four bytes.\n *\nprivate
const val MAX_BYTES_PER_CHAR = 3\n\n**\n * The byte sequence a malformed UTF-16 char sequence is
replaced by.\n *\nprivate val REPLACEMENT_BYTE_SEQUENCE: ByteArray = byteArrayOf(0xEF.toByte(),
0xBF.toByte(), 0xBD.toByte())\n}\n\n**\n * Encodes the [string] using UTF-8 and returns the resulting [ByteArray].\n
*\n * @param string the string to encode.\n * @param startIndex the start offset (inclusive) of the substring to
encode.\n * @param endIndex the end offset (exclusive) of the substring to encode.\n * @param
throwOnMalformed whether to throw on malformed char sequence or replace by the

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[REPLACEMENT_BYTE_SEQUENCE].\n *\n * @throws CharacterCodingException if the char sequence is
malformed and [throwOnMalformed] is true.\n *\ninternal fun encodeUtf8(string: String,
startIndex: Int, endIndex: Int, throwOnMalformed: Boolean): ByteArray {\n
require(startIndex >= 0 &&
endIndex <= string.length && startIndex <= endIndex)\n\n
val bytes = ByteArray((endIndex - startIndex) *
MAX_BYTES_PER_CHAR)\n
var byteIndex = 0\n
var charIndex = startIndex\n\n
while (charIndex <
endIndex) {\n
val code = string[charIndex++].code\n
when {\n
code < 0x80 ->\n
bytes[byteIndex++] = code.toByte()\n
code < 0x800 -> {\n
bytes[byteIndex++] = ((code shr 6) or
0xC0).toByte()\n
bytes[byteIndex++] = ((code and 0x3F) or 0x80).toByte()\n
}\n
code <
0xD800 || code >= 0xE000 -> {\n
bytes[byteIndex++] = ((code shr 12) or 0xE0).toByte()\n
bytes[byteIndex++] = (((code shr 6) and 0x3F) or 0x80).toByte()\n
bytes[byteIndex++] = ((code and 0x3F)
or 0x80).toByte()\n
}\n
else -> { // Surrogate char value\n
val codePoint = codePointFromSurrogate(string, code, charIndex, endIndex, throwOnMalformed)\n
if (codePoint <= 0) {\n
bytes[byteIndex++] = REPLACEMENT_BYTE_SEQUENCE[0]\n
bytes[byteIndex++] = REPLACEMENT_BYTE_SEQUENCE[1]\n
bytes[byteIndex++] =
REPLACEMENT_BYTE_SEQUENCE[2]\n
}\n
} else {\n
bytes[byteIndex++] = ((codePoint shr
18) or 0xF0).toByte()\n
bytes[byteIndex++] = (((codePoint shr 12) and 0x3F) or 0x80).toByte()\n
bytes[byteIndex++] = (((codePoint shr 6) and 0x3F) or 0x80).toByte()\n
bytes[byteIndex++] =
(((codePoint and 0x3F) or 0x80).toByte()\n
charIndex++\n
}\n
}\n
}\n
}\n\n
return if (bytes.size == byteIndex) bytes else bytes.copyOf(byteIndex)\n}\n\n**\n * The character a malformed
UTF-8 byte sequence is replaced by.\n *\nprivate const val REPLACEMENT_CHAR
= "\uFFFFD"\n\n**\n * Decodes the UTF-8 [bytes] array and returns the resulting [String].\n *\n * @param bytes
the byte array to decode.\n *\n * @param startIndex the start offset (inclusive) of the array to be decoded.\n *\n * @param
endIndex the end offset (exclusive) of the array to be encoded.\n *\n * @param throwOnMalformed whether to throw
on malformed byte sequence or replace by the [REPLACEMENT_CHAR].\n *\n * @throws
CharacterCodingException if the array is malformed UTF-8 byte sequence and [throwOnMalformed] is true.\n
*\ninternal fun decodeUtf8(bytes: ByteArray, startIndex: Int, endIndex: Int, throwOnMalformed: Boolean): String
{\n
require(startIndex >= 0 && endIndex <= bytes.size && startIndex <= endIndex)\n\n
var byteIndex =
startIndex\n
val stringBuilder = StringBuilder()\n\n
while (byteIndex < endIndex) {\n
val byte =
bytes[byteIndex++].toInt()\n
when {\n
byte >= 0 ->\n
stringBuilder.append(byte.toChar())\n
byte
shr 5 == -2 -> {\n
val code = codePointFrom2(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n
if (code <= 0) {\n
stringBuilder.append(REPLACEMENT_CHAR)\n
byteIndex += -
code\n
}\n
} else {\n
stringBuilder.append(code.toChar())\n
byteIndex += 1\n
}\n
}\n
byte shr 4 == -2 -> {\n
val code = codePointFrom3(bytes, byte, byteIndex, endIndex,
throwOnMalformed)\n
if (code <= 0) {\n
stringBuilder.append(REPLACEMENT_CHAR)\n
byteIndex += -code\n
}\n
} else {\n
stringBuilder.append(code.toChar())\n
byteIndex += 2\n
}\n
}\n
byte shr 3 == -2 -> {\n
val code = codePointFrom4(bytes,
byte, byteIndex, endIndex, throwOnMalformed)\n
if (code <= 0) {\n
stringBuilder.append(REPLACEMENT_CHAR)\n
byteIndex += -code\n
}\n
} else {\n
val high = (code - 0x10000) shr 10 or 0xD800\n
val low = (code and 0x3FF) or 0xDC00\n
stringBuilder.append(high.toChar())\n
stringBuilder.append(low.toChar())\n
byteIndex +=
3\n
}\n
}\n
}\n
else -> {\n
malformed(0, byteIndex, throwOnMalformed)\n
}\n
}\n
}\n\n
return
stringBuilder.toString()\n}"/**\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\npackage kotlin\n\n**\n * Returns the detailed description of this throwable with
its stack trace.\n *\n * The detailed description includes:\n * - the short

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description (see [Throwable.toString]) of this throwable;\n * - the complete stack trace;\n * - detailed descriptions
of the exceptions that were [suppressed][suppressedExceptions] in order to deliver this exception;\n * - the detailed
description of each throwable in the [Throwable.cause] chain.\n */\n@SinceKotlin("1.4")\npublic actual fun
Throwable.stackTraceToString(): String = ExceptionTraceBuilder().buildFor(this)\n\n/**\n * Prints the [detailed
description][Throwable.stackTraceToString] of this throwable to console error output.\n
*/\n@SinceKotlin("1.4")\npublic actual fun Throwable.printStackTrace() {\n
console.error(this.stackTraceToString())\n}\n\n/**\n * Adds the specified exception to the list of exceptions that
were\n * suppressed in order to deliver this exception.\n */\n@SinceKotlin("1.4")\npublic actual fun
Throwable.addSuppressed(exception: Throwable) {\n    if (this !== exception) {\n        val suppressed =
this.asDynamic()._suppressed.unsafeCast<MutableList<Throwable>>()\n
        if (suppressed == null) {\n            this.asDynamic()._suppressed = mutableListOf(exception)\n        } else {\n
            suppressed.add(exception)\n        }\n    }\n}\n\n/**\n * Returns a list of all exceptions that were suppressed in
order to deliver this exception.\n */\n@SinceKotlin("1.4")\npublic actual val Throwable.suppressedExceptions:
List<Throwable>\n    get() {\n        return this.asDynamic()._suppressed?.unsafeCast<List<Throwable>>() ?:
emptyList()\n    }\n\nprivate class ExceptionTraceBuilder {\n    private val target = StringBuilder()\n    private val
visited = arrayOf<Throwable>()\n    private var topStack: String = ""\n    private var topStackStart: Int = 0\n
fun buildFor(exception: Throwable): String {\n        exception.dumpFullTrace("", "")\n        return
target.toString()\n    }\n    private fun hasSeen(exception: Throwable): Boolean = visited.any { it === exception
}\n    private fun Throwable.dumpFullTrace(indent:
String, qualifier: String) {\n        this.dumpSelfTrace(indent, qualifier) || return\n        var cause = this.cause\n
while (cause != null) {\n            cause.dumpSelfTrace(indent, "Caused by: ") || return\n            cause =
cause.cause\n        }\n    }\n    private fun Throwable.dumpSelfTrace(indent: String, qualifier: String): Boolean {\n
        target.append(indent).append(qualifier)\n        val shortInfo = this.toString()\n        if (hasSeen(this)) {\n
            target.append("[CIRCULAR REFERENCE, SEE ABOVE: ").append(shortInfo).append("\\n\\n")\n            return
false\n        }\n        visited.asDynamic().push(this)\n        var stack = this.asDynamic().stack as String?\n        if
(stack != null) {\n            val stackStart = stack.indexOf(shortInfo).let { if (it < 0) 0 else it + shortInfo.length }\n
            if (stackStart == 0) target.append(shortInfo).append("\\n\\n")\n            if (topStack.isEmpty()) {\n                topStack
= stack\n                topStackStart = stackStart\n            } else {\n                stack = dropCommonFrames(stack, stackStart)\n
            }\n            if (indent.isNotEmpty()) {\n                // indent stack, but avoid indenting exception message lines\n
                val messageLines = if (stackStart == 0) 0 else 1 + shortInfo.count { c -> c == "\\n" }\n
                stack.lineSequence().forEachIndexed { index: Int, line: String -> }\n                if (index >= messageLines)\n
                    target.append(indent)\n                    target.append(line).append("\\n\\n")\n                } else {\n
                    target.append(stack).append("\\n\\n")\n                }\n            } else {\n                target.append(shortInfo).append("\\n\\n")\n
            }\n            val suppressed = suppressedExceptions\n            if (suppressed.isNotEmpty()) {\n                val
suppressedIndent = indent + "  "\n                for (s in suppressed) {\n                    s.dumpFullTrace(suppressedIndent,
"Suppressed:
\n")\n                }\n            }\n            return true\n        }\n        private fun dropCommonFrames(stack: String, stackStart: Int):
String {\n            var commonFrames: Int = 0\n            var lastBreak: Int = 0\n            var preLastBreak: Int = 0\n            for
(pos in 0 until minOf(topStack.length - topStackStart, stack.length - stackStart)) {\n                val c =
stack[stack.lastIndex - pos]\n                if (c != topStack[topStack.lastIndex - pos]) break\n                if (c == "\\n") {\n
                    commonFrames += 1\n                    preLastBreak = lastBreak\n                    lastBreak = pos\n                }\n
            }\n            if (commonFrames <= 1) return stack\n            while (preLastBreak > 0 && stack[stack.lastIndex - (preLastBreak - 1)]
== '\\n')\n                preLastBreak -= 1\n            // leave 1 common frame to ease matching with the top exception stack\n
            return stack.dropLast(preLastBreak) + "... and ${commonFrames - 1} more common stack frames skipped"\n
        }\n    }\n}\n\n/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage

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kotlin.time\n\nimport kotlin.js.json\nimport kotlin.math.*\n\ninternal actual inline val durationAssertionsEnabled:
Boolean get() = true\n\ninternal actual fun formatToExactDecimals(value: Double, decimals: Int): String {\n    val
rounded = if (decimals == 0) {\n        value\n    } else {\n        val pow = 10.0.pow(decimals)\n
JsMath.round(abs(value) * pow) / pow * sign(value)\n    }\n    return if (abs(rounded) < 1e21) {\n        // toFixed
switches to scientific format after 1e21\n        rounded.asDynamic().toFixed(decimals).unsafeCast<String>()\n    }
else {\n        // toPrecision outputs the specified number of digits, but only for positive numbers\n        val positive =
abs(rounded)\n        val positiveString = positive.asDynamic().toPrecision(ceil(log10(positive))
+ decimals).unsafeCast<String>()\n        if (rounded < 0) \"-$positiveString\" else positiveString\n
}\n}\n\ninternal actual fun formatUpToDecimals(value: Double, decimals: Int): String {\n    return
value.asDynamic().toLocaleString(\"en-us\", json(\"maximumFractionDigits\" to
decimals)).unsafeCast<String>()\n}\n\n\"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage
kotlin.time\n\n@SinceKotlin(\"1.6\")\n@WasExperimental(ExperimentalTime::class)\npublic actual enum class
DurationUnit(internal val scale: Double) {\n    /**\n     * Time unit representing one nanosecond, which is 1/1000 of
a microsecond.\n     */\n    NANOSECONDS(1e0),\n    /**\n     * Time unit representing one microsecond, which is
1/1000 of a millisecond.\n     */\n    MICROSECONDS(1e3),\n    /**\n     * Time unit representing one millisecond,
which is 1/1000 of a second.\n     */\n    MILLISECONDS(1e6),\n    /**\n     * Time unit representing one second.\n
*/\n    SECONDS(1e9),\n    /**\n     * Time unit representing one minute.\n     */\n    MINUTES(60e9),\n    /**\n
     * Time unit representing one hour.\n     */\n    HOURS(3600e9),\n    /**\n     * Time unit representing one day,
which is always equal to 24 hours.\n     */\n    DAYS(86400e9);\n}\n\n@SinceKotlin(\"1.3\")\ninternal actual fun
convertDurationUnit(value: Double, sourceUnit: DurationUnit, targetUnit: DurationUnit): Double {\n    val
sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n    return when {\n
sourceCompareTarget > 0 -> value * (sourceUnit.scale / targetUnit.scale)\n        sourceCompareTarget < 0 -> value /
(targetUnit.scale / sourceUnit.scale)\n        else -> value\n    }\n}\n\n@SinceKotlin(\"1.5\")\ninternal actual fun
convertDurationUnitOverflow(value: Long, sourceUnit: DurationUnit, targetUnit: DurationUnit):
Long {\n    val sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n    return when {\n
sourceCompareTarget > 0 -> value * (sourceUnit.scale / targetUnit.scale).toLong()\n        sourceCompareTarget < 0
-> value / (targetUnit.scale / sourceUnit.scale).toLong()\n        else -> value\n
}\n}\n\n@SinceKotlin(\"1.5\")\ninternal actual fun convertDurationUnit(value: Long, sourceUnit: DurationUnit,
targetUnit: DurationUnit): Long {\n    val sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n
return when {\n        sourceCompareTarget > 0 -> {\n            val scale = (sourceUnit.scale /
targetUnit.scale).toLong()\n            val result = value * scale\n            when {\n                result / scale == value ->
result\n                value > 0 -> Long.MAX_VALUE\n                else -> Long.MIN_VALUE\n            }\n        }\n
sourceCompareTarget < 0 -> value / (targetUnit.scale / sourceUnit.scale).toLong()\n        else -> value\n
}\n}\n\n\n\"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.time\nimport org.w3c.performance.GlobalPerformance\nimport
org.w3c.performance.Performance\nimport kotlin.math.truncate\nimport
kotlin.time.Duration.Companion.milliseconds\nimport
kotlin.time.TimeSource.Monotonic.ValueTimeMark\n\n@Suppress(\"ACTUAL_WITHOUT_EXPECT\") //
visibility\ninternal actual typealias ValueTimeMarkReading = Any\n\n@ExperimentalTime\ninternal interface
DefaultTimeSource : TimeSource {\n    override fun markNow(): ValueTimeMark\n    fun elapsedFrom(timeMark:
ValueTimeMark): Duration\n    fun adjustReading(timeMark: ValueTimeMark, duration: Duration):
ValueTimeMark\n}\n\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\ninternal actual object MonotonicTimeSource
: DefaultTimeSource, TimeSource { // TODO: interface should not be
required here\n    private val actualSource: DefaultTimeSource = run {\n        val isNode: Boolean = js(\"typeof
process !== 'undefined' && process.versions && !!process.versions.node\")\n        if (isNode)\n

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HrTimeSource(js(\\"process\\").unsafeCast<Process>())\n    else\njs(\\"self\\").unsafeCast<GlobalPerformance?>()?.performance?.let(::PerformanceTimeSource)\n    ?:\nDateNowTimeSource\n\n    }\n\n    actual override fun markNow(): ValueTimeMark = actualSource.markNow()\n    actual override fun elapsedFrom(timeMark: ValueTimeMark): Duration = actualSource.elapsedFrom(timeMark)\n    actual override fun adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =\n    actualSource.adjustReading(timeMark, duration)\n\n}\n\ninternal external interface Process {\n    fun hrtime(time: Array<Double> = definedExternally): Array<Double>\n}\n\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\ninternal class HrTimeSource(private val process: Process)\n\n    : DefaultTimeSource {\n\n        override fun markNow(): ValueTimeMark = ValueTimeMark(process.hrtime())\n        override fun elapsedFrom(timeMark: ValueTimeMark): Duration =\n            @Suppress(\\"UNCHECKED_CAST\\")\n                process.hrtime(timeMark.reading as Array<Double>)\n                    .let { (seconds, nanos) ->\n                        seconds.toDuration(DurationUnit.SECONDS) + nanos.toDuration(DurationUnit.NANOSECONDS) }\n\n        override fun adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =\n            @Suppress(\\"UNCHECKED_CAST\\")\n                (timeMark.reading as Array<Double>).let { (seconds, nanos) ->\n                    duration.toComponents { _, addNanos ->\n                        arrayOf<Double>(sumCheckNaN(seconds +\n                            truncate(duration.toDouble(DurationUnit.SECONDS))), nanos + addNanos)\n                    }\n                }.let(TimeSource.Monotonic::ValueTimeMark)\n\n        override fun toString(): String =\n            \\"TimeSource(process.hrtime())"\n\n    }\n\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\ninternal class PerformanceTimeSource(val\n    performance: Performance) : DefaultTimeSource { // AbstractDoubleTimeSource(unit =\n    DurationUnit.MILLISECONDS) {\n    private fun read(): Double = performance.now()\n    override fun\n    markNow(): ValueTimeMark = ValueTimeMark(read())\n    override fun elapsedFrom(timeMark:\n    ValueTimeMark): Duration = (read() - timeMark.reading as Double).milliseconds\n    override fun\n    adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =\n    ValueTimeMark(sumCheckNaN(timeMark.reading as Double +\n    duration.toDouble(DurationUnit.MILLISECONDS)))\n    override fun toString(): String =\n    \\"TimeSource(self.performance.now())"\n\n}\n\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\ninternal object\n    DateNowTimeSource : DefaultTimeSource {\n    private fun read(): Double = kotlin.js.Date.now()\n    override\n    fun markNow(): ValueTimeMark = ValueTimeMark(read())\n    override fun elapsedFrom(timeMark:\n    ValueTimeMark): Duration = (read() - timeMark.reading as Double).milliseconds\n\n        override fun adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =\n    ValueTimeMark(sumCheckNaN(timeMark.reading as Double +\n    duration.toDouble(DurationUnit.MILLISECONDS)))\n    override fun toString(): String =\n    \\"TimeSource(Date.now())"\n\n}\n\nprivate fun sumCheckNaN(value: Double): Double = value.also { if (it.isNaN())\n    throw IllegalArgumentException(\\"Summing infinities of different signs\\") }\n\n/*\n * Copyright 2010-2020\n    JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the\n    Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlinx.dom\n\nimport\n    org.w3c.dom.*\nimport kotlin.contracts.*\n\n * Creates a new element with the specified [name].\n * The\n    element is initialized with the specified [init] function.\n */\n@SinceKotlin(\"1.4\")\npublic fun\n    Document.createElement(name: String, init: Element.() -> Unit): Element {\n    contract { callsInPlace(init,\n        InvocationKind.EXACTLY_ONCE) }\n    return createElement(name).apply(init)\n}\n\n * Appends a newly\n    created element with the specified [name] to this element.\n * The element is initialized with the specified [init]\n    function.\n */\n@SinceKotlin(\"1.4\")\npublic fun Element.appendChild(name: String, init: Element.() -> Unit):\n    Element {\n    contract { callsInPlace(init, InvocationKind.EXACTLY_ONCE) }\n    return\n        ownerDocument!!.createElement(name, init).also { appendChild(it) }\n}\n\n/*\n * Copyright 2010-2018\n    JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the\n    Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlinx.dom\n\nimport\n    org.w3c.dom.*\n\n * Returns true if the element has the given CSS class style in its 'class' attribute

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*^@SinceKotlin("1.4")\nfun Element.hasClass(cssClass: String): Boolean =
className.matches("\\\\(\\^\\.\\*\\|s+)$cssClass($\\|s+\\.\\*\\|\\")\\.toRegex())\n\n/**
 * Adds CSS class to element. Has no effect if all specified classes are already in class attribute of the element\n *
 * @return true if at least one class has been added\n */\n@SinceKotlin("1.4")\nfun Element.addClass(vararg
cssClasses: String): Boolean {\n    val missingClasses = cssClasses.filterNot { hasClass(it) }\n    if
(missingClasses.isNotEmpty()) {\n        val presentClasses = className.trim()\n        className = buildString {\n
            append(presentClasses)\n            if (!presentClasses.isEmpty()) {\n                append(" ")\n            }\n
missingClasses.joinTo(this, " ")\n        }\n        return true\n    }\n    return false\n}\n\n/**\n * Removes all
[cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the element\n *\n *
@return true if at least one class has been removed\n */\n@SinceKotlin("1.4")\nfun Element.removeClass(vararg
cssClasses: String): Boolean {\n    if (cssClasses.any
{ hasClass(it) }) {\n        val toBeRemoved = cssClasses.toSet()\n        className =
className.trim().split("\\\\|s+\\.\\*\\|\\")\\.filter { it !in toBeRemoved }.joinToString(" ")\n        return true\n
    }\n    return false\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage
kotlin.text\n\n/**\n * Converts the string into a regular expression [Regex] with the default options.\n
*\n@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(): Regex = Regex(this)\n\n/**\n * Converts the
string into a regular expression [Regex] with the specified single [option].\n */\n@kotlin.internal.InlineOnly\npublic
inline fun String.toRegex(option: RegexOption): Regex = Regex(this, option)\n\n/**\n * Converts the string into a
regular
expression [Regex] with the specified set of [options].\n */\n@kotlin.internal.InlineOnly\npublic inline fun
String.toRegex(options: Set<RegexOption>): Regex = Regex(this, options)\n\n", /*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlinx.dom\n\nimport
org.w3c.dom.*\n\n/**\n * Gets a value indicating whether this node is a TEXT_NODE or a
CDATA_SECTION_NODE.\n */\n@SinceKotlin("1.4")\npublic val Node.isText: Boolean\n    get() = nodeType
== Node.TEXT_NODE || nodeType == Node.CDATA_SECTION_NODE\n\n/**\n * Gets a value indicating
whether this node is an [Element].\n */\n@SinceKotlin("1.4")\npublic val Node.isElement: Boolean\n    get() =
nodeType == Node.ELEMENT_NODE\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache
2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlinx.dom\n\nimport
org.w3c.dom.*\n\n/**\n * Removes all the children from this node.\n */\n@SinceKotlin("1.4")\npublic fun Node.clear()
{\n    while (hasChildNodes()) {\n        removeChild(firstChild!!)\n    }\n}\n\n/**\n * Creates text node and append it
to the element.\n */\n@SinceKotlin("1.4")\nfun Element.appendChild(text: String):
Element {\n    appendChild(ownerDocument!!.createTextNode(text))\n    return this\n}\n\n", /*\n * Copyright 2010-
2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
org.w3c.dom\n\n@Deprecated("Use UnionMessagePortOrWindowProxy instead.",
ReplaceWith("UnionMessagePortOrWindowProxy"))\ntypealias UnionMessagePortOrWindow =
UnionMessagePortOrWindowProxy\n\n@Deprecated("Use `as` instead.", ReplaceWith("`as`"))\nvar
HTMLLinkElement.as_: \n    get() = `as`\n    set(value) {\n        `as` = value\n    }\n\n@Deprecated("Use `is`
instead.", ReplaceWith("`is`"))\nvar ElementCreationOptions.is_: \n    get() = `is`\n    set(value) {\n        `is` =
value\n    }\n\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n@n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for
details\n\npackage org.khronos.webgl\n\nimport kotlin.js.*\nimport org.w3c.dom.*\nimport

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org.w3c.dom.events.*\n\npublic external interface WebGLContextAttributes {\n    var alpha: Boolean? /* = true */\n        get() = definedExternally\n        set(value) = definedExternally\n    var depth: Boolean? /* = true */\n        get() = definedExternally\n        set(value) = definedExternally\n    var stencil: Boolean? /* = false */\n        get() = definedExternally\n        set(value) = definedExternally\n    var antialias: Boolean? /* = true */\n        get() = definedExternally\n        set(value) = definedExternally\n    var premultipliedAlpha: Boolean? /* = true */\n        get() = definedExternally\n        set(value) = definedExternally\n    var preserveDrawingBuffer: Boolean? /* = false */\n        get() = definedExternally\n        set(value) = definedExternally\n    var preferLowPowerToHighPerformance: Boolean? /* = false */\n        get() = definedExternally\n        set(value) = definedExternally\n    var failIfMajorPerformanceCaveat: Boolean? /* = false */\n        get() = definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun WebGLContextAttributes(alpha: Boolean? = true, depth: Boolean? = true, stencil: Boolean? = false, antialias: Boolean? = true, premultipliedAlpha: Boolean? = true, preserveDrawingBuffer: Boolean? = false, preferLowPowerToHighPerformance: Boolean? = false, failIfMajorPerformanceCaveat: Boolean? = false): WebGLContextAttributes {\n    val o = js("{}")\n    o["alpha"] = alpha\n    o["depth"] = depth\n    o["stencil"] = stencil\n    o["antialias"] = antialias\n    o["premultipliedAlpha"] = premultipliedAlpha\n    o["preserveDrawingBuffer"] = preserveDrawingBuffer\n    o["preferLowPowerToHighPerformance"] = preferLowPowerToHighPerformance\n    o["failIfMajorPerformanceCaveat"] = failIfMajorPerformanceCaveat\n    return o\n}\n\n\npublic external abstract class WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLBuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLBuffer) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLBuffer : WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLFramebuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLFramebuffer) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLFramebuffer : WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLProgram](https://developer.mozilla.org/en/docs/Web/API/WebGLProgram) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLProgram : WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLRenderbuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderbuffer) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLRenderbuffer : WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLShader](https://developer.mozilla.org/en/docs/Web/API/WebGLShader) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLShader : WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLTexture](https://developer.mozilla.org/en/docs/Web/API/WebGLTexture) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLTexture : WebGLObject\n\n\n/**\n * Exposes the JavaScript [WebGLUniformLocation](https://developer.mozilla.org/en/docs/Web/API/WebGLUniformLocation) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLUniformLocation\n\n\n/**\n * Exposes the JavaScript [WebGLActiveInfo](https://developer.mozilla.org/en/docs/Web/API/WebGLActiveInfo) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLActiveInfo {\n    open val size: Int\n    open val type: Int\n    open val name: String\n}\n\n\n/**\n * Exposes the JavaScript [WebGLShaderPrecisionFormat](https://developer.mozilla.org/en/docs/Web/API/WebGLShaderPrecisionFormat) to Kotlin\n\n\n*/\n\npublic external abstract class WebGLShaderPrecisionFormat {\n    open val rangeMin: Int\n    open val rangeMax: Int\n    open val precision: Int\n}\n\n\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external interface WebGLRenderingContextBase {\n    val canvas: HTMLCanvasElement\n    val drawingBufferWidth: Int\n    val drawingBufferHeight: Int\n    fun getContextAttributes(): WebGLContextAttributes?\n    fun isContextLost(): Boolean\n    fun getSupportedExtensions(): Array<String>?\n    fun getExtension(name: String): dynamic\n    fun activeTexture(texture: Int)\n    fun attachShader(program: WebGLProgram?, shader: WebGLShader?)\n        fun bindAttribLocation(program: WebGLProgram?, index: Int, name: String)\n        fun bindBuffer(target: Int, buffer: WebGLBuffer?)\n        fun bindFramebuffer(target: Int, framebuffer: WebGLFramebuffer?)\n        fun bindRenderbuffer(target: Int, renderbuffer: WebGLRenderbuffer?)\n        fun bindTexture(target: Int, texture: WebGLTexture?)\n        fun blendColor(red: Float, green: Float, blue: Float, alpha: Float)\n        fun

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blendEquation(mode: Int)\n fun blendEquationSeparate(modeRGB: Int, modeAlpha: Int)\n fun
blendFunc(sfactor: Int, dfactor: Int)\n fun blendFuncSeparate(srcRGB: Int, dstRGB: Int, srcAlpha: Int, dstAlpha:
Int)\n fun bufferData(target: Int, size: Int, usage: Int)\n fun bufferData(target: Int, data: BufferDataSource?,
usage: Int)\n fun bufferSubData(target: Int, offset: Int, data: BufferDataSource?)\n fun
checkFramebufferStatus(target: Int): Int\n fun clear(mask: Int)\n fun clearColor(red: Float, green: Float, blue:
Float, alpha: Float)\n fun clearDepth(depth:
Float)\n fun clearStencil(s: Int)\n fun colorMask(red: Boolean, green: Boolean, blue: Boolean, alpha:
Boolean)\n fun compileShader(shader: WebGLShader?)\n fun compressedTexImage2D(target: Int, level: Int,
internalformat: Int, width: Int, height: Int, border: Int, data: ArrayBufferView)\n fun
compressedTexSubImage2D(target: Int, level: Int, xoffset: Int, yoffset: Int, width: Int, height: Int, format: Int, data:
ArrayBufferView)\n fun copyTexImage2D(target: Int, level: Int, internalformat: Int, x: Int, y: Int, width: Int,
height: Int, border: Int)\n fun copyTexSubImage2D(target: Int, level: Int, xoffset: Int, yoffset: Int, x: Int, y: Int,
width: Int, height: Int)\n fun createBuffer(): WebGLBuffer?\n fun createFramebuffer(): WebGLFramebuffer?\n
fun createProgram(): WebGLProgram?\n fun createRenderbuffer(): WebGLRenderbuffer?\n fun
createShader(type: Int): WebGLShader?\n fun createTexture(): WebGLTexture?\n fun cullFace(mode: Int)\n
fun
deleteBuffer(buffer: WebGLBuffer?)\n fun deleteFramebuffer(framebuffer: WebGLFramebuffer?)\n fun
deleteProgram(program: WebGLProgram?)\n fun deleteRenderbuffer(renderbuffer: WebGLRenderbuffer?)\n
fun deleteShader(shader: WebGLShader?)\n fun deleteTexture(texture: WebGLTexture?)\n fun depthFunc(func:
Int)\n fun depthMask(flag: Boolean)\n fun depthRange(zNear: Float, zFar: Float)\n fun detachShader(program:
WebGLProgram?, shader: WebGLShader?)\n fun disable(cap: Int)\n fun disableVertexAttribArray(index: Int)\n
fun drawArrays(mode: Int, first: Int, count: Int)\n fun drawElements(mode: Int, count: Int, type: Int, offset: Int)\n
fun enable(cap: Int)\n fun enableVertexAttribArray(index: Int)\n fun finish()\n fun flush()\n fun
framebufferRenderbuffer(target: Int, attachment: Int, renderbuffertarget: Int, renderbuffer: WebGLRenderbuffer?)\n
fun framebufferTexture2D(target: Int, attachment: Int, textarget: Int, texture: WebGLTexture?, level:
Int)\n fun frontFace(mode: Int)\n fun generateMipmap(target: Int)\n fun getActiveAttrib(program:
WebGLProgram?, index: Int): WebGLActiveInfo?\n fun getActiveUniform(program: WebGLProgram?, index:
Int): WebGLActiveInfo?\n fun getAttachedShaders(program: WebGLProgram?): Array<WebGLShader>?\n fun
getAttribLocation(program: WebGLProgram?, name: String): Int\n fun getBufferParameter(target: Int, pname:
Int): Any?\n fun getParameter(pname: Int): Any?\n fun getError(): Int\n fun
getFramebufferAttachmentParameter(target: Int, attachment: Int, pname: Int): Any?\n fun
getProgramParameter(program: WebGLProgram?, pname: Int): Any?\n fun getProgramInfoLog(program:
WebGLProgram?): String?\n fun getRenderbufferParameter(target: Int, pname: Int): Any?\n fun
getShaderParameter(shader: WebGLShader?, pname: Int): Any?\n fun getShaderPrecisionFormat(shader: Int,
precision: Int): WebGLShaderPrecisionFormat?\n fun getShaderInfoLog(shader: WebGLShader?):
String?\n fun getShaderSource(shader: WebGLShader?): String?\n fun getTexParameter(target: Int, pname: Int):
Any?\n fun getUniform(program: WebGLProgram?, location: WebGLUniformLocation?): Any?\n fun
getUniformLocation(program: WebGLProgram?, name: String): WebGLUniformLocation?\n fun
getVertexAttrib(index: Int, pname: Int): Any?\n fun getVertexAttribOffset(index: Int, pname: Int): Int\n fun
hint(target: Int, mode: Int)\n fun isBuffer(buffer: WebGLBuffer?): Boolean\n fun isEnabled(cap: Int): Boolean\n
fun isFramebuffer(framebuffer: WebGLFramebuffer?): Boolean\n fun isProgram(program: WebGLProgram?):
Boolean\n fun isRenderbuffer(renderbuffer: WebGLRenderbuffer?): Boolean\n fun isShader(shader:
WebGLShader?): Boolean\n fun isTexture(texture: WebGLTexture?): Boolean\n fun lineWidth(width: Float)\n
fun linkProgram(program: WebGLProgram?)\n fun pixelStorei(pname: Int, param: Int)\n fun
polygonOffset(factor: Float, units: Float)\n
fun readPixels(x: Int, y: Int, width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)\n fun
renderbufferStorage(target: Int, internalformat: Int, width: Int, height: Int)\n fun sampleCoverage(value: Float,
invert: Boolean)\n fun scissor(x: Int, y: Int, width: Int, height: Int)\n fun shaderSource(shader: WebGLShader?,

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source: String)\n fun stencilFunc(func: Int, ref: Int, mask: Int)\n fun stencilFuncSeparate(face: Int, func: Int, ref:
Int, mask: Int)\n fun stencilMask(mask: Int)\n fun stencilMaskSeparate(face: Int, mask: Int)\n fun
stencilOp(fail: Int, zfail: Int, zpass: Int)\n fun stencilOpSeparate(face: Int, fail: Int, zfail: Int, zpass: Int)\n fun
texImage2D(target: Int, level: Int, internalformat: Int, width: Int, height: Int, border: Int, format: Int, type: Int, pixels:
ArrayBufferView?)\n fun texImage2D(target: Int, level: Int, internalformat: Int, format: Int, type: Int, source:
TexImageSource?)\n fun texParameterf(target:
Int, pname: Int, param: Float)\n fun texParameteri(target: Int, pname: Int, param: Int)\n fun
texSubImage2D(target: Int, level: Int, xoffset: Int, yoffset: Int, width: Int, height: Int, format: Int, type: Int, pixels:
ArrayBufferView?)\n fun texSubImage2D(target: Int, level: Int, xoffset: Int, yoffset: Int, format: Int, type: Int,
source: TexImageSource?)\n fun uniform1f(location: WebGLUniformLocation?, x: Float)\n fun
uniform1fv(location: WebGLUniformLocation?, v: Float32Array)\n fun uniform1fv(location:
WebGLUniformLocation?, v: Array<Float>)\n fun uniform1i(location: WebGLUniformLocation?, x: Int)\n fun
uniform1iv(location: WebGLUniformLocation?, v: Int32Array)\n fun uniform1iv(location:
WebGLUniformLocation?, v: Array<Int>)\n fun uniform2f(location: WebGLUniformLocation?, x: Float, y:
Float)\n fun uniform2fv(location: WebGLUniformLocation?, v: Float32Array)\n fun uniform2fv(location:
WebGLUniformLocation?, v: Array<Float>)\n fun uniform2i(location:
WebGLUniformLocation?, x: Int, y: Int)\n fun uniform2iv(location: WebGLUniformLocation?, v: Int32Array)\n
fun uniform2iv(location: WebGLUniformLocation?, v: Array<Int>)\n fun uniform3f(location:
WebGLUniformLocation?, x: Float, y: Float, z: Float)\n fun uniform3fv(location: WebGLUniformLocation?, v:
Float32Array)\n fun uniform3fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun
uniform3i(location: WebGLUniformLocation?, x: Int, y: Int, z: Int)\n fun uniform3iv(location:
WebGLUniformLocation?, v: Int32Array)\n fun uniform3iv(location: WebGLUniformLocation?, v: Array<Int>)\n
fun uniform4f(location: WebGLUniformLocation?, x: Float, y: Float, z: Float, w: Float)\n fun
uniform4fv(location: WebGLUniformLocation?, v: Float32Array)\n fun uniform4fv(location:
WebGLUniformLocation?, v: Array<Float>)\n fun uniform4i(location: WebGLUniformLocation?, x: Int, y: Int, z:
Int, w: Int)\n fun uniform4iv(location: WebGLUniformLocation?, v: Int32Array)\n
fun uniform4iv(location: WebGLUniformLocation?, v: Array<Int>)\n fun uniformMatrix2fv(location:
WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun uniformMatrix2fv(location:
WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun uniformMatrix3fv(location:
WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun uniformMatrix3fv(location:
WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun uniformMatrix4fv(location:
WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun uniformMatrix4fv(location:
WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun useProgram(program:
WebGLProgram?)\n fun validateProgram(program: WebGLProgram?)\n fun vertexAttrib1f(index: Int, x:
Float)\n fun vertexAttrib1fv(index: Int, values: dynamic)\n fun vertexAttrib2f(index: Int, x: Float, y: Float)\n
fun vertexAttrib2fv(index: Int, values: dynamic)\n fun vertexAttrib3f(index:
Int, x: Float, y: Float, z: Float)\n fun vertexAttrib3fv(index: Int, values: dynamic)\n fun vertexAttrib4f(index:
Int, x: Float, y: Float, z: Float, w: Float)\n fun vertexAttrib4fv(index: Int, values: dynamic)\n fun
vertexAttribPointer(index: Int, size: Int, type: Int, normalized: Boolean, stride: Int, offset: Int)\n fun viewport(x:
Int, y: Int, width: Int, height: Int)\n\n companion object {\n val DEPTH_BUFFER_BIT: Int\n val
STENCIL_BUFFER_BIT: Int\n val COLOR_BUFFER_BIT: Int\n val POINTS: Int\n val LINES: Int\n
val LINE_LOOP: Int\n val LINE_STRIP: Int\n val TRIANGLES: Int\n val TRIANGLE_STRIP:
Int\n val TRIANGLE_FAN: Int\n val ZERO: Int\n val ONE: Int\n val SRC_COLOR: Int\n val
ONE_MINUS_SRC_COLOR: Int\n val SRC_ALPHA: Int\n val ONE_MINUS_SRC_ALPHA: Int\n
val DST_ALPHA: Int\n val ONE_MINUS_DST_ALPHA: Int\n val DST_COLOR: Int\n
val ONE_MINUS_DST_COLOR: Int\n val SRC_ALPHA_SATURATE: Int\n val FUNC_ADD: Int\n
val BLEND_EQUATION: Int\n val BLEND_EQUATION_RGB: Int\n val
BLEND_EQUATION_ALPHA: Int\n val FUNC_SUBTRACT: Int\n val FUNC_REVERSE_SUBTRACT:

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Int\n val BLEND_DST_RGB: Int\n val BLEND_SRC_RGB: Int\n val BLEND_DST_ALPHA: Int\n
 val BLEND_SRC_ALPHA: Int\n val CONSTANT_COLOR: Int\n val
 ONE_MINUS_CONSTANT_COLOR: Int\n val CONSTANT_ALPHA: Int\n val
 ONE_MINUS_CONSTANT_ALPHA: Int\n val BLEND_COLOR: Int\n val ARRAY_BUFFER: Int\n
 val ELEMENT_ARRAY_BUFFER: Int\n val ARRAY_BUFFER_BINDING: Int\n val
 ELEMENT_ARRAY_BUFFER_BINDING: Int\n val STREAM_DRAW: Int\n val STATIC_DRAW: Int\n
 val DYNAMIC_DRAW: Int\n val BUFFER_SIZE: Int\n val BUFFER_USAGE: Int\n val
 CURRENT_VERTEX_ATTRIB: Int\n val FRONT: Int\n val BACK: Int\n val
 FRONT_AND_BACK: Int\n val CULL_FACE: Int\n val BLEND: Int\n val DITHER: Int\n val
 STENCIL_TEST: Int\n val DEPTH_TEST: Int\n val SCISSOR_TEST: Int\n val
 POLYGON_OFFSET_FILL: Int\n val SAMPLE_ALPHA_TO_COVERAGE: Int\n val
 SAMPLE_COVERAGE: Int\n val NO_ERROR: Int\n val INVALID_ENUM: Int\n val
 INVALID_VALUE: Int\n val INVALID_OPERATION: Int\n val OUT_OF_MEMORY: Int\n val CW:
 Int\n val CCW: Int\n val LINE_WIDTH: Int\n val ALIASED_POINT_SIZE_RANGE: Int\n val
 ALIASED_LINE_WIDTH_RANGE: Int\n val CULL_FACE_MODE: Int\n val FRONT_FACE: Int\n
 val DEPTH_RANGE: Int\n val DEPTH_WRITEMASK: Int\n val DEPTH_CLEAR_VALUE: Int\n val
 DEPTH_FUNC: Int\n val STENCIL_CLEAR_VALUE: Int\n val STENCIL_FUNC: Int\n val
 STENCIL_FAIL: Int\n val STENCIL_PASS_DEPTH_FAIL: Int\n val STENCIL_PASS_DEPTH_PASS:
 Int\n
 val STENCIL_REF: Int\n val STENCIL_VALUE_MASK: Int\n val STENCIL_WRITEMASK: Int\n
 val STENCIL_BACK_FUNC: Int\n val STENCIL_BACK_FAIL: Int\n val
 STENCIL_BACK_PASS_DEPTH_FAIL: Int\n val STENCIL_BACK_PASS_DEPTH_PASS: Int\n val
 STENCIL_BACK_REF: Int\n val STENCIL_BACK_VALUE_MASK: Int\n val
 STENCIL_BACK_WRITEMASK: Int\n val VIEWPORT: Int\n val SCISSOR_BOX: Int\n val
 COLOR_CLEAR_VALUE: Int\n val COLOR_WRITEMASK: Int\n val UNPACK_ALIGNMENT: Int\n
 val PACK_ALIGNMENT: Int\n val MAX_TEXTURE_SIZE: Int\n val MAX_VIEWPORT_DIMS: Int\n
 val SUBPIXEL_BITS: Int\n val RED_BITS: Int\n val GREEN_BITS: Int\n val BLUE_BITS: Int\n
 val ALPHA_BITS: Int\n val DEPTH_BITS: Int\n val STENCIL_BITS: Int\n val
 POLYGON_OFFSET_UNITS: Int\n val POLYGON_OFFSET_FACTOR: Int\n val
 TEXTURE_BINDING_2D: Int\n val SAMPLE_BUFFERS: Int\n
 val SAMPLES: Int\n val SAMPLE_COVERAGE_VALUE: Int\n val
 SAMPLE_COVERAGE_INVERT: Int\n val COMPRESSED_TEXTURE_FORMATS: Int\n val
 DONT_CARE: Int\n val FASTEST: Int\n val NICEST: Int\n val GENERATE_MIPMAP_HINT: Int\n
 val BYTE: Int\n val UNSIGNED_BYTE: Int\n val SHORT: Int\n val UNSIGNED_SHORT: Int\n
 val INT: Int\n val UNSIGNED_INT: Int\n val FLOAT: Int\n val DEPTH_COMPONENT: Int\n
 val ALPHA: Int\n val RGB: Int\n val RGBA: Int\n val LUMINANCE: Int\n val
 LUMINANCE_ALPHA: Int\n val UNSIGNED_SHORT_4_4_4_4: Int\n val
 UNSIGNED_SHORT_5_5_5_1: Int\n val UNSIGNED_SHORT_5_6_5: Int\n val
 FRAGMENT_SHADER: Int\n val VERTEX_SHADER: Int\n val MAX_VERTEX_ATTRIBS: Int\n
 val MAX_VERTEX_UNIFORM_VECTORS: Int\n val MAX_VARYING_VECTORS: Int\n val
 MAX_COMBINED_TEXTURE_IMAGE_UNITS: Int\n val MAX_VERTEX_TEXTURE_IMAGE_UNITS:
 Int\n val MAX_TEXTURE_IMAGE_UNITS: Int\n val MAX_FRAGMENT_UNIFORM_VECTORS:
 Int\n val SHADER_TYPE: Int\n val DELETE_STATUS: Int\n val LINK_STATUS: Int\n val
 VALIDATE_STATUS: Int\n val ATTACHED_SHADERS: Int\n val ACTIVE_UNIFORMS: Int\n val
 ACTIVE_ATTRIBUTES: Int\n val SHADING_LANGUAGE_VERSION: Int\n val
 CURRENT_PROGRAM: Int\n val NEVER: Int\n val LESS: Int\n val EQUAL: Int\n val
 LEQUAL: Int\n val GREATER: Int\n val NOTEQUAL: Int\n val GEQUAL: Int\n val ALWAYS:
 Int\n val KEEP: Int\n val REPLACE: Int\n val INCR: Int\n val DECR: Int\n val INVERT:

Int\n val INCR_WRAP: Int\n val DECR_WRAP: Int\n val VENDOR: Int\n val RENDERER: Int\n
 val VERSION: Int\n val NEAREST: Int\n val LINEAR: Int\n val
 NEAREST_MIPMAP_NEAREST: Int\n val LINEAR_MIPMAP_NEAREST:
 Int\n val NEAREST_MIPMAP_LINEAR: Int\n val LINEAR_MIPMAP_LINEAR: Int\n val
 TEXTURE_MAG_FILTER: Int\n val TEXTURE_MIN_FILTER: Int\n val TEXTURE_WRAP_S: Int\n
 val TEXTURE_WRAP_T: Int\n val TEXTURE_2D: Int\n val TEXTURE: Int\n val
 TEXTURE_CUBE_MAP: Int\n val TEXTURE_BINDING_CUBE_MAP: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_X: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_X: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Y: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Y: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Z: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Z: Int\n val
 MAX_CUBE_MAP_TEXTURE_SIZE: Int\n val TEXTURE0: Int\n val TEXTURE1: Int\n val
 TEXTURE2: Int\n val TEXTURE3: Int\n val TEXTURE4: Int\n val TEXTURE5: Int\n val
 TEXTURE6: Int\n val TEXTURE7: Int\n val TEXTURE8: Int\n val TEXTURE9: Int\n val
 TEXTURE10: Int\n val TEXTURE11:
 Int\n val TEXTURE12: Int\n val TEXTURE13: Int\n val TEXTURE14: Int\n val TEXTURE15:
 Int\n val TEXTURE16: Int\n val TEXTURE17: Int\n val TEXTURE18: Int\n val TEXTURE19:
 Int\n val TEXTURE20: Int\n val TEXTURE21: Int\n val TEXTURE22: Int\n val TEXTURE23:
 Int\n val TEXTURE24: Int\n val TEXTURE25: Int\n val TEXTURE26: Int\n val TEXTURE27:
 Int\n val TEXTURE28: Int\n val TEXTURE29: Int\n val TEXTURE30: Int\n val TEXTURE31:
 Int\n val ACTIVE_TEXTURE: Int\n val REPEAT: Int\n val CLAMP_TO_EDGE: Int\n val
 MIRRORED_REPEAT: Int\n val FLOAT_VEC2: Int\n val FLOAT_VEC3: Int\n val FLOAT_VEC4:
 Int\n val INT_VEC2: Int\n val INT_VEC3: Int\n val INT_VEC4: Int\n val BOOL: Int\n val
 BOOL_VEC2: Int\n val BOOL_VEC3: Int\n val BOOL_VEC4: Int\n val FLOAT_MAT2: Int\n
 val FLOAT_MAT3: Int\n val FLOAT_MAT4: Int\n val SAMPLER_2D: Int\n val
 SAMPLER_CUBE: Int\n val VERTEX_ATTRIB_ARRAY_ENABLED: Int\n val
 VERTEX_ATTRIB_ARRAY_SIZE: Int\n val VERTEX_ATTRIB_ARRAY_STRIDE: Int\n val
 VERTEX_ATTRIB_ARRAY_TYPE: Int\n val VERTEX_ATTRIB_ARRAY_NORMALIZED: Int\n val
 VERTEX_ATTRIB_ARRAY_POINTER: Int\n val VERTEX_ATTRIB_ARRAY_BUFFER_BINDING: Int\n
 val IMPLEMENTATION_COLOR_READ_TYPE: Int\n val
 IMPLEMENTATION_COLOR_READ_FORMAT: Int\n val COMPILE_STATUS: Int\n val
 LOW_FLOAT: Int\n val MEDIUM_FLOAT: Int\n val HIGH_FLOAT: Int\n val LOW_INT: Int\n
 val MEDIUM_INT: Int\n val HIGH_INT: Int\n val FRAMEBUFFER: Int\n val RENDERBUFFER:
 Int\n val RGBA4: Int\n val RGB5_A1: Int\n val RGB565: Int\n val DEPTH_COMPONENT16:
 Int\n val STENCIL_INDEX: Int\n val STENCIL_INDEX8: Int\n val DEPTH_STENCIL:
 Int\n val RENDERBUFFER_WIDTH: Int\n val RENDERBUFFER_HEIGHT: Int\n val
 RENDERBUFFER_INTERNAL_FORMAT: Int\n val RENDERBUFFER_RED_SIZE: Int\n val
 RENDERBUFFER_GREEN_SIZE: Int\n val RENDERBUFFER_BLUE_SIZE: Int\n val
 RENDERBUFFER_ALPHA_SIZE: Int\n val RENDERBUFFER_DEPTH_SIZE: Int\n val
 RENDERBUFFER_STENCIL_SIZE: Int\n val FRAMEBUFFER_ATTACHMENT_OBJECT_TYPE: Int\n
 val FRAMEBUFFER_ATTACHMENT_OBJECT_NAME: Int\n val
 FRAMEBUFFER_ATTACHMENT_TEXTURE_LEVEL: Int\n val
 FRAMEBUFFER_ATTACHMENT_TEXTURE_CUBE_MAP_FACE: Int\n val COLOR_ATTACHMENT0:
 Int\n val DEPTH_ATTACHMENT: Int\n val STENCIL_ATTACHMENT: Int\n val
 DEPTH_STENCIL_ATTACHMENT: Int\n val NONE: Int\n val FRAMEBUFFER_COMPLETE: Int\n
 val FRAMEBUFFER_INCOMPLETE_ATTACHMENT: Int\n val
 FRAMEBUFFER_INCOMPLETE_MISSING_ATTACHMENT: Int\n val
 FRAMEBUFFER_INCOMPLETE_DIMENSIONS: Int\n

```

val FRAMEBUFFER_UNSUPPORTED: Int\n    val FRAMEBUFFER_BINDING: Int\n    val
RENDERBUFFER_BINDING: Int\n    val MAX_RENDERBUFFER_SIZE: Int\n    val
INVALID_FRAMEBUFFER_OPERATION: Int\n    val UNPACK_FLIP_Y_WEBGL: Int\n    val
UNPACK_PREMULTIPLY_ALPHA_WEBGL: Int\n    val CONTEXT_LOST_WEBGL: Int\n    val
UNPACK_COLORSPACE_CONVERSION_WEBGL: Int\n    val BROWSER_DEFAULT_WEBGL: Int\n
})\n\n/*\n * Exposes the JavaScript
[WebGLRenderingContext](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderingContext) to Kotlin\n
*\npublic external abstract class WebGLRenderingContext : WebGLRenderingContextBase, RenderingContext {\n
companion object {\n    val DEPTH_BUFFER_BIT: Int\n    val STENCIL_BUFFER_BIT: Int\n    val
COLOR_BUFFER_BIT: Int\n    val POINTS: Int\n    val LINES: Int\n    val LINE_LOOP: Int\n    val
LINE_STRIP: Int\n    val TRIANGLES: Int\n    val TRIANGLE_STRIP: Int\n    val TRIANGLE_FAN:
Int\n
    val ZERO: Int\n    val ONE: Int\n    val SRC_COLOR: Int\n    val ONE_MINUS_SRC_COLOR: Int\n
    val SRC_ALPHA: Int\n    val ONE_MINUS_SRC_ALPHA: Int\n    val DST_ALPHA: Int\n    val
ONE_MINUS_DST_ALPHA: Int\n    val DST_COLOR: Int\n    val ONE_MINUS_DST_COLOR: Int\n
    val SRC_ALPHA_SATURATE: Int\n    val FUNC_ADD: Int\n    val BLEND_EQUATION: Int\n    val
BLEND_EQUATION_RGB: Int\n    val BLEND_EQUATION_ALPHA: Int\n    val FUNC_SUBTRACT:
Int\n    val FUNC_REVERSE_SUBTRACT: Int\n    val BLEND_DST_RGB: Int\n    val
BLEND_SRC_RGB: Int\n    val BLEND_DST_ALPHA: Int\n    val BLEND_SRC_ALPHA: Int\n    val
CONSTANT_COLOR: Int\n    val ONE_MINUS_CONSTANT_COLOR: Int\n    val CONSTANT_ALPHA:
Int\n    val ONE_MINUS_CONSTANT_ALPHA: Int\n    val BLEND_COLOR: Int\n    val
ARRAY_BUFFER: Int\n    val ELEMENT_ARRAY_BUFFER: Int\n    val ARRAY_BUFFER_BINDING:
Int\n    val ELEMENT_ARRAY_BUFFER_BINDING:
Int\n    val STREAM_DRAW: Int\n    val STATIC_DRAW: Int\n    val DYNAMIC_DRAW: Int\n    val
BUFFER_SIZE: Int\n    val BUFFER_USAGE: Int\n    val CURRENT_VERTEX_ATTRIB: Int\n    val
FRONT: Int\n    val BACK: Int\n    val FRONT_AND_BACK: Int\n    val CULL_FACE: Int\n    val
BLEND: Int\n    val DITHER: Int\n    val STENCIL_TEST: Int\n    val DEPTH_TEST: Int\n    val
SCISSOR_TEST: Int\n    val POLYGON_OFFSET_FILL: Int\n    val SAMPLE_ALPHA_TO_COVERAGE:
Int\n    val SAMPLE_COVERAGE: Int\n    val NO_ERROR: Int\n    val INVALID_ENUM: Int\n    val
INVALID_VALUE: Int\n    val INVALID_OPERATION: Int\n    val OUT_OF_MEMORY: Int\n    val CW:
Int\n    val CCW: Int\n    val LINE_WIDTH: Int\n    val ALIASED_POINT_SIZE_RANGE: Int\n    val
ALIASED_LINE_WIDTH_RANGE: Int\n    val CULL_FACE_MODE: Int\n    val FRONT_FACE: Int\n
val DEPTH_RANGE: Int\n    val DEPTH_WRITEMASK:
Int\n    val DEPTH_CLEAR_VALUE: Int\n    val DEPTH_FUNC: Int\n    val STENCIL_CLEAR_VALUE:
Int\n    val STENCIL_FUNC: Int\n    val STENCIL_FAIL: Int\n    val STENCIL_PASS_DEPTH_FAIL:
Int\n    val STENCIL_PASS_DEPTH_PASS: Int\n    val STENCIL_REF: Int\n    val
STENCIL_VALUE_MASK: Int\n    val STENCIL_WRITEMASK: Int\n    val STENCIL_BACK_FUNC:
Int\n    val STENCIL_BACK_FAIL: Int\n    val STENCIL_BACK_PASS_DEPTH_FAIL: Int\n    val
STENCIL_BACK_PASS_DEPTH_PASS: Int\n    val STENCIL_BACK_REF: Int\n    val
STENCIL_BACK_VALUE_MASK: Int\n    val STENCIL_BACK_WRITEMASK: Int\n    val VIEWPORT:
Int\n    val SCISSOR_BOX: Int\n    val COLOR_CLEAR_VALUE: Int\n    val COLOR_WRITEMASK:
Int\n    val UNPACK_ALIGNMENT: Int\n    val PACK_ALIGNMENT: Int\n    val
MAX_TEXTURE_SIZE: Int\n    val MAX_VIEWPORT_DIMS: Int\n    val SUBPIXEL_BITS: Int\n    val
RED_BITS: Int\n    val GREEN_BITS:
Int\n    val BLUE_BITS: Int\n    val ALPHA_BITS: Int\n    val DEPTH_BITS: Int\n    val
STENCIL_BITS: Int\n    val POLYGON_OFFSET_UNITS: Int\n    val POLYGON_OFFSET_FACTOR: Int\n
    val TEXTURE_BINDING_2D: Int\n    val SAMPLE_BUFFERS: Int\n    val SAMPLES: Int\n    val
SAMPLE_COVERAGE_VALUE: Int\n    val SAMPLE_COVERAGE_INVERT: Int\n    val

```


COMPRESSED_TEXTURE_FORMATS: Int\n val DONT_CARE: Int\n val FASTEST: Int\n val
 NICEST: Int\n val GENERATE_MIPMAP_HINT: Int\n val BYTE: Int\n val UNSIGNED_BYTE:
 Int\n val SHORT: Int\n val UNSIGNED_SHORT: Int\n val INT: Int\n val UNSIGNED_INT: Int\n
 val FLOAT: Int\n val DEPTH_COMPONENT: Int\n val ALPHA: Int\n val RGB: Int\n val
 RGBA: Int\n val LUMINANCE: Int\n val LUMINANCE_ALPHA: Int\n val
 UNSIGNED_SHORT_4_4_4_4: Int\n val UNSIGNED_SHORT_5_5_5_1: Int\n val
 UNSIGNED_SHORT_5_6_5:
 Int\n val FRAGMENT_SHADER: Int\n val VERTEX_SHADER: Int\n val
 MAX_VERTEX_ATTRIBS: Int\n val MAX_VERTEX_UNIFORM_VECTORS: Int\n val
 MAX_VARYING_VECTORS: Int\n val MAX_COMBINED_TEXTURE_IMAGE_UNITS: Int\n val
 MAX_VERTEX_TEXTURE_IMAGE_UNITS: Int\n val MAX_TEXTURE_IMAGE_UNITS: Int\n val
 MAX_FRAGMENT_UNIFORM_VECTORS: Int\n val SHADER_TYPE: Int\n val DELETE_STATUS:
 Int\n val LINK_STATUS: Int\n val VALIDATE_STATUS: Int\n val ATTACHED_SHADERS: Int\n
 val ACTIVE_UNIFORMS: Int\n val ACTIVE_ATTRIBUTES: Int\n val
 SHADING_LANGUAGE_VERSION: Int\n val CURRENT_PROGRAM: Int\n val NEVER: Int\n val
 LESS: Int\n val EQUAL: Int\n val LEQUAL: Int\n val GREATER: Int\n val NOTEQUAL: Int\n
 val GEQUAL: Int\n val ALWAYS: Int\n val KEEP: Int\n val REPLACE: Int\n val INCR: Int\n
 val DECR: Int\n
 val INVERT: Int\n val INCR_WRAP: Int\n val DECR_WRAP: Int\n val VENDOR: Int\n val
 RENDERER: Int\n val VERSION: Int\n val NEAREST: Int\n val LINEAR: Int\n val
 NEAREST_MIPMAP_NEAREST: Int\n val LINEAR_MIPMAP_NEAREST: Int\n val
 NEAREST_MIPMAP_LINEAR: Int\n val LINEAR_MIPMAP_LINEAR: Int\n val
 TEXTURE_MAG_FILTER: Int\n val TEXTURE_MIN_FILTER: Int\n val TEXTURE_WRAP_S: Int\n
 val TEXTURE_WRAP_T: Int\n val TEXTURE_2D: Int\n val TEXTURE: Int\n val
 TEXTURE_CUBE_MAP: Int\n val TEXTURE_BINDING_CUBE_MAP: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_X: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_X: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Y: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Y: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Z: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Z: Int\n val
 MAX_CUBE_MAP_TEXTURE_SIZE: Int\n val TEXTURE0: Int\n val
 TEXTURE1: Int\n val TEXTURE2: Int\n val TEXTURE3: Int\n val TEXTURE4: Int\n val
 TEXTURE5: Int\n val TEXTURE6: Int\n val TEXTURE7: Int\n val TEXTURE8: Int\n val
 TEXTURE9: Int\n val TEXTURE10: Int\n val TEXTURE11: Int\n val TEXTURE12: Int\n val
 TEXTURE13: Int\n val TEXTURE14: Int\n val TEXTURE15: Int\n val TEXTURE16: Int\n val
 TEXTURE17: Int\n val TEXTURE18: Int\n val TEXTURE19: Int\n val TEXTURE20: Int\n val
 TEXTURE21: Int\n val TEXTURE22: Int\n val TEXTURE23: Int\n val TEXTURE24: Int\n val
 TEXTURE25: Int\n val TEXTURE26: Int\n val TEXTURE27: Int\n val TEXTURE28: Int\n val
 TEXTURE29: Int\n val TEXTURE30: Int\n val TEXTURE31: Int\n val ACTIVE_TEXTURE: Int\n
 val REPEAT: Int\n val CLAMP_TO_EDGE: Int\n val MIRRORED_REPEAT: Int\n val
 FLOAT_VEC2: Int\n
 val FLOAT_VEC3: Int\n val FLOAT_VEC4: Int\n val INT_VEC2: Int\n val INT_VEC3: Int\n
 val INT_VEC4: Int\n val BOOL: Int\n val BOOL_VEC2: Int\n val BOOL_VEC3: Int\n val
 BOOL_VEC4: Int\n val FLOAT_MAT2: Int\n val FLOAT_MAT3: Int\n val FLOAT_MAT4: Int\n
 val SAMPLER_2D: Int\n val SAMPLER_CUBE: Int\n val VERTEX_ATTRIB_ARRAY_ENABLED:
 Int\n val VERTEX_ATTRIB_ARRAY_SIZE: Int\n val VERTEX_ATTRIB_ARRAY_STRIDE: Int\n
 val VERTEX_ATTRIB_ARRAY_TYPE: Int\n val VERTEX_ATTRIB_ARRAY_NORMALIZED: Int\n
 val VERTEX_ATTRIB_ARRAY_POINTER: Int\n val VERTEX_ATTRIB_ARRAY_BUFFER_BINDING:
 Int\n val IMPLEMENTATION_COLOR_READ_TYPE: Int\n val
 IMPLEMENTATION_COLOR_READ_FORMAT: Int\n val COMPILE_STATUS: Int\n val


```

Int = definedExternally)\n fun set(array: Array<Byte>, offset: Int = definedExternally)\n fun subarray(start: Int,
end: Int): Int8Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int8Array.set(index: Int,
value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint8Array](https://developer.mozilla.org/en/docs/Web/API/Uint8Array) to Kotlin\n */\npublic external open class
Uint8Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Uint8Array)\n
constructor(array: Array<Byte>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n open val length: Int\n override
val buffer: ArrayBuffer\n override val byteOffset: Int\n override val byteLength: Int\n fun set(array:
Uint8Array, offset: Int = definedExternally)\n fun set(array: Array<Byte>, offset: Int = definedExternally)\n fun
subarray(start: Int, end: Int): Uint8Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint8Array.set(index: Int,
value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint8ClampedArray](https://developer.mozilla.org/en/docs/Web/API/Uint8ClampedArray) to Kotlin\n */\npublic
external open class Uint8ClampedArray : ArrayBufferView {\n constructor(length: Int)\n constructor(array:
Uint8ClampedArray)\n constructor(array:
Array<Byte>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int =
definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset: Int\n
override val byteLength: Int\n fun set(array: Uint8ClampedArray, offset: Int = definedExternally)\n fun
set(array: Array<Byte>, offset: Int = definedExternally)\n fun subarray(start: Int, end: Int):
Uint8ClampedArray\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
Uint8ClampedArray.get(index: Int): Byte = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
Uint8ClampedArray.set(index: Int, value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Int16Array](https://developer.mozilla.org/en/docs/Web/API/Int16Array)
to Kotlin\n */\npublic external open class Int16Array : ArrayBufferView {\n constructor(length: Int)\n
constructor(array: Int16Array)\n constructor(array: Array<Short>)\n constructor(buffer: ArrayBuffer,
byteOffset: Int = definedExternally, length: Int = definedExternally)\n open val length: Int\n override val buffer:
ArrayBuffer\n override val byteOffset: Int\n override val byteLength: Int\n fun set(array: Int16Array, offset:
Int = definedExternally)\n fun set(array: Array<Short>, offset: Int = definedExternally)\n fun subarray(start: Int,
end: Int): Int16Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int16Array.get(index: Int):
Short = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int16Array.set(index: Int,
value:
Short) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint16Array](https://developer.mozilla.org/en/docs/Web/API/Uint16Array) to Kotlin\n */\npublic external open
class Uint16Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Uint16Array)\n
constructor(array: Array<Short>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:

```

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Int = definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset:
Int\n override val byteLength: Int\n fun set(array: Uint16Array, offset: Int = definedExternally)\n fun set(array:
Array<Short>, offset: Int = definedExternally)\n fun subarray(start: Int, end: Int): Uint16Array\n\n companion
object {\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint16Array.get(index: Int):
Short = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint16Array.set(index: Int,
value: Short) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Int32Array](https://developer.mozilla.org/en/docs/Web/API/Int32Array) to Kotlin\n */\npublic external open class
Int32Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Int32Array)\n
constructor(array: Array<Int>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int
= definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset: Int\n
override val byteLength: Int\n fun set(array: Int32Array, offset: Int = definedExternally)\n fun set(array:
Array<Int>, offset: Int = definedExternally)\n fun subarray(start: Int, end: Int): Int32Array\n\n companion object
{\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int32Array.get(index: Int):
Int = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int32Array.set(index: Int,
value: Int) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint32Array](https://developer.mozilla.org/en/docs/Web/API/Uint32Array) to Kotlin\n */\npublic external open
class Uint32Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Uint32Array)\n
constructor(array: Array<Int>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int
= definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset: Int\n
override val byteLength: Int\n fun set(array: Uint32Array, offset: Int = definedExternally)\n fun set(array:
Array<Int>, offset: Int = definedExternally)\n fun subarray(start:
Int, end: Int): Uint32Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint32Array.get(index: Int):
Int = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint32Array.set(index: Int,
value: Int) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Float32Array](https://developer.mozilla.org/en/docs/Web/API/Float32Array) to Kotlin\n */\npublic external open
class Float32Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Float32Array)\n
constructor(array: Array<Float>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset:
Int\n override val byteLength: Int\n fun
set(array: Float32Array, offset: Int = definedExternally)\n fun set(array: Array<Float>, offset: Int =
definedExternally)\n fun subarray(start: Int, end: Int): Float32Array\n\n companion object {\n val
BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float32Array.get(index: Int):
Float = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float32Array.set(index: Int,
value: Float) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Float64Array](https://developer.mozilla.org/en/docs/Web/API/Float64Array) to Kotlin\n */\npublic external open
class Float64Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Float64Array)\n
constructor(array: Array<Double>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n

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open val length: Int\n  override val buffer: ArrayBuffer\n  override val byteOffset: Int\n  override val
byteLength: Int\n  fun set(array: Float64Array, offset: Int = definedExternally)\n  fun set(array: Array<Double>,
offset: Int = definedExternally)\n  fun subarray(start: Int, end: Int): Float64Array\n\n  companion object {\n
val BYTES_PER_ELEMENT: Int\n  }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float64Array.get(index: Int):
Double = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float64Array.set(index: Int,
value: Double) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[DataView](https://developer.mozilla.org/en/docs/Web/API/DataView) to Kotlin\n */\npublic external open class
DataView(buffer: ArrayBuffer, byteOffset: Int = definedExternally, byteLength:
Int = definedExternally) : ArrayBufferView {\n  override val buffer: ArrayBuffer\n  override val byteOffset: Int\n
override val byteLength: Int\n  fun getInt8(byteOffset: Int): Byte\n  fun getUint8(byteOffset: Int): Byte\n  fun
getInt16(byteOffset: Int, littleEndian: Boolean = definedExternally): Short\n  fun getUint16(byteOffset: Int,
littleEndian: Boolean = definedExternally): Short\n  fun getInt32(byteOffset: Int, littleEndian: Boolean =
definedExternally): Int\n  fun getUint32(byteOffset: Int, littleEndian: Boolean = definedExternally): Int\n  fun
getFloat32(byteOffset: Int, littleEndian: Boolean = definedExternally): Float\n  fun getFloat64(byteOffset: Int,
littleEndian: Boolean = definedExternally): Double\n  fun setInt8(byteOffset: Int, value: Byte)\n  fun
setUint8(byteOffset: Int, value: Byte)\n  fun setInt16(byteOffset: Int, value: Short, littleEndian: Boolean =
definedExternally)\n  fun setUint16(byteOffset: Int, value: Short, littleEndian: Boolean
= definedExternally)\n  fun setInt32(byteOffset: Int, value: Int, littleEndian: Boolean = definedExternally)\n  fun
setUint32(byteOffset: Int, value: Int, littleEndian: Boolean = definedExternally)\n  fun setFloat32(byteOffset: Int,
value: Float, littleEndian: Boolean = definedExternally)\n  fun setFloat64(byteOffset: Int, value: Double,
littleEndian: Boolean = definedExternally)\n}\n\npublic external interface BufferDataSource\n\npublic external
interface TexImageSource\", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.clipboard\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external interface
ClipboardEventInit : EventInit {\n
  var clipboardData: DataTransfer? /* = null */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ClipboardEventInit(clipboardData:
DataTransfer? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
ClipboardEventInit {\n  val o = js(\"({})\")\n  o[\"clipboardData\"] = clipboardData\n  o[\"bubbles\"] = bubbles\n
o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[ClipboardEvent](https://developer.mozilla.org/en/docs/Web/API/ClipboardEvent) to Kotlin\n */\npublic external
open class ClipboardEvent(type: String, eventInitDict: ClipboardEventInit = definedExternally) : Event {\n  open
val clipboardData: DataTransfer?\n\n  companion object {\n    val NONE: Short\n    val
CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[Clipboard](https://developer.mozilla.org/en/docs/Web/API/Clipboard) to Kotlin\n */\npublic external abstract class
Clipboard : EventTarget {\n  fun read(): Promise<DataTransfer>\n  fun readText(): Promise<String>\n  fun
write(data: DataTransfer): Promise<Unit>\n  fun writeText(data: String): Promise<Unit>\n}\n\npublic external
interface ClipboardPermissionDescriptor {\n  var allowWithoutGesture: Boolean? /* = false */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ClipboardPermissionDescriptor(allowWithoutGesture: Boolean? = false): ClipboardPermissionDescriptor {\n  val
o = js(\"({})\")\n  o[\"allowWithoutGesture\"] = allowWithoutGesture\n  return o\n}\", /*\n * Copyright 2010-

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2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.css\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\n\npublic external abstract class MediaList : ItemArrayLike<String> {\n open var mediaText: String\n fun appendMedium(medium: String)\n fun deleteMedium(medium: String)\n override fun item(index: Int): String?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun MediaList.get(index: Int): String? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [StyleSheet](https://developer.mozilla.org/en/docs/Web/API/StyleSheet) to Kotlin\n */\n\npublic external abstract class StyleSheet {\n open val type: String\n open val href: String?\n open val ownerNode: UnionElementOrProcessingInstruction?\n open val parentStyleSheet: StyleSheet?\n open val title: String?\n open val media: MediaList\n open var disabled: Boolean\n}\n\n/**\n * Exposes the JavaScript [CSSStyleSheet](https://developer.mozilla.org/en/docs/Web/API/CSSStyleSheet) to Kotlin\n */\n\npublic external abstract class CSSStyleSheet : StyleSheet {\n open val ownerRule: CSSRule?\n open val cssRules: CSSRuleList\n fun insertRule(rule: String, index: Int): Int\n fun deleteRule(index: Int)\n}\n\n/**\n * Exposes the JavaScript [StyleSheetList](https://developer.mozilla.org/en/docs/Web/API/StyleSheetList) to Kotlin\n */\n\npublic external abstract class StyleSheetList : ItemArrayLike<StyleSheet> {\n override fun item(index: Int): StyleSheet?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun StyleSheetList.get(index: Int): StyleSheet? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [LinkStyle](https://developer.mozilla.org/en/docs/Web/API/LinkStyle) to Kotlin\n */\n\npublic external interface LinkStyle {\n val sheet: StyleSheet?\n get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript [CSSRuleList](https://developer.mozilla.org/en/docs/Web/API/CSSRuleList) to Kotlin\n */\n\npublic external abstract class CSSRuleList : ItemArrayLike<CSSRule> {\n override fun item(index: Int): CSSRule?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun CSSRuleList.get(index: Int): CSSRule? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [CSSRule](https://developer.mozilla.org/en/docs/Web/API/CSSRule) to Kotlin\n */\n\npublic external abstract class CSSRule {\n open val type: Short\n open var cssText: String\n open val parentRule: CSSRule?\n open val parentStyleSheet: CSSStyleSheet?\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [CSSStyleRule](https://developer.mozilla.org/en/docs/Web/API/CSSStyleRule) to Kotlin\n */\n\npublic external abstract class CSSStyleRule : CSSRule {\n open var selectorText: String\n open val style: CSSStyleDeclaration\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\npublic external abstract class CSSImportRule : CSSRule {\n open val href: String\n open val media: MediaList\n open val styleSheet: CSSStyleSheet\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [CSSGroupingRule](https://developer.mozilla.org/en/docs/Web/API/CSSGroupingRule) to Kotlin\n */\n\npublic external abstract class CSSGroupingRule : CSSRule {\n open val cssRules: CSSRuleList\n fun insertRule(rule:

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String, index: Int): Int\n fun deleteRule(index: Int)\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [CSSMediaRule](https://developer.mozilla.org/en/docs/Web/API/CSSMediaRule) to Kotlin\n */\npublic external abstract class CSSMediaRule : CSSGroupingRule {\n open val media: MediaList\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [CSSPageRule](https://developer.mozilla.org/en/docs/Web/API/CSSPageRule) to Kotlin\n */\npublic external abstract class CSSPageRule : CSSGroupingRule {\n open var selectorText: String\n open val style: CSSStyleDeclaration\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\npublic external abstract class CSSMarginRule : CSSRule {\n open val name: String\n open val style: CSSStyleDeclaration\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [CSSNamespaceRule](https://developer.mozilla.org/en/docs/Web/API/CSSNamespaceRule) to Kotlin\n */\npublic external abstract class CSSNamespaceRule : CSSRule {\n open val namespaceURI: String\n open val prefix: String\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [CSSStyleDeclaration](https://developer.mozilla.org/en/docs/Web/API/CSSStyleDeclaration) to Kotlin\n */\npublic external abstract class CSSStyleDeclaration : ItemArrayLike<String> {\n open var cssText: String\n open val parentRule: CSSRule?\n open var cssFloat: String\n open var alignContent: String\n open var alignItems: String\n open var alignSelf: String\n open var animation: String\n open var animationDelay: String\n open var animationDirection: String\n open var animationDuration: String\n open var animationFillMode: String\n open var animationIterationCount: String\n open var animationName: String\n open var animationPlayState: String\n open var animationTimingFunction: String\n open var backfaceVisibility: String\n open var background: String\n open var backgroundAttachment: String\n open var backgroundClip: String\n open var backgroundColor: String\n open var backgroundImage: String\n open var backgroundOrigin: String\n open var backgroundPosition: String\n open var backgroundRepeat: String\n open var backgroundSize: String\n open var border: String\n open var borderBottom: String\n open var borderBottomColor: String\n open var borderBottomLeftRadius: String\n open var borderBottomRightRadius: String\n open var borderBottomStyle: String\n open var borderBottomWidth: String\n open var borderCollapse: String\n open var borderColor: String\n open var borderImage: String\n open var borderImageOutset: String\n open var borderImageRepeat: String\n open var borderImageSlice: String\n open var borderImageSource: String\n open var borderImageWidth: String\n open var borderLeft: String\n open var borderLeftColor: String\n open var borderLeftStyle: String\n open var borderLeftWidth: String\n open var borderRadius: String\n open var borderRight: String\n open var borderRightColor: String\n open var borderRightStyle: String\n open var borderRightWidth: String\n open var borderSpacing: String\n open var borderStyle: String\n open var borderTop: String\n open var borderTopColor: String\n open var borderTopLeftRadius: String\n open var borderTopRightRadius: String\n open var borderTopStyle: String\n open var borderTopWidth: String\n open var borderWidth: String\n open var bottom: String\n open var

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boxDecorationBreak: String\n open var boxShadow: String\n open var boxSizing: String\n open var
breakAfter: String\n open var breakBefore: String\n open var breakInside: String\n open var captionSide:
String\n open var clear: String\n open var clip: String\n open var color: String\n open var columnCount:
String\n open var columnFill: String\n open var columnGap: String\n open var columnRule: String\n open
var columnRuleColor: String\n open var columnRuleStyle: String\n open var columnRuleWidth: String\n open
var columnSpan: String\n open var columnWidth: String\n open var columns: String\n open var content:
String\n open var counterIncrement: String\n open var counterReset: String\n open var cursor:
String\n open var direction: String\n open var display: String\n open var emptyCells: String\n open var
filter: String\n open var flex: String\n open var flexBasis: String\n open var flexDirection: String\n open var
flexFlow: String\n open var flexGrow: String\n open var flexShrink: String\n open var flexWrap: String\n
open var font: String\n open var fontFamily: String\n open var fontFeatureSettings: String\n open var
fontKerning: String\n open var fontLanguageOverride: String\n open var fontSize: String\n open var
fontSizeAdjust: String\n open var fontStretch: String\n open var fontStyle: String\n open var fontSynthesis:
String\n open var fontVariant: String\n open var fontVariantAlternates: String\n open var fontVariantCaps:
String\n open var fontVariantEastAsian: String\n open var fontVariantLigatures: String\n open var
fontVariantNumeric: String\n open var fontVariantPosition: String\n open var
fontWeight: String\n open var hangingPunctuation: String\n open var height: String\n open var hyphens:
String\n open var imageOrientation: String\n open var imageRendering: String\n open var imageResolution:
String\n open var imeMode: String\n open var justifyContent: String\n open var left: String\n open var
letterSpacing: String\n open var lineBreak: String\n open var lineHeight: String\n open var listStyle: String\n
open var listStyleImage: String\n open var listStylePosition: String\n open var listStyleType: String\n open var
margin: String\n open var marginBottom: String\n open var marginLeft: String\n open var marginRight:
String\n open var marginTop: String\n open var mark: String\n open var markAfter: String\n open var
markBefore: String\n open var marks: String\n open var marqueeDirection: String\n open var
marqueePlayCount: String\n open var marqueeSpeed: String\n open var marqueeStyle:
String\n open var mask: String\n open var maskType: String\n open var maxHeight: String\n open var
maxWidth: String\n open var minHeight: String\n open var minWidth: String\n open var navDown: String\n
open var navIndex: String\n open var navLeft: String\n open var navRight: String\n open var navUp: String\n
open var objectFit: String\n open var objectPosition: String\n open var opacity: String\n open var order:
String\n open var orphans: String\n open var outline: String\n open var outlineColor: String\n open var
outlineOffset: String\n open var outlineStyle: String\n open var outlineWidth: String\n open var
overflowWrap: String\n open var overflowX: String\n open var overflowY: String\n open var padding:
String\n open var paddingBottom: String\n open var paddingLeft: String\n open var paddingRight: String\n
open var paddingTop: String\n open var pageBreakAfter: String\n open var pageBreakBefore:
String\n open var pageBreakInside: String\n open var perspective: String\n open var perspectiveOrigin:
String\n open var phonemes: String\n open var position: String\n open var quotes: String\n open var resize:
String\n open var rest: String\n open var restAfter: String\n open var restBefore: String\n open var right:
String\n open var tabSize: String\n open var tableLayout: String\n open var textAlign: String\n open var
textAlignLast: String\n open var textCombineUpright: String\n open var textDecoration: String\n open var
textDecorationColor: String\n open var textDecorationLine: String\n open var textDecorationStyle: String\n
open var textIndent: String\n open var textJustify: String\n open var textOrientation: String\n open var
textOverflow: String\n open var textShadow: String\n open var textTransform: String\n open var
textUnderlinePosition: String\n open var top: String\n open var transform:
String\n open var transformOrigin: String\n open var transformStyle: String\n open var transition: String\n
open var transitionDelay: String\n open var transitionDuration: String\n open var transitionProperty: String\n
open var transitionTimingFunction: String\n open var unicodeBidi: String\n open var verticalAlign: String\n
open var visibility: String\n open var voiceBalance: String\n open var voiceDuration: String\n open var
voicePitch: String\n open var voicePitchRange: String\n open var voiceRate: String\n open var voiceStress:


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String\n  open var voiceVolume: String\n  open var whiteSpace: String\n  open var widows: String\n  open var
width: String\n  open var wordBreak: String\n  open var wordSpacing: String\n  open var wordWrap: String\n
open var writingMode: String\n  open var zIndex: String\n  open var _dashed_attribute: String\n  open var
_camel_cased_attribute: String\n  open var _webkit_cased_attribute:
String\n  fun getPropertyValue(property: String): String\n  fun getPropertyPriority(property: String): String\n
fun setProperty(property: String, value: String, priority: String = definedExternally)\n  fun
setPropertyValue(property: String, value: String)\n  fun setPropertyPriority(property: String, priority: String)\n
fun removeProperty(property: String): String\n  override fun item(index: Int):
String\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
CSSStyleDeclaration.get(index: Int): String? = asDynamic()[index]\n\npublic external interface
ElementCSSInlineStyle {\n  val style: CSSStyleDeclaration\n}\n\n/**\n * Exposes the JavaScript
[CSS](https://developer.mozilla.org/en/docs/Web/API/CSS) to Kotlin\n *\npublic external abstract class CSS {\n
companion object {\n  fun escape(ident: String): String\n  }\n}\n\npublic external interface
UnionElementOrProcessingInstruction\", /*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS
AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage
org.w3c.dom.encryptedmedia\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport
org.w3c.dom.events.*\n\n/**\n * Exposes the JavaScript
[MediaKeySystemConfiguration](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemConfiguration)
to Kotlin\n *\npublic external interface MediaKeySystemConfiguration {\n  var label: String? /* = \"\" *\n
get() = definedExternally\n  set(value) = definedExternally\n  var initDataTypes: Array<String>? /* = arrayOf()
*\n  get() = definedExternally\n  set(value) = definedExternally\n  var audioCapabilities:
Array<MediaKeySystemMediaCapability>? /* = arrayOf() *\n  get() = definedExternally\n
set(value) = definedExternally\n  var videoCapabilities: Array<MediaKeySystemMediaCapability>? /* =
arrayOf() *\n  get() = definedExternally\n  set(value) = definedExternally\n  var distinctiveIdentifier:
MediaKeysRequirement? /* = MediaKeysRequirement.OPTIONAL *\n  get() = definedExternally\n
set(value) = definedExternally\n  var persistentState: MediaKeysRequirement? /* =
MediaKeysRequirement.OPTIONAL *\n  get() = definedExternally\n  set(value) = definedExternally\n
var sessionTypes: Array<String>?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaKeySystemConfiguration(label:
String? = \"\", initDataTypes: Array<String>? = arrayOf(), audioCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), videoCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(),
distinctiveIdentifier: MediaKeysRequirement? = MediaKeysRequirement.OPTIONAL, persistentState:
MediaKeysRequirement? = MediaKeysRequirement.OPTIONAL, sessionTypes: Array<String>? = undefined):
MediaKeySystemConfiguration {\n  val o = js(\"({})\")\n  o[\"label\"] = label\n  o[\"initDataTypes\"] =
initDataTypes\n  o[\"audioCapabilities\"] = audioCapabilities\n  o[\"videoCapabilities\"] = videoCapabilities\n
o[\"distinctiveIdentifier\"] = distinctiveIdentifier\n  o[\"persistentState\"] = persistentState\n  o[\"sessionTypes\"]
= sessionTypes\n  return o\n}\n\npublic external interface MediaKeySystemMediaCapability {\n  var
contentType: String? /* = \"\" *\n  get() = definedExternally\n  set(value) = definedExternally\n  var
robustness: String? /* = \"\" *\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaKeySystemMediaCapability(contentType:

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String? = "\", robustness: String? = "\"): MediaKeySystemMediaCapability {\n  val o = js("{}")\n
o["contentType"] = contentType\n  o["robustness"] = robustness\n  return o}\n\n/**\n * Exposes the
JavaScript [MediaKeySystemAccess](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemAccess) to
Kotlin\n * \npublic external abstract class MediaKeySystemAccess {\n  open val keySystem: String\n  fun
getConfiguration(): MediaKeySystemConfiguration\n  fun createMediaKeys(): Promise<MediaKeys>\n}\n\n/**\n
* Exposes the JavaScript [MediaKeys](https://developer.mozilla.org/en/docs/Web/API/MediaKeys) to Kotlin\n
* \npublic external abstract class MediaKeys {\n  fun createSession(sessionType: MediaKeySessionType =
definedExternally): MediaKeySession\n  fun setServerCertificate(serverCertificate: dynamic):
Promise<Boolean>\n}\n\n/**\n * Exposes the JavaScript
[MediaKeySession](https://developer.mozilla.org/en/docs/Web/API/MediaKeySession)
to Kotlin\n * \npublic external abstract class MediaKeySession : EventTarget {\n  open val sessionId: String\n
open val expiration: Double\n  open val closed: Promise<Unit>\n  open val keyStatuses: MediaKeyStatusMap\n
open var onkeystatuseschange: ((Event) -> dynamic)?\n  open var onmessage: ((MessageEvent) -> dynamic)?\n
fun generateRequest(initDataType: String, initData: dynamic): Promise<Unit>\n  fun load(sessionId: String):
Promise<Boolean>\n  fun update(response: dynamic): Promise<Unit>\n  fun close(): Promise<Unit>\n  fun
remove(): Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript
[MediaKeyStatusMap](https://developer.mozilla.org/en/docs/Web/API/MediaKeyStatusMap) to Kotlin\n * \npublic
external abstract class MediaKeyStatusMap {\n  open val size: Int\n  fun has(keyId: dynamic): Boolean\n  fun
get(keyId: dynamic): Any?\n}\n\n/**\n * Exposes the JavaScript
[MediaKeyMessageEvent](https://developer.mozilla.org/en/docs/Web/API/MediaKeyMessageEvent)
to Kotlin\n * \npublic external open class MediaKeyMessageEvent(type: String, eventInitDict:
MediaKeyMessageEventInit) : Event {\n  open val messageType: MediaKeyMessageType\n  open val message:
ArrayBuffer\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
MediaKeyMessageEventInit : EventInit {\n  var messageType: MediaKeyMessageType?\n  var message:
ArrayBuffer?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaKeyMessageEventInit(messageType: MediaKeyMessageType?, message: ArrayBuffer?, bubbles: Boolean? =
false, cancelable: Boolean? = false, composed: Boolean? = false): MediaKeyMessageEventInit {\n  val o =
js("{}")\n  o["messageType"] = messageType\n  o["message"] = message\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"]
= composed\n  return o}\n\npublic external open class MediaEncryptedEvent(type: String, eventInitDict:
MediaEncryptedEventInit = definedExternally) : Event {\n  open val initDataType: String\n  open val initData:
ArrayBuffer?\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
MediaEncryptedEventInit : EventInit {\n  var initDataType: String? /* = "" */\n  get() = definedExternally\n
set(value) = definedExternally\n  var initData: ArrayBuffer? /* = null */\n  get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaEncryptedEventInit(initDataType: String? = "", initData: ArrayBuffer? = null, bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): MediaEncryptedEventInit
{\n  val o = js("{}")\n  o["initDataType"] = initDataType\n  o["initData"] = initData\n  o["bubbles"] =
bubbles\n  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o}\n\n/* please, don't
implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaKeysRequirement {\n  companion object\n}\n\npublic inline val
MediaKeysRequirement.Companion.REQUIRED: MediaKeysRequirement get() =
"required".asDynamic().unsafeCast<MediaKeysRequirement>()\n\npublic inline val

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MediaKeysRequirement.Companion.OPTIONAL: MediaKeysRequirement get() =
  \"optional\".asDynamic().unsafeCast<MediaKeysRequirement>()\n\npublic inline val
MediaKeysRequirement.Companion.NOT_ALLOWED: MediaKeysRequirement get() = \"not-
allowed\".asDynamic().unsafeCast<MediaKeysRequirement>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface MediaKeySessionType {\n  companion object\n}\n\npublic inline val
MediaKeySessionType.Companion.TEMPORARY: MediaKeySessionType get() =
  \"temporary\".asDynamic().unsafeCast<MediaKeySessionType>()\n\npublic inline val
MediaKeySessionType.Companion.PERSISTENT_LICENSE: MediaKeySessionType get() = \"persistent-
license\".asDynamic().unsafeCast<MediaKeySessionType>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface MediaKeyStatus {\n  companion object\n}\n\npublic inline val MediaKeyStatus.Companion.USABLE:
MediaKeyStatus get() = \"usable\".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.EXPIRED: MediaKeyStatus get() =
  \"expired\".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.RELEASED: MediaKeyStatus get() =
  \"released\".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.OUTPUT_RESTRICTED:
  MediaKeyStatus get() = \"output-restricted\".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.OUTPUT_DOWNSCALED: MediaKeyStatus get() = \"output-
downscaled\".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.STATUS_PENDING: MediaKeyStatus get() = \"status-
pending\".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.INTERNAL_ERROR: MediaKeyStatus get() = \"internal-
error\".asDynamic().unsafeCast<MediaKeyStatus>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface MediaKeyMessageType {\n  companion object\n}\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_REQUEST: MediaKeyMessageType get() = \"license-
request\".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RENEWAL: MediaKeyMessageType
get() = \"license-renewal\".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RELEASE: MediaKeyMessageType get() = \"license-
release\".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.INDIVIDUALIZATION_REQUEST: MediaKeyMessageType get() =
  \"individualization-request\".asDynamic().unsafeCast<MediaKeyMessageType>()\n\n/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage
org.w3c.dom.events\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\n\n/**\n * Exposes
the JavaScript [UIEvent](https://developer.mozilla.org/en/docs/Web/API/UIEvent) to Kotlin\n *\n\npublic external
open class UIEvent(type: String,
  eventInitDict: UIEventInit = definedExternally) : Event {\n  open val view: Window?\n  open val detail: Int\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET:
Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface UIEventInit : EventInit {\n  var
view: Window? /* = null */\n  get() = definedExternally\n  set(value) = definedExternally\n  var detail: Int?
/* = 0 */\n  get() = definedExternally\n  set(value) =
  definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
  \"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun UIEventInit(view: Window? = null,

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detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): UIEventInit
{
    val o = js("{}")
    o["view"] = view
    o["detail"] = detail
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return
}

o["view"] = view
o["detail"] = detail
o["bubbles"] = bubbles
o["cancelable"] = cancelable
o["composed"] = composed
return o

}

* Exposes the JavaScript [FocusEvent](https://developer.mozilla.org/en/docs/Web/API/FocusEvent)
to Kotlin

public external open class FocusEvent(type: String, eventInitDict: FocusEventInit =
definedExternally) : UIEvent {
    open val relatedTarget: EventTarget?
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
    public external interface FocusEventInit : UIEventInit {
        var relatedTarget: EventTarget? /* = null */
        get() = definedExternally
        set(value) =
definedExternally
    }
    @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
    @kotlin.internal.InlineOnly
    public inline fun FocusEventInit(relatedTarget:
EventTarget? = null, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? =
false, composed: Boolean? = false): FocusEventInit {
        val o = js("{}")
        o["relatedTarget"] =
relatedTarget
        o["view"] = view
        o["detail"] = detail
        o["bubbles"] = bubbles
        o["cancelable"] = cancelable
        o["composed"] = composed
        return o
    }
}

* Exposes the JavaScript
[MouseEvent](https://developer.mozilla.org/en/docs/Web/API/MouseEvent) to Kotlin

public external open
class MouseEvent(type: String, eventInitDict: MouseEventInit = definedExternally) : UIEvent,
UnionElementOrMouseEvent {
    open val screenX: Int
    open val screenY: Int
    open val clientX: Int
    open val clientY: Int
    open val ctrlKey: Boolean
    open val shiftKey: Boolean
    open val altKey: Boolean
    open val metaKey: Boolean
    open val button: Short
    open val buttons: Short
    open val relatedTarget:
EventTarget?
    open val region: String?
    open val pageX: Double
    open val pageY: Double
    open val x:
Double
    open val y: Double
    open val offsetX: Double
    open val offsetY: Double
    fun
getModifierState(keyArg: String):
Boolean
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
    public external interface MouseEventInit :
EventModifierInit {
        var screenX: Int? /* = 0 */
        get() = definedExternally
        set(value) =
definedExternally
        var screenY: Int? /* = 0 */
        get() = definedExternally
        set(value) =
definedExternally
        var clientX: Int? /* = 0 */
        get() = definedExternally
        set(value) =
definedExternally
        var clientY: Int? /* = 0 */
        get() = definedExternally
        set(value) =
definedExternally
        var button: Short? /* = 0 */
        get() = definedExternally
        set(value) =
definedExternally
        var buttons: Short? /* = 0 */
        get() = definedExternally
        set(value) =
definedExternally
        var relatedTarget: EventTarget? /* = null */
        get() = definedExternally
        set(value)
= definedExternally
        var region: String? /* = null */
        get() = definedExternally
        set(value) =
definedExternally
    }
    @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
    @kotlin.internal.InlineOnly
    public inline fun MouseEventInit(screenX: Int? = 0,
screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget:
EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean?
= false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false,
modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean?
= false): MouseEventInit {
        val o = js("{}")
        o["screenX"] = screenX
        o["screenY"] = screenY
        o["clientX"] = clientX
        o["clientY"] = clientY
        o["button"] = button
        o["buttons"] = buttons
        o["relatedTarget"] = relatedTarget
        o["region"] = region
        o["ctrlKey"] = ctrlKey
        o["shiftKey"] =
shiftKey
        o["altKey"] = altKey
        o["metaKey"] = metaKey
        o["modifierAltGraph"] =

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modifierAltGraph\n  o["modifierCapsLock"] = modifierCapsLock\n  o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n  o["modifierHyper"] = modifierHyper\n  o["modifierNumLock"] =
modifierNumLock\n  o["modifierScrollLock"] = modifierScrollLock\n  o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n  o["modifierSymbolLock"] = modifierSymbolLock\n  o["view"] =
view\n  o["detail"] = detail\n  o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n
o["composed"] = composed\n  return o\n}\n\npublic external interface EventModifierInit : UIEventInit {\n  var
ctrlKey: Boolean? /* = false */\n    get() = definedExternally\n    set(value) = definedExternally\n  var
shiftKey: Boolean? /* = false */\n    get() = definedExternally\n    set(value) = definedExternally\n  var
altKey: Boolean? /* = false */\n    get() = definedExternally\n    set(value) = definedExternally\n  var
metaKey: Boolean? /* = false */\n    get() = definedExternally\n    set(value) = definedExternally\n  var
modifierAltGraph: Boolean? /* = false */\n    get() = definedExternally\n    set(value) = definedExternally\n
var modifierCapsLock: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n  var modifierFn: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n  var modifierFnLock: Boolean? /* = false */\n    get()
= definedExternally\n    set(value) = definedExternally\n  var modifierHyper: Boolean? /* = false */\n    get()
= definedExternally\n    set(value) = definedExternally\n  var modifierNumLock: Boolean? /* = false */\n
get() = definedExternally\n    set(value) = definedExternally\n  var modifierScrollLock: Boolean? /* = false */\n
get() = definedExternally\n    set(value) = definedExternally\n  var modifierSuper: Boolean? /* = false */\n
get() = definedExternally\n    set(value) = definedExternally\n  var modifierSymbol: Boolean? /* = false */\n
get() = definedExternally\n    set(value) = definedExternally\n  var modifierSymbolLock: Boolean? /* = false
*/\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun EventModifierInit(ctrlKey: Boolean? =
false, shiftKey: Boolean? = false, altKey:
Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? =
false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): EventModifierInit {\n  val o
= js("{}")\n  o["ctrlKey"] = ctrlKey\n  o["shiftKey"] = shiftKey\n  o["altKey"] = altKey\n
o["metaKey"] = metaKey\n  o["modifierAltGraph"] = modifierAltGraph\n  o["modifierCapsLock"] =
modifierCapsLock\n  o["modifierFn"] = modifierFn\n  o["modifierFnLock"] = modifierFnLock\n
o["modifierHyper"] = modifierHyper\n  o["modifierNumLock"] = modifierNumLock\n
o["modifierScrollLock"] = modifierScrollLock\n
o["modifierSuper"] = modifierSuper\n  o["modifierSymbol"] = modifierSymbol\n
o["modifierSymbolLock"] = modifierSymbolLock\n  o["view"] = view\n  o["detail"] = detail\n
o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return
o\n}\n\n/** * Exposes the JavaScript [WheelEvent](https://developer.mozilla.org/en/docs/Web/API/WheelEvent)
to Kotlin\n */\n\npublic external open class WheelEvent(type: String, eventInitDict: WheelEventInit =
definedExternally) : MouseEvent {\n  open val deltaX: Double\n  open val deltaY: Double\n  open val deltaZ:
Double\n  open val deltaMode: Int\n\n  companion object {\n    val DOM_DELTA_PIXEL: Int\n    val
DOM_DELTA_LINE: Int\n    val DOM_DELTA_PAGE: Int\n    val NONE: Short\n    val
CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface WheelEventInit : MouseEventInit {\n  var deltaX:
Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n  var deltaY: Double? /*
= 0.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n  var deltaZ: Double? /* = 0.0 */\n
get() = definedExternally\n    set(value) = definedExternally\n  var deltaMode: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",

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\INVISIBLE_MEMBER\)\n@kotlin.internal.InlineOnly\npublic inline fun WheelEventInit(deltaX: Double? = 0.0,
deltaY: Double? = 0.0, deltaZ: Double? = 0.0, deltaMode: Int? = 0, screenX: Int? = 0, screenY: Int? = 0, clientX:
Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? = null, region:
String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean?
= false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false,
modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): WheelEventInit {\n    val o =
js("{}")\n    o["deltaX"] = deltaX\n    o["deltaY"] = deltaY\n    o["deltaZ"] = deltaZ\n    o["deltaMode"] =
deltaMode\n    o["screenX"] = screenX\n    o["screenY"] = screenY\n    o["clientX"] = clientX\n    o["clientY"]
= clientY\n    o["button"] = button\n    o["buttons"] = buttons\n    o["relatedTarget"] = relatedTarget\n
o["region"] = region\n    o["ctrlKey"] = ctrlKey\n    o["shiftKey"] = shiftKey\n    o["altKey"] = altKey\n
o["metaKey"] = metaKey\n    o["modifierAltGraph"] = modifierAltGraph\n    o["modifierCapsLock"]
= modifierCapsLock\n    o["modifierFn"] = modifierFn\n    o["modifierFnLock"] = modifierFnLock\n
o["modifierHyper"] = modifierHyper\n    o["modifierNumLock"] = modifierNumLock\n
o["modifierScrollLock"] = modifierScrollLock\n    o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n    o["modifierSymbolLock"] = modifierSymbolLock\n    o["view"] =
view\n    o["detail"] = detail\n    o["bubbles"] = bubbles\n    o["cancelable"] = cancelable\n    o["composed"] =
composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[InputEvent](https://developer.mozilla.org/en/docs/Web/API/InputEvent) to Kotlin\n *^\npublic external open class
InputEvent(type: String, eventInitDict: InputEventInit = definedExternally) : UIEvent {\n    open val data: String\n
open val isComposing: Boolean\n\n    companion object {\n        val NONE: Short\n        val
CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n
    }\n\n    public external interface InputEventInit : UIEventInit {\n        var data: String? /* = "" */\n        get() =
definedExternally\n        set(value) = definedExternally\n        var isComposing: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n    }\n\n    @Suppress("\INVISIBLE_REFERENCE",
\INVISIBLE_MEMBER")\n    @kotlin.internal.InlineOnly\n    public inline fun InputEventInit(data: String? = "",
isComposing: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): InputEventInit {\n        val o = js("{}")\n        o["data"] = data\n
o["isComposing"] = isComposing\n        o["view"] = view\n        o["detail"] = detail\n        o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n        o["composed"] = composed\n        return o\n}\n\n/**\n * Exposes the JavaScript
[KeyboardEvent](https://developer.mozilla.org/en/docs/Web/API/KeyboardEvent) to Kotlin\n *^\npublic external open class
KeyboardEvent(type: String, eventInitDict: KeyboardEventInit = definedExternally) :
UIEvent {\n    open val key: String\n    open val code: String\n    open val location: Int\n    open val ctrlKey:
Boolean\n    open val shiftKey: Boolean\n    open val altKey: Boolean\n    open val metaKey: Boolean\n    open val
repeat: Boolean\n    open val isComposing: Boolean\n    open val charCode: Int\n    open val keyCode: Int\n    open
val which: Int\n    fun getModifierState(keyArg: String): Boolean\n\n    companion object {\n        val
DOM_KEY_LOCATION_STANDARD: Int\n        val DOM_KEY_LOCATION_LEFT: Int\n        val
DOM_KEY_LOCATION_RIGHT: Int\n        val DOM_KEY_LOCATION_NUMPAD: Int\n        val NONE:
Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE:
Short\n    }\n\n    public external interface KeyboardEventInit : EventModifierInit {\n        var key: String? /* = "" */
*\n        get() = definedExternally\n        set(value) = definedExternally\n        var code: String? /* = "" */\n        get() = definedExternally\n
set(value) = definedExternally\n        var location: Int? /* = 0 */\n        get() = definedExternally\n        set(value) =
definedExternally\n        var repeat: Boolean? /* = false */\n        get() = definedExternally\n        set(value) =
definedExternally\n        var isComposing: Boolean? /* = false */\n        get() = definedExternally\n        set(value) =
definedExternally\n    }\n\n    @Suppress("\INVISIBLE_REFERENCE",

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\@kotlin.internal.InlineOnly\npublic inline fun KeyboardEventInit(key: String? = "",
code: String? = "", location: Int? = 0, repeat: Boolean? = false, isComposing: Boolean? = false, ctrlKey: Boolean? =
false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph:
Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? =
false, modifierHyper:
Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper:
Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? =
null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
KeyboardEventInit {\n val o = js("{}")\n o["key"] = key\n o["code"] = code\n o["location"] =
location\n o["repeat"] = repeat\n o["isComposing"] = isComposing\n o["ctrlKey"] = ctrlKey\n
o["shiftKey"] = shiftKey\n o["altKey"] = altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"] =
modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"] =
modifierNumLock\n o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"]
= modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] = view\n o["detail"]
= detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o\n}\n\n/**\n * Exposes the JavaScript
[CompositionEvent](https://developer.mozilla.org/en/docs/Web/API/CompositionEvent) to Kotlin\n *\npublic
external open class CompositionEvent(type: String, eventInitDict: CompositionEventInit = definedExternally) :
UIEvent {\n open val data: String\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface CompositionEventInit : UIEventInit {\n var data: String? /* = "" */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CompositionEventInit(data:
String? = "", view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): CompositionEventInit {\n val o = js("{}")\n o["data"] = data\n o["view"] =
view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Event](https://developer.mozilla.org/en/docs/Web/API/Event) to Kotlin\n *\npublic external open class
Event(type: String, eventInitDict: EventInit = definedExternally) {\n open val type: String\n open val target:
EventTarget?\n open val currentTarget: EventTarget?\n open val eventPhase: Short\n open val bubbles:
Boolean\n open val cancelable: Boolean\n open val defaultPrevented: Boolean\n open val composed:
Boolean\n open val isTrusted: Boolean\n open val timeStamp: Number\n fun composedPath():
Array<EventTarget>\n fun stopPropagation()\n
fun stopImmediatePropagation()\n fun preventDefault()\n fun initEvent(type: String, bubbles: Boolean,
cancelable: Boolean)\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n
val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[EventTarget](https://developer.mozilla.org/en/docs/Web/API/EventTarget) to Kotlin\n *\npublic external abstract
class EventTarget {\n fun addEventListener(type: String, callback: EventListener?, options: dynamic =
definedExternally)\n fun addEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic =
definedExternally)\n fun removeEventListener(type: String, callback: EventListener?, options: dynamic =
definedExternally)\n fun removeEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic =
definedExternally)\n fun dispatchEvent(event: Event): Boolean\n}\n\n/**\n * Exposes the JavaScript
[EventListener](https://developer.mozilla.org/en/docs/Web/API/EventListener)
to Kotlin\n *\npublic external interface EventListener {\n fun handleEvent(event: Event)\n}, /*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS

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AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage
org.w3c.dom\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.clipboard.*\nimport
org.w3c.dom.css.*\nimport org.w3c.dom.encryptedmedia.*\nimport org.w3c.dom.events.*\nimport
org.w3c.dom.mediacapture.*\nimport org.w3c.dom.mediasource.*\nimport org.w3c.dom.pointerevents.*\nimport
org.w3c.dom.svg.*\nimport org.w3c.fetch.*\nimport org.w3c.files.*\nimport org.w3c.performance.*\nimport
org.w3c.workers.*\nimport org.w3c.xhr.*\n\npublic external abstract class HTMLAllCollection {\n    open val
length: Int\n    fun item(nameOrIndex: String = definedExternally): UnionElementOrHTMLCollection?\n    fun
namedItem(name: String): UnionElementOrHTMLCollection?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLAllCollection.get(index: Int): Element? =
asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLAllCollection.get(name: String): UnionElementOrHTMLCollection? = asDynamic()[name]\n\n/**\n *
Exposes the JavaScript
[HTMLFormControlsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLFormControlsCollection)
to Kotlin\n *
\npublic external abstract class HTMLFormControlsCollection : HTMLCollection\n\n/**\n * Exposes
the JavaScript [RadioNodeList](https://developer.mozilla.org/en/docs/Web/API/RadioNodeList) to Kotlin\n
*\npublic external abstract class RadioNodeList : NodeList, UnionElementOrRadioNodeList {\n    open
var value: String\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptionsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionsCollection) to Kotlin\n
*\npublic external abstract class HTMLOptionsCollection : HTMLCollection {\n    override var length: Int\n    open
var selectedIndex: Int\n    fun add(element: UnionHTMLOptGroupElementOrHTMLOptionElement, before:
dynamic = definedExternally)\n    fun remove(index: Int)\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLOptionsCollection.set(index: Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n/**\n *
Exposes the JavaScript [HTMLInputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLInputElement) to
Kotlin\n *
\npublic external abstract class HTMLInputElement : Element, GlobalEventHandlers,
DocumentAndElementEventHandlers, ElementContentEditable, ElementCSSInlineStyle {\n    open var title:
String\n    open var lang: String\n    open var
translate: Boolean\n    open var dir: String\n    open val dataset: DOMStringMap\n    open var hidden: Boolean\n
open var tabIndex: Int\n    open var accessKey: String\n    open val accessKeyLabel: String\n    open var draggable:
Boolean\n    open val dropzone: DOMTokenList\n    open var contextMenu: HTMLMenuElement?\n    open var
spellcheck: Boolean\n    open var innerText: String\n    open val offsetParent: Element?\n    open val offsetTop: Int\n
open val offsetLeft: Int\n    open val offsetWidth: Int\n    open val offsetHeight: Int\n    fun click()\n    fun
focus()\n    fun blur()\n    fun forceSpellCheck()\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLUnknownElement](https://developer.mozilla.org/en/docs/Web/API/HTMLUnknownElement) to Kotlin\n *
\npublic external abstract class HTMLUnknownElement : HTMLInputElement {\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:

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Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[DOMStringMap](https://developer.mozilla.org/en/docs/Web/API/DOMStringMap) to Kotlin\n\n*\n\npublic external
abstract class DOMStringMap\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.get(name:
String): String? = asDynamic()[name]\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.set(name:
String, value: String) { asDynamic()[name] = value }\n\n\n/**\n * Exposes the JavaScript
[HTMLHtmlElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHtmlElement)
to Kotlin\n\n*\n\npublic external abstract class HTMLHtmlElement : HTMLElement {\n    open var version:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n\n/**\n * Exposes the JavaScript
[HTMLHeadElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadElement)
to Kotlin\n\n*\n\npublic external abstract class HTMLHeadElement : HTMLElement {\n    companion object {\n
val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n\n/**\n * Exposes the JavaScript
[HTMLTitleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTitleElement)
to Kotlin\n\n*\n\npublic external abstract class HTMLTitleElement : HTMLElement {\n    open var text: String\n\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n\n/**\n * Exposes the JavaScript
[HTMLBaseElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBaseElement)

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to Kotlin\n */\npublic external abstract class HTMLBaseElement : HTMLElement {\n    open var href: String\n    open var target: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n\n        DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [HTMLLinkElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLinkElement)
to Kotlin\n */\npublic external abstract class HTMLLinkElement : HTMLElement, LinkStyle {\n    open var href: String\n    open var crossOrigin: String?\n    open var rel: String\n    open var `as`: RequestDestination\n    open val relList: DOMTokenList\n    open var media: String\n    open var nonce: String\n    open var hreflang: String\n    open var type: String\n    open val sizes: DOMTokenList\n    open varreferrerPolicy: String\n    open var charset: String\n    open var rev: String\n    open var target: String\n    open var scope: String\n    open var workerType: WorkerType\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [HTMLMetaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMetaElement) to
Kotlin\n */\npublic external abstract class HTMLMetaElement : HTMLElement {\n    open var name: String\n    open var httpEquiv: String\n    open var content: String\n    open var scheme: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n\n        DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [HTMLStyleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLStyleElement) to
Kotlin\n */\npublic external abstract class HTMLStyleElement : HTMLElement, LinkStyle {\n    open var media: String\n    open var nonce: String\n    open var type: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n    }\n}

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DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLBodyElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBodyElement) to Kotlin \n * \n public
external abstract class HTMLBodyElement : HTMLElement, WindowEventHandlers { \n    open var text: String \n
open var link: String \n    open var vLink: String \n    open var aLink: String \n    open var bgColor: String \n    open
var background:
String \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLHeadingElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadingElement) to Kotlin \n
* \n public external abstract class HTMLHeadingElement : HTMLElement
{ \n    open var align: String \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLParagraphElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParagraphElement) to Kotlin \n
* \n public external abstract class HTMLParagraphElement
: HTMLElement { \n    open var align: String \n \n    companion object { \n        val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLHRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHRElement) to Kotlin \n * \n public
external abstract class HTMLHRElement
: HTMLElement { \n    open var align: String \n    open var color: String \n    open var noShade: Boolean \n    open var
size: String \n    open var width: String \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val

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DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes the JavaScript
[HTMLPreElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPreElement)
to Kotlin \n * \n public external abstract class HTMLPreElement : HTMLElement { \n open var width: Int \n \n
companion object { \n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes the JavaScript
[HTMLQuoteElement](https://developer.mozilla.org/en/docs/Web/API/HTMLQuoteElement)
to Kotlin \n * \n public external abstract class HTMLQuoteElement : HTMLElement { \n open var cite: String \n \n
companion object { \n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes the JavaScript
[HTMLLOListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLOListElement)
to Kotlin \n * \n public external abstract class HTMLLOListElement : HTMLElement { \n open var reversed:
Boolean \n open var start: Int \n open var type: String \n open var compact: Boolean \n \n companion object { \n
val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes the JavaScript
[HTMLLUListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLUListElement) to Kotlin \n * \n public
external abstract class HTMLLUListElement : HTMLElement { \n open var compact: Boolean \n open var type:
String \n \n companion object { \n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n

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    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLLIElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLIElement) to Kotlin\n
*/\npublic external abstract class HTMLLIElement : HTMLIElement {\n    open var value: Int\n    open var type:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDListElement) to Kotlin\n
*/\npublic external abstract class HTMLDListElement : HTMLIElement {\n    open var compact: Boolean\n\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:
Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDivElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDivElement) to Kotlin\n
*/\npublic external abstract class HTMLDivElement : HTMLIElement {\n    open var align: String\n\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:
Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLAnchorElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAnchorElement) to Kotlin\n
*/\npublic external abstract class HTMLAnchorElement : HTMLIElement, HTMLHyperlinkElementUtils {\n
    open var target: String\n    open var download: String\n    open var ping: String\n    open var rel: String\n
    open val relList: DOMTokenList\n    open var hreflang: String\n    open var type: String\n    open var text: String\n
    open var referrerPolicy: String\n    open var coords: String\n    open var charset: String\n    open var name: String\n
    open var rev: String\n    open var shape: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n

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    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDataElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataElement) to Kotlin\n */\npublic
external abstract class HTMLDataElement : HTMLElement {\n    open var value: String\n\n    companion object {\n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTimeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTimeElement) to Kotlin\n */\npublic
external abstract class HTMLTimeElement : HTMLElement {\n    open var dateTime: String\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSpanElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSpanElement) to Kotlin\n */\npublic
external abstract class HTMLSpanElement : HTMLElement {\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLBRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBRElement) to Kotlin\n */\npublic
external abstract class HTMLBRElement : HTMLElement {\n    open var clear: String\n\n    companion object {\n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLHyperlinkElementUtils](https://developer.mozilla.org/en/docs/Web/API/HTMLHyperlinkElementUtils) to

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Kotlin\n */\npublic external interface HTMLHyperlinkElementUtils {\n    var href: String\n    val origin: String\n    var protocol: String\n    var username: String\n    var password: String\n    var host: String\n    var hostname: String\n    var port: String\n    var pathname: String\n    var search: String\n    var hash: String\n}\n\n/**\n * Exposes the JavaScript [HTMLModElement](https://developer.mozilla.org/en/docs/Web/API/HTMLModElement) to Kotlin\n */\npublic external abstract class HTMLModElement : HTMLInputElement {\n    open var cite: String\n    open var dateTime: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [HTMLPictureElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPictureElement) to Kotlin\n */\npublic external abstract class HTMLPictureElement : HTMLInputElement {\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [HTMLSourceElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSourceElement) to Kotlin\n */\npublic external abstract class HTMLSourceElement : HTMLInputElement {\n    open var src: String\n    open var type: String\n    open var srcset: String\n    open var sizes: String\n    open var media: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [HTMLImageElement](https://developer.mozilla.org/en/docs/Web/API/HTMLImageElement) to Kotlin\n */\npublic external abstract class HTMLImageElement : HTMLInputElement, HTMLORSVGImageElement, TexImageSource {\n    open var alt: String\n    open var src: String\n    open var srcset: String\n    open var sizes: String\n    open var crossOrigin: String?\n    open var useMap: String\n    open var isMap: Boolean\n    open var width: Int\n    open var height: Int\n    open val naturalWidth: Int\n    open val naturalHeight: Int\n    open val complete: Boolean\n    open val currentSrc: String\n    open var referrerPolicy: String\n    open var name: String\n    open var lowsrc: String\n    open var align: String\n    open var hspace: Int\n    open var vspace: Int\n    open var longDesc: String\n}

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open var border: String\n open val x: Int\n open val y: Int\n\n companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }
}\n\n/**\n * Exposes the JavaScript
[HTMLIFrameElement](https://developer.mozilla.org/en/docs/Web/API/HTMLIFrameElement) to Kotlin\n
*\npublic external
abstract class HTMLIFrameElement : HTMLInputElement {\n    open var src: String\n    open var srcdoc: String\n
open var name: String\n    open val sandbox: DOMTokenList\n    open var allowFullscreen: Boolean\n    open var
allowUserMedia: Boolean\n    open var width: String\n    open var height: String\n    open var referrerPolicy:
String\n    open val contentDocument: Document?\n    open val contentWindow: Window?\n    open var align:
String\n    open var scrolling: String\n    open var frameBorder: String\n    open var longDesc: String\n    open var
marginHeight: String\n    open var marginWidth: String\n    fun getSVGDocument(): Document?\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n
        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }
}\n\n/**\n * Exposes the JavaScript
[HTMLEmbedElement](https://developer.mozilla.org/en/docs/Web/API/HTMLEmbedElement) to
Kotlin\n *\npublic external abstract class HTMLEmbedElement : HTMLInputElement {\n    open var src: String\n
open var type: String\n    open var width: String\n    open var height: String\n    open var align: String\n    open var
name: String\n    fun getSVGDocument(): Document?\n\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n
        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }
}\n\n/**\n * Exposes the JavaScript
[HTMLObjectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLObjectElement) to Kotlin\n
*\npublic external abstract class HTMLObjectElement : HTMLInputElement {\n    open var data: String\n    open var
type: String\n    open var typeMustMatch: Boolean\n    open var name: String\n    open var useMap: String\n    open
val form: HTMLFormElement?\n
    open var width: String\n    open var height: String\n    open val contentDocument: Document?\n    open val
contentWindow: Window?\n    open val willValidate: Boolean\n    open val validity: ValidityState\n    open val
validationMessage: String\n    open var align: String\n    open var archive: String\n    open var code: String\n    open

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var declare: Boolean\n  open var hspace: Int\n  open var standby: String\n  open var vspace: Int\n  open var
codeBase: String\n  open var codeType: String\n  open var border: String\n  fun getSVGDocument():
Document?\n  fun checkValidity(): Boolean\n  fun reportValidity(): Boolean\n  fun setCustomValidity(error:
String)\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n   * Exposes the JavaScript
[HTMLParamElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParamElement) to Kotlin\n
   */\n  public external abstract class HTMLParamElement : HTMLElement {\n    open var name: String\n
    open var value: String\n    open var type: String\n    open var valueType: String\n\n    companion object {\n
    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n
    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n   * Exposes the JavaScript
[HTMLVideoElement](https://developer.mozilla.org/en/docs/Web/API/HTMLVideoElement) to Kotlin\n
   */\n  public external abstract class HTMLVideoElement : HTMLMediaElement, CanvasImageSource, TexImageSource {\n
    open var width: Int\n    open var height: Int\n    open val videoWidth: Int\n    open val videoHeight: Int\n
    open var poster: String\n    open var playsInline: Boolean\n\n    companion
object {\n    val NETWORK_EMPTY: Short\n    val NETWORK_IDLE: Short\n    val
NETWORK_LOADING: Short\n    val NETWORK_NO_SOURCE: Short\n    val HAVE_NOTHING: Short\n
    val HAVE_METADATA: Short\n    val HAVE_CURRENT_DATA: Short\n    val
HAVE_FUTURE_DATA: Short\n    val HAVE_ENOUGH_DATA: Short\n    val ELEMENT_NODE: Short\n
    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n
    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n   * Exposes
the JavaScript [HTMLAudioElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAudioElement) to
Kotlin\n   */\n  public external abstract class HTMLAudioElement : HTMLMediaElement {\n    companion object {\n
    val NETWORK_EMPTY: Short\n    val NETWORK_IDLE: Short\n    val NETWORK_LOADING: Short\n
    val NETWORK_NO_SOURCE: Short\n    val HAVE_NOTHING: Short\n    val HAVE_METADATA:
Short\n    val HAVE_CURRENT_DATA: Short\n    val HAVE_FUTURE_DATA: Short\n    val
HAVE_ENOUGH_DATA: Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n

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val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLTrackElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTrackElement) to Kotlin \n */ \n public
external abstract class HTMLTrackElement : HTMLElement { \n    open var kind: String \n    open var src: String \n
open var srclang: String \n    open var label: String \n    open var default: Boolean \n    open val readyState: Short \n
open val track: TextTrack \n \n    companion object { \n        val NONE: Short \n        val LOADING: Short \n        val
LOADED: Short \n        val ERROR: Short \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE:
Short \n
        val TEXT_NODE: Short \n        val CDATA_SECTION_NODE: Short \n        val
ENTITY_REFERENCE_NODE: Short \n        val ENTITY_NODE: Short \n        val
PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE: Short \n        val
DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLMediaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMediaElement) to Kotlin \n
*/ \n public external abstract class HTMLMediaElement : HTMLElement { \n    open val error: MediaError? \n    open
var src: String \n    open var srcObject: MediaProvider? \n    open val currentSrc:
String \n    open var crossOrigin: String? \n    open val networkState: Short \n    open var preload: String \n    open val
buffered: TimeRanges \n    open val readyState: Short \n    open val seeking: Boolean \n    open var currentTime:
Double \n    open val duration: Double \n    open val paused: Boolean \n    open var defaultPlaybackRate: Double \n
open var playbackRate: Double \n    open val played: TimeRanges \n    open val seekable: TimeRanges \n    open val
ended: Boolean \n    open var autoplay: Boolean \n    open var loop: Boolean \n    open var controls: Boolean \n    open
var volume: Double \n    open var muted: Boolean \n    open var defaultMuted: Boolean \n    open val audioTracks:
AudioTrackList \n    open val videoTracks: VideoTrackList \n    open val textTracks: TextTrackList \n    open val
mediaKeys: MediaKeys? \n    open var onencrypted: ((Event) -> dynamic)? \n    open var onwaitingforkey: ((Event) -
> dynamic)? \n    fun load() \n    fun canPlayType(type: String): CanPlayTypeResult \n
    fun fastSeek(time: Double) \n    fun getStartDate(): dynamic \n    fun play(): Promise<Unit> \n    fun pause() \n    fun
addTextTrack(kind: TextTrackKind, label: String = definedExternally, language: String = definedExternally):
TextTrack \n    fun setMediaKeys(mediaKeys: MediaKeys?): Promise<Unit> \n \n    companion object { \n        val
NETWORK_EMPTY: Short \n        val NETWORK_IDLE: Short \n        val NETWORK_LOADING: Short \n
        val NETWORK_NO_SOURCE: Short \n        val HAVE_NOTHING: Short \n        val HAVE_METADATA:
Short \n        val HAVE_CURRENT_DATA: Short \n        val HAVE_FUTURE_DATA: Short \n        val
HAVE_ENOUGH_DATA: Short \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n
        val TEXT_NODE: Short \n        val CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE:
Short \n        val ENTITY_NODE: Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val
COMMENT_NODE: Short \n        val DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE:
Short \n        val DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n

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    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[MediaError](https://developer.mozilla.org/en/docs/Web/API/MediaError) to Kotlin\n *\npublic external abstract
class MediaError {\n    open val code: Short\n\n    companion object {\n        val MEDIA_ERR_ABORTED: Short\n
        val MEDIA_ERR_NETWORK: Short\n        val MEDIA_ERR_DECODE: Short\n        val
MEDIA_ERR_SRC_NOT_SUPPORTED: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[AudioTrackList](https://developer.mozilla.org/en/docs/Web/API/AudioTrackList) to Kotlin\n *\npublic external
abstract class AudioTrackList : EventTarget {\n    open val
length: Int\n    open var onchange: ((Event) -> dynamic)?\n    open var onaddtrack: ((TrackEvent) -> dynamic)?\n
open var onremovetrack: ((TrackEvent) -> dynamic)?\n    fun getTrackById(id: String):
AudioTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun AudioTrackList.get(index:
Int): AudioTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[AudioTrack](https://developer.mozilla.org/en/docs/Web/API/AudioTrack) to Kotlin\n *\npublic external abstract
class AudioTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n    open val id: String\n    open val kind:
String\n    open val label: String\n    open val language: String\n    open var enabled: Boolean\n    open val
sourceBuffer: SourceBuffer?\n}\n\n/**\n * Exposes the JavaScript
[VideoTrackList](https://developer.mozilla.org/en/docs/Web/API/VideoTrackList) to Kotlin\n *\npublic external
abstract class VideoTrackList : EventTarget {\n    open val length:
Int\n    open val selectedIndex: Int\n    open var onchange: ((Event) -> dynamic)?\n    open var onaddtrack:
((TrackEvent) -> dynamic)?\n    open var onremovetrack: ((TrackEvent) -> dynamic)?\n    fun getTrackById(id:
String): VideoTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun VideoTrackList.get(index:
Int): VideoTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[VideoTrack](https://developer.mozilla.org/en/docs/Web/API/VideoTrack) to Kotlin\n *\npublic external abstract
class VideoTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n    open val id: String\n    open val kind:
String\n    open val label: String\n    open val language: String\n    open var selected: Boolean\n    open val
sourceBuffer: SourceBuffer?\n}\n\npublic external abstract class TextTrackList : EventTarget {\n    open val length:
Int\n    open var onchange: ((Event) -> dynamic)?\n    open var onaddtrack: ((TrackEvent) ->
dynamic)?\n    open var onremovetrack: ((TrackEvent) -> dynamic)?\n    fun getTrackById(id: String):
TextTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun TextTrackList.get(index: Int):
TextTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[TextTrack](https://developer.mozilla.org/en/docs/Web/API/TextTrack) to Kotlin\n *\npublic external abstract
class TextTrack : EventTarget, UnionAudioTrackOrTextTrackOrVideoTrack {\n    open val kind: TextTrackKind\n
open val label: String\n    open val language: String\n    open val id: String\n    open val
inBandMetadataTrackDispatchType: String\n    open var mode: TextTrackMode\n    open val cues:
TextTrackCueList?\n    open val activeCues: TextTrackCueList?\n    open var oncuechange: ((Event) ->
dynamic)?\n    open val sourceBuffer: SourceBuffer?\n    fun addCue(cue: TextTrackCue)\n    fun removeCue(cue:
TextTrackCue)\n}\n\npublic external abstract class
TextTrackCueList {\n    open val length: Int\n    fun getCueById(id: String):
TextTrackCue?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun TextTrackCueList.get(index:
Int): TextTrackCue? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[TextTrackCue](https://developer.mozilla.org/en/docs/Web/API/TextTrackCue) to Kotlin\n *\npublic external
abstract class TextTrackCue : EventTarget {\n    open val track: TextTrack?\n    open var id: String\n    open var
startTime: Double\n    open var endTime: Double\n    open var pauseOnExit: Boolean\n    open var onenter: ((Event)
-> dynamic)?\n    open var onexit: ((Event) -> dynamic)?\n}\n\n/**\n * Exposes the JavaScript

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[TimeRanges](https://developer.mozilla.org/en/docs/Web/API/TimeRanges) to Kotlin\n *^\\npublic external abstract class TimeRanges {\n open val length: Int\n fun start(index: Int): Double\n fun end(index: Int): Double\n}\n\n/**\n * Exposes the JavaScript

[TrackEvent](https://developer.mozilla.org/en/docs/Web/API/TrackEvent) to Kotlin\n *^\\npublic external open class TrackEvent(type: String, eventInitDict: TrackEventInit = definedExternally) : Event {\n open val track: UnionAudioTrackOrTextTrackOrVideoTrack?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n}\n}\n\npublic external interface TrackEventInit : EventInit {\n var track: UnionAudioTrackOrTextTrackOrVideoTrack? /* = null */\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun TrackEventInit(track: UnionAudioTrackOrTextTrackOrVideoTrack? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): TrackEventInit {\n val o = js(\"({})\")\n o[\"track\"] = track\n o[\"bubbles\"] = bubbles\n\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript

[HTMLMapElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMapElement) to Kotlin\n *^\\npublic external abstract class HTMLMapElement : HTMLInputElement {\n open var name: String\n open val areas: HTMLCollection\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

[HTMLAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAreaElement) to Kotlin\n *^\\npublic external abstract class HTMLAreaElement : HTMLInputElement, HTMLHyperlinkElementUtils {\n open var alt: String\n open var coords: String\n open var shape: String\n open var target: String\n open var download: String\n open var ping: String\n open var rel: String\n open val relList: DOMTokenList\n open var referrerPolicy: String\n open var noHref: Boolean\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

[HTMLTableElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableElement) to Kotlin\n *^\\npublic external abstract class HTMLTableElement : HTMLTableCaptionElement?\n open var tHead: HTMLTableSectionElement?\n open var tFoot: HTMLTableSectionElement?\n open val tBodies: HTMLCollection\n open val rows: HTMLCollection\n open var align: String\n open var border: String\n open var frame: String\n open var rules: String\n open var summary: String\n open var width:

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String\n open var bgColor: String\n open var cellPadding: String\n open var cellSpacing: String\n fun
createCaption(): HTMLTableCaptionElement\n fun deleteCaption()\n fun createTHead():
HTMLTableSectionElement\n fun deleteTHead()\n fun createTFoot(): HTMLTableSectionElement\n fun
deleteTFoot()\n fun createTBody(): HTMLTableSectionElement\n fun insertRow(index: Int =
definedExternally): HTMLTableRowElement\n fun deleteRow(index: Int)\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING:
Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes the JavaScript
[HTMLTableCaptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCaptionElement) to
Kotlin\n */\npublic external abstract class HTMLTableCaptionElement : HTMLElement {\n open var align:
String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED:
Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val
DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes the JavaScript
[HTMLTableColElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableColElement) to Kotlin\n
*/\npublic external abstract class HTMLTableColElement : HTMLElement {\n open var span: Int\n open var
align: String\n open var ch: String\n open var chOff: String\n open var vAlign: String\n open var width:
String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE:
Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n
val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes
the JavaScript
[HTMLTableSectionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableSectionElement) to
Kotlin\n */\npublic external abstract class HTMLTableSectionElement : HTMLElement {\n open val rows:
HTMLCollection\n open var align: String\n open var ch: String\n open var chOff: String\n open var vAlign:
String\n fun insertRow(index: Int = definedExternally): HTMLElement\n fun deleteRow(index: Int)\n\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val

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DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableRowElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableRowElement) to Kotlin\n
*\npublic external abstract class HTMLTableRowElement : HTMLInputElement {\n    open val rowIndex: Int\n    open
val sectionRowIndex: Int\n    open val cells: HTMLCollection\n    open
    var align: String\n    open var ch: String\n    open var chOff: String\n    open var vAlign: String\n    open var
bgColor: String\n    fun insertCell(index: Int = definedExternally): HTMLInputElement\n    fun deleteCell(index: Int)\n\n
    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableCellElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCellElement) to Kotlin\n
*\npublic external abstract class HTMLTableCellElement : HTMLInputElement {\n    open var colSpan: Int\n    open var
rowSpan: Int\n    open var headers: String\n    open val cellIndex: Int\n    open var scope: String\n    open var abbr:
String\n    open var align: String\n    open var axis: String\n    open var height: String\n    open var width: String\n
    open var ch: String\n    open var chOff: String\n    open var noWrap: Boolean\n    open var vAlign: String\n    open
var bgColor: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n
        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLFormElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFormElement) to
Kotlin\n
*\npublic external abstract class HTMLFormElement : HTMLInputElement {\n    open var acceptCharset:
String\n    open var action: String\n    open var autocomplete: String\n    open var enctype: String\n    open var
encoding: String\n    open var method: String\n    open var name: String\n    open var noValidate: Boolean\n    open
var target: String\n    open val elements: HTMLFormControlsCollection\n    open val length: Int\n    fun submit()\n
    fun reset()\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n

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    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLFormElement.get(index:
Int): Element? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLFormElement.get(name: String): UnionElementOrRadioNodeList? = asDynamic()[name]\n\n/**\n * Exposes
the JavaScript [HTMLLabelElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLabelElement) to
Kotlin\n */\npublic external abstract class HTMLLabelElement : HTMLElement {\n    open val form:
HTMLFormElement?\n    open var htmlFor: String\n    open val control: HTMLFormElement?\n\n    companion object
{\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n
        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLInputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLInputElement) to
Kotlin\n */\npublic external abstract class HTMLInputElement : HTMLFormElement {\n    open var accept: String\n
open var alt: String\n    open var autocomplete: String\n    open var autofocus: Boolean\n    open var
defaultChecked: Boolean\n    open var checked: Boolean\n    open var dirName: String\n    open var disabled:
Boolean\n    open val form: HTMLFormElement?\n    open val files: FileList?\n    open var formAction: String\n
open var formEnctype: String\n    open var formMethod: String\n    open var formNoValidate: Boolean\n
open var formTarget: String\n    open var height: Int\n    open var indeterminate: Boolean\n    open var inputMode:
String\n    open val list: HTMLFormElement?\n    open var max: String\n    open var maxLength: Int\n    open var min:
String\n    open var minLength: Int\n    open var multiple: Boolean\n    open var name: String\n    open var pattern:
String\n    open var placeholder: String\n    open var readOnly: Boolean\n    open var required: Boolean\n    open var
size: Int\n    open var src: String\n    open var step: String\n    open var type: String\n    open var defaultValue:
String\n    open var value: String\n    open var valueAsDate: dynamic\n    open var valueAsNumber: Double\n
open var width: Int\n    open val willValidate: Boolean\n    open val validity: ValidityState\n    open val
validationMessage: String\n    open val labels: NodeList\n    open var selectionStart: Int?\n    open var selectionEnd:
Int?\n    open var selectionDirection: String?\n    open var align: String\n
open var useMap: String\n    fun stepUp(n: Int = definedExternally)\n    fun stepDown(n: Int =
definedExternally)\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun
setCustomValidity(error: String)\n    fun select()\n    fun setRangeText(replacement: String)\n    fun
setRangeText(replacement: String, start: Int, end: Int, selectionMode: SelectionMode = definedExternally)\n    fun
setSelectionRange(start: Int, end: Int, direction: String = definedExternally)\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED:

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Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n/**\n * Exposes the JavaScript
[HTMLButtonElement](https://developer.mozilla.org/en/docs/Web/API/HTMLButtonElement) to Kotlin\n
*\npublic external abstract class HTMLButtonElement : HTMLElement {\n    open var autofocus: Boolean\n
open var disabled: Boolean\n    open val form: HTMLFormElement?\n    open var formAction: String\n    open var
formEnctype: String\n    open var formMethod: String\n    open var formNoValidate: Boolean\n    open var
formTarget: String\n    open var name: String\n    open var type: String\n    open var value: String\n    open var
menu: HTMLMenuElement?\n    open val willValidate: Boolean\n    open val validity: ValidityState\n    open val
validationMessage: String\n    open val labels:
NodeList\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun setCustomValidity(error:
String)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n/**\n * Exposes the JavaScript
[HTMLSelectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSelectElement)
to Kotlin\n * \npublic external abstract class HTMLSelectElement : HTMLElement, ItemArrayLike<Element> {\n
open var autocomplete: String\n    open var autofocus: Boolean\n    open var disabled: Boolean\n    open val form:
HTMLFormElement?\n    open var multiple: Boolean\n    open var name: String\n    open var required: Boolean\n
open var size: Int\n    open val type: String\n    open val options: HTMLOptionsCollection\n    override var length:
Int\n    open val selectedOptions: HTMLCollection\n    open var selectedIndex: Int\n    open var value: String\n
open val willValidate: Boolean\n    open val validity: ValidityState\n    open val validationMessage: String\n    open
val labels: NodeList\n    fun namedItem(name: String): HTMLOptionElement?\n    fun add(element:
UnionHTMLOptGroupElementOrHTMLOptionElement, before: dynamic = definedExternally)\n    fun
remove(index: Int)\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n
fun setCustomValidity(error: String)\n    override fun item(index: Int): Element?\n\n    companion object {\n
val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLSelectElement.get(index:
Int): Element? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLSelectElement.set(index: Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n/**\n *
Exposes the JavaScript

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[HTMLDataListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataListElement) to Kotlin
*\npublic external abstract class HTMLDataListElement : HTMLInputElement {
    open val options:
HTMLCollection\n\n    companion object {\n        val ELEMENT_NODE: Short\n            val ATTRIBUTE_NODE:
Short\n            val TEXT_NODE: Short\n            val CDATA_SECTION_NODE: Short\n            val
ENTITY_REFERENCE_NODE: Short\n            val ENTITY_NODE: Short\n            val
PROCESSING_INSTRUCTION_NODE: Short\n            val COMMENT_NODE: Short\n            val
DOCUMENT_NODE: Short\n            val DOCUMENT_TYPE_NODE: Short\n            val
DOCUMENT_FRAGMENT_NODE: Short\n            val NOTATION_NODE: Short\n            val
DOCUMENT_POSITION_DISCONNECTED:
Short\n            val DOCUMENT_POSITION_PRECEDING: Short\n            val
DOCUMENT_POSITION_FOLLOWING: Short\n            val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n            val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptGroupElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptGroupElement) to Kotlin
*\npublic external abstract class HTMLOptGroupElement : HTMLInputElement,
UnionHTMLOptGroupElementOrHTMLOptionElement {\n    open var disabled: Boolean\n    open var label:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n            val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n            val CDATA_SECTION_NODE: Short\n            val ENTITY_REFERENCE_NODE:
Short\n            val ENTITY_NODE: Short\n            val PROCESSING_INSTRUCTION_NODE: Short\n            val
COMMENT_NODE: Short\n            val DOCUMENT_NODE: Short\n            val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n            val NOTATION_NODE: Short\n            val
DOCUMENT_POSITION_DISCONNECTED: Short\n            val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n            val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n            val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionElement) to Kotlin
*\npublic external abstract class HTMLOptionElement : HTMLInputElement,
UnionHTMLOptGroupElementOrHTMLOptionElement {\n    open var disabled: Boolean\n    open val form:
HTMLFormElement?\n    open var label: String\n    open var defaultSelected: Boolean\n    open var selected:
Boolean\n    open var value: String\n    open var text: String\n    open val index: Int\n\n    companion object {\n
val ELEMENT_NODE: Short\n            val ATTRIBUTE_NODE: Short\n            val TEXT_NODE: Short\n
            val CDATA_SECTION_NODE: Short\n            val ENTITY_REFERENCE_NODE: Short\n            val
ENTITY_NODE: Short\n            val PROCESSING_INSTRUCTION_NODE: Short\n            val COMMENT_NODE:
Short\n            val DOCUMENT_NODE: Short\n            val DOCUMENT_TYPE_NODE: Short\n            val
DOCUMENT_FRAGMENT_NODE: Short\n            val NOTATION_NODE: Short\n            val
DOCUMENT_POSITION_DISCONNECTED: Short\n            val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n            val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n            val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTextAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTextAreaElement) to Kotlin
*\npublic external abstract class HTMLTextAreaElement : HTMLInputElement {\n    open var autocomplete: String\n
open var autofocus: Boolean\n    open var cols: Int\n    open var dirName: String\n    open
var disabled: Boolean\n    open val form: HTMLFormElement?\n    open var inputMode: String\n    open var
maxLength: Int\n    open var minLength: Int\n    open var name: String\n    open var placeholder: String\n    open var
readOnly: Boolean\n    open var required: Boolean\n    open var rows: Int\n    open var wrap: String\n    open val
type: String\n    open var defaultValue: String\n    open var value: String\n    open val maxLength: Int\n    open val
willValidate: Boolean\n    open val validity: ValidityState\n    open val validationMessage: String\n    open val

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labels: NodeList\n  open var selectionStart: Int?\n  open var selectionEnd: Int?\n  open var selectionDirection:
String?\n  fun checkValidity(): Boolean\n  fun reportValidity(): Boolean\n  fun setCustomValidity(error:
String)\n  fun select()\n  fun setRangeText(replacement: String)\n  fun setRangeText(replacement: String, start:
Int, end: Int, selectionMode: SelectionMode = definedExternally)\n  fun setSelectionRange(start:
Int, end: Int, direction: String = definedExternally)\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLKeygenElement](https://developer.mozilla.org/en/docs/Web/API/HTMLKeygenElement) to Kotlin\n
*\npublic
external abstract class HTMLKeygenElement : HTMLInputElement {\n  open var autofocus: Boolean\n  open var
challenge: String\n  open var disabled: Boolean\n  open val form: HTMLFormElement?\n  open var keytype:
String\n  open var name: String\n  open val type: String\n  open val willValidate: Boolean\n  open val validity:
ValidityState\n  open val validationMessage: String\n  open val labels: NodeList\n  fun checkValidity():
Boolean\n  fun reportValidity(): Boolean\n  fun setCustomValidity(error: String)\n\n  companion object {\n
    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n
    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the
JavaScript [HTMLOutputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOutputElement) to
Kotlin\n
*\npublic external abstract class HTMLOutputElement : HTMLInputElement {\n  open val htmlFor:
DOMTokenList\n  open val form: HTMLFormElement?\n  open var name: String\n  open val type: String\n
open var defaultValue: String\n  open var value: String\n  open val willValidate: Boolean\n  open val validity:
ValidityState\n  open val validationMessage: String\n  open val labels: NodeList\n  fun checkValidity():
Boolean\n  fun reportValidity(): Boolean\n  fun setCustomValidity(error: String)\n\n  companion object {\n
    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n
    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLProgressElement](https://developer.mozilla.org/en/docs/Web/API/HTMLProgressElement) to Kotlin\n
*\npublic external abstract class HTMLProgressElement : HTMLInputElement {\n  open var value: Double\n  open
var max:

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Double\n    open val position: Double\n    open val labels: NodeList\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n\n/**\n * Exposes the JavaScript
[HTMLMeterElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMeterElement) to Kotlin\n
*\npublic external
abstract class HTMLMeterElement : HTMLElement {\n    open var value: Double\n    open var min: Double\n
open var max: Double\n    open var low: Double\n    open var high: Double\n    open var optimum: Double\n    open
val labels: NodeList\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n\n/**\n * Exposes the JavaScript
[HTMLFieldSetElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFieldSetElement) to Kotlin\n
*\npublic external abstract class HTMLFieldSetElement : HTMLElement {\n    open var disabled: Boolean\n
open val form: HTMLFormElement?\n    open var name: String\n    open val type: String\n    open val elements:
HTMLCollection\n    open val willValidate: Boolean\n    open val validity: ValidityState\n    open val
validationMessage: String\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun
setCustomValidity(error: String)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n\n/**\n * Exposes the JavaScript
[HTMLLegendElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLegendElement) to Kotlin\n
*\npublic external abstract class HTMLLegendElement : HTMLElement {\n    open val form:
HTMLFormElement?\n    open var align: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n
        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val

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DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[ValidityState](https://developer.mozilla.org/en/docs/Web/API/ValidityState) to Kotlin\n *\npublic external
abstract class ValidityState {\n    open val valueMissing: Boolean\n    open val typeMismatch: Boolean\n    open val
patternMismatch: Boolean\n    open val tooLong: Boolean\n    open val tooShort: Boolean\n    open val
rangeUnderflow: Boolean\n    open val rangeOverflow: Boolean\n    open val stepMismatch: Boolean\n    open val
badInput: Boolean\n    open val customError: Boolean\n    open val
    valid: Boolean\n}\n\n/**\n * Exposes the JavaScript
[HTMLDetailsElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDetailsElement) to Kotlin\n
*\npublic external abstract class HTMLDetailsElement : HTMLElement {\n    open var open: Boolean\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n}\n\npublic external abstract class HTMLMenuElement : HTMLElement {\n    open var type: String\n
    open var label: String\n    open var compact: Boolean\n\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract
class HTMLMenuItemElement : HTMLElement {\n    open var type: String\n    open var label: String\n    open var
icon: String\n    open var disabled: Boolean\n    open var checked: Boolean\n    open var radiogroup: String\n
    open var default: Boolean\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n}\n\npublic external open class RelatedEvent(type: String, eventInitDict: RelatedEventInit =
definedExternally) : Event {\n    open val relatedTarget: EventTarget?\n\n    companion object {\n        val NONE:
Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE:
Short\n    }\n}\n\npublic external interface RelatedEventInit : EventInit {\n    var relatedTarget: EventTarget? /* =

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null */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun RelatedEventInit(relatedTarget:
EventTarget? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
RelatedEventInit {\n    val o = js(\"({})\")\n    o[\"relatedTarget\"] = relatedTarget\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[HTMLDialogElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDialogElement) to Kotlin\n
*/\npublic external abstract class HTMLDialogElement : HTMLElement {\n    open var open: Boolean\n    open var
returnValue: String\n    fun show(anchor: UnionElementOrMouseEvent = definedExternally)\n    fun
showModal(anchor: UnionElementOrMouseEvent = definedExternally)\n    fun close(returnValue: String =
definedExternally)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING:
Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val
DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [HTMLScriptElement](https://developer.mozilla.org/en/docs/Web/API/HTMLScriptElement) to Kotlin\n
*/\npublic external abstract class HTMLScriptElement : HTMLElement, HTMLOrSVGScriptElement {\n    open
var src: String\n    open var type: String\n    open var charset: String\n    open var async: Boolean\n    open var defer:
Boolean\n    open var crossOrigin: String?\n    open var text: String\n    open var nonce: String\n    open var event:
String\n    open var htmlFor: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n
        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTemplateElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTemplateElement) to Kotlin\n
*/\npublic external abstract class HTMLTemplateElement : HTMLElement {\n    open val content:
DocumentFragment\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSlotElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSlotElement) to Kotlin\n
*/\npublic

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external abstract class HTMLSlotElement : HTMLElement {
    open var name: String
    fun assignedNodes(options: AssignedNodesOptions = definedExternally): Array<Node>
}
companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

public external interface AssignedNodesOptions {
    var flatten: Boolean? /* = false */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun AssignedNodesOptions(flatten: Boolean? = false): AssignedNodesOptions {
    o["flatten"] = flatten
    return o
}

/** Exposes the JavaScript [HTMLCanvasElement](https://developer.mozilla.org/en/docs/Web/API/HTMLCanvasElement) to Kotlin */
public external abstract class HTMLCanvasElement : HTMLElement, CanvasImageSource, TexImageSource {
    open var width: Int
    open var height: Int
    fun getContext(contextId: String, vararg arguments: Any?): RenderingContext?
    fun toDataURL(type: String = definedExternally, quality: Any? = definedExternally): String
    fun toBlob(_callback: (Blob?) -> Unit, type: String = definedExternally, quality: Any? = definedExternally)
}

companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

public external interface CanvasRenderingContext2DSettings {
    var alpha: Boolean? /* = true */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun CanvasRenderingContext2DSettings(alpha: Boolean? = true): CanvasRenderingContext2DSettings {
    o["alpha"] = alpha
    return o
}

/** Exposes the JavaScript [CanvasRenderingContext2D](https://developer.mozilla.org/en/docs/Web/API/CanvasRenderingContext2D) to Kotlin */
public external abstract class CanvasRenderingContext2D : CanvasState, CanvasTransform, CanvasCompositing, CanvasImageSmoothing, CanvasFillStrokeStyles, CanvasShadowStyles, CanvasFilters, CanvasRect, CanvasDrawPath, CanvasUserInterface, CanvasText, CanvasDrawImage, CanvasHitRegion, CanvasImageData, CanvasPathDrawingStyles, CanvasTextDrawingStyles, CanvasPath, RenderingContext {
    open val canvas: HTMLCanvasElement
}

public external interface CanvasState {
    fun save()
    fun restore()
}

public external interface CanvasTransform {
    fun scale(x: Double, y: Double)
    fun rotate(angle: Double)
    fun translate(x: Double, y: Double)
    fun transform(a: Double, b: Double, c: Double, d: Double, e: Double, f: Double)
    fun getTransform(): DOMMatrix
    fun setTransform(a: Double, b: Double, c: Double, d: Double, e: Double, f: Double)
    fun setTransform(transform: dynamic = definedExternally)
    fun resetTransform()
}

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external interface CanvasCompositing {\n  var globalAlpha: Double\n  var globalCompositeOperation:
String\n}\n\npublic external interface CanvasImageSmoothing {\n  var imageSmoothingEnabled: Boolean\n  var
imageSmoothingQuality: ImageSmoothingQuality\n}\n\npublic external interface CanvasFillStrokeStyles {\n  var
strokeStyle: dynamic\n  get() = definedExternally\n  set(value) = definedExternally\n  var fillStyle:
dynamic\n  get() = definedExternally\n  set(value) = definedExternally\n  fun createLinearGradient(x0:
Double, y0: Double, x1: Double, y1: Double): CanvasGradient\n  fun createRadialGradient(x0: Double, y0:
Double, r0: Double, x1: Double, y1: Double, r1: Double): CanvasGradient\n  fun createPattern(image:
CanvasImageSource, repetition: String): CanvasPattern?\n}\n\npublic external interface CanvasShadowStyles {\n
var shadowOffsetX: Double\n  var shadowOffsetY: Double\n  var shadowBlur: Double\n  var shadowColor:
String\n}\n\npublic external interface CanvasFilters {\n  var filter: String\n}\n\npublic external interface
CanvasRect {\n  fun clearRect(x: Double, y: Double, w: Double, h: Double)\n  fun fillRect(x: Double, y: Double,
w: Double, h: Double)\n  fun strokeRect(x: Double, y: Double, w: Double, h: Double)\n}\n\npublic external
interface CanvasDrawPath {\n  fun beginPath()\n  fun fill(fillRule: CanvasFillRule = definedExternally)\n  fun
fill(path: Path2D, fillRule: CanvasFillRule = definedExternally)\n  fun stroke()\n  fun stroke(path: Path2D)\n
fun clip(fillRule: CanvasFillRule = definedExternally)\n  fun clip(path: Path2D, fillRule: CanvasFillRule =
definedExternally)\n  fun resetClip()\n  fun isPointInPath(x: Double, y: Double, fillRule: CanvasFillRule =
definedExternally): Boolean\n  fun isPointInPath(path: Path2D, x: Double, y: Double, fillRule: CanvasFillRule =
definedExternally): Boolean\n  fun isPointInStroke(x: Double, y: Double): Boolean\n
fun isPointInStroke(path: Path2D, x: Double, y: Double): Boolean\n}\n\npublic external interface
CanvasUserInterface {\n  fun drawFocusIfNeeded(element: Element)\n  fun drawFocusIfNeeded(path: Path2D,
element: Element)\n  fun scrollPathIntoView()\n  fun scrollPathIntoView(path: Path2D)\n}\n\npublic external
interface CanvasText {\n  fun fillText(text: String, x: Double, y: Double, maxWidth: Double =
definedExternally)\n  fun strokeText(text: String, x: Double, y: Double, maxWidth: Double = definedExternally)\n
fun measureText(text: String): TextMetrics\n}\n\npublic external interface CanvasDrawImage {\n  fun
drawImage(image: CanvasImageSource, dx: Double, dy: Double)\n  fun drawImage(image: CanvasImageSource,
dx: Double, dy: Double, dw: Double, dh: Double)\n  fun drawImage(image: CanvasImageSource, sx: Double, sy:
Double, sw: Double, sh: Double, dx: Double, dy: Double, dw: Double, dh: Double)\n}\n\npublic external interface
CanvasHitRegion {\n  fun addHitRegion(options:
HitRegionOptions = definedExternally)\n  fun removeHitRegion(id: String)\n  fun
clearHitRegions()\n}\n\npublic external interface CanvasImageData {\n  fun createImageData(sw: Double, sh:
Double): ImageData\n  fun createImageData(imagedata: ImageData): ImageData\n  fun getImageData(sx:
Double, sy: Double, sw: Double, sh: Double): ImageData\n  fun putImageData(imagedata: ImageData, dx: Double,
dy: Double)\n  fun putImageData(imagedata: ImageData, dx: Double, dy: Double, dirtyX: Double, dirtyY: Double,
dirtyWidth: Double, dirtyHeight: Double)\n}\n\npublic external interface CanvasPathDrawingStyles {\n  var
lineWidth: Double\n  var lineCap: CanvasLineCap\n  var lineJoin: CanvasLineJoin\n  var miterLimit: Double\n
var lineDashOffset: Double\n  fun setLineDash(segments: Array<Double>)\n  fun getLineDash():
Array<Double>\n}\n\npublic external interface CanvasTextDrawingStyles {\n  var font: String\n  var textAlign:
CanvasTextAlign\n  var textBaseline:
CanvasTextBaseline\n  var direction: CanvasDirection\n}\n\npublic external interface CanvasPath {\n  fun
closePath()\n  fun moveTo(x: Double, y: Double)\n  fun lineTo(x: Double, y: Double)\n  fun
quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n  fun bezierCurveTo(cp1x: Double, cp1y:
Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n  fun arcTo(x1: Double, y1: Double, x2: Double, y2:
Double, radius: Double)\n  fun arcTo(x1: Double, y1: Double, x2: Double, y2: Double, radiusX: Double, radiusY:
Double, rotation: Double)\n  fun rect(x: Double, y: Double, w: Double, h: Double)\n  fun arc(x: Double, y:
Double, radius: Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean = definedExternally)\n
fun ellipse(x: Double, y: Double, radiusX: Double, radiusY: Double, rotation: Double, startAngle: Double,
endAngle: Double, anticlockwise: Boolean = definedExternally)\n}\n\n**\n * Exposes the JavaScript
[CanvasGradient](https://developer.mozilla.org/en/docs/Web/API/CanvasGradient)

```

```

to Kotlin\n *\npublic external abstract class CanvasGradient {\n fun addColorStop(offset: Double, color:
String)\n}\n\n/**\n * Exposes the JavaScript
[CanvasPattern](https://developer.mozilla.org/en/docs/Web/API/CanvasPattern) to Kotlin\n *\npublic external
abstract class CanvasPattern {\n fun setTransform(transform: dynamic = definedExternally)\n}\n\n/**\n * Exposes
the JavaScript [TextMetrics](https://developer.mozilla.org/en/docs/Web/API/TextMetrics) to Kotlin\n *\npublic
external abstract class TextMetrics {\n open val width: Double\n open val actualBoundingBoxLeft: Double\n
open val actualBoundingBoxRight: Double\n open val fontBoundingBoxAscent: Double\n open val
fontBoundingBoxDescent: Double\n open val actualBoundingBoxAscent: Double\n open val
actualBoundingBoxDescent: Double\n open val emHeightAscent: Double\n open val emHeightDescent:
Double\n open val hangingBaseline: Double\n open val
alphabeticBaseline: Double\n open val ideographicBaseline: Double\n}\n\npublic external interface
HitRegionOptions {\n var path: Path2D? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var fillRule: CanvasFillRule? /* = CanvasFillRule.NONZERO */\n get() =
definedExternally\n set(value) = definedExternally\n var id: String? /* = \"\" */\n get() =
definedExternally\n set(value) = definedExternally\n var parentID: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var cursor: String? /* = \"inherit\" */\n get() =
definedExternally\n set(value) = definedExternally\n var control: Element? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var label: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var role: String? /* = null */\n get() =
definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun HitRegionOptions(path: Path2D? =
null, fillRule: CanvasFillRule? = CanvasFillRule.NONZERO, id: String? = \"\", parentID: String? = null, cursor:
String? = \"inherit\", control: Element? = null, label: String? = null, role: String? = null): HitRegionOptions {\n val
o = js(\"{\}\")\n o[\"path\"] = path\n o[\"fillRule\"] = fillRule\n o[\"id\"] = id\n o[\"parentID\"] = parentID\n
o[\"cursor\"] = cursor\n o[\"control\"] = control\n o[\"label\"] = label\n o[\"role\"] = role\n return
o\n}\n\n/**\n * Exposes the JavaScript [ImageData](https://developer.mozilla.org/en/docs/Web/API/ImageData) to
Kotlin\n *\npublic external open class ImageData : ImageBitmapSource, TexImageSource {\n constructor(sw:
Int, sh: Int)\n constructor(data: Uint8ClampedArray, sw: Int, sh: Int = definedExternally)\n open
val width: Int\n open val height: Int\n open val data: Uint8ClampedArray\n}\n\n/**\n * Exposes the JavaScript
[Path2D](https://developer.mozilla.org/en/docs/Web/API/Path2D) to Kotlin\n *\npublic external open class
Path2D() : CanvasPath {\n constructor(path: Path2D)\n constructor(paths: Array<Path2D>, fillRule:
CanvasFillRule = definedExternally)\n constructor(d: String)\n fun addPath(path: Path2D, transform: dynamic =
definedExternally)\n override fun closePath()\n override fun moveTo(x: Double, y: Double)\n override fun
lineTo(x: Double, y: Double)\n override fun quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n
override fun bezierCurveTo(cp1x: Double, cp1y: Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n
override fun arcTo(x1: Double, y1: Double, x2: Double, y2: Double, radius: Double)\n override fun arcTo(x1:
Double, y1: Double, x2: Double, y2: Double, radiusX: Double, radiusY: Double, rotation: Double)\n override
fun rect(x: Double, y: Double, w: Double, h: Double)\n override fun arc(x: Double, y: Double, radius: Double,
startAngle: Double, endAngle: Double, anticlockwise: Boolean /* = definedExternally */)\n override fun ellipse(x:
Double, y: Double, radiusX: Double, radiusY: Double, rotation: Double, startAngle: Double, endAngle: Double,
anticlockwise: Boolean /* = definedExternally */)\n}\n\n/**\n * Exposes the JavaScript
[ImageBitmapRenderingContext](https://developer.mozilla.org/en/docs/Web/API/ImageBitmapRenderingContext)
to Kotlin\n *\npublic external abstract class ImageBitmapRenderingContext {\n open val canvas:
HTMLCanvasElement\n fun transferFromImageBitmap(bitmap: ImageBitmap?)\n}\n\npublic external interface
ImageBitmapRenderingContextSettings {\n var alpha: Boolean? /* = true */\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline

```



```

fun ImageBitmapRenderingContextSettings(alpha: Boolean? = true): ImageBitmapRenderingContextSettings {
    val o = js("{}")
    o["alpha"] = alpha
    return o
}
// Exposes the JavaScript
[CustomElementRegistry](https://developer.mozilla.org/en/docs/Web/API/CustomElementRegistry) to Kotlin
// public external abstract class CustomElementRegistry {
    fun define(name: String, constructor: () -> dynamic,
options: ElementDefinitionOptions = definedExternally)
    fun get(name: String): Any?
    fun
whenDefined(name: String): Promise<Unit>
}
// public external interface ElementDefinitionOptions {
    var
extends: String?
    get() = definedExternally
    set(value) =
definedExternally
}
// @Suppress("INVISIBLE_REFERENCE",
// "INVISIBLE_MEMBER")
// @kotlin.internal.InlineOnly
// public inline fun ElementDefinitionOptions(extends:
String? = undefined): ElementDefinitionOptions {
    val o = js("{}")
    o["extends"] = extends
    return
o
}
// public
external interface ElementContentEditable {
    var contentEditable: String
    val isContentEditable:
Boolean
}
// Exposes the JavaScript
[DataTransfer](https://developer.mozilla.org/en/docs/Web/API/DataTransfer) to Kotlin
// public external
abstract class DataTransfer {
    open var dropEffect: String
    open var effectAllowed: String
    open val items:
DataTransferItemList
    open val types: Array<out String>
    open val files: FileList
    fun
setDragImage(image: Element, x: Int, y: Int)
    fun getData(format: String): String
    fun setData(format: String,
data: String)
    fun clearData(format: String = definedExternally)
}
// Exposes the JavaScript
[DataTransferItemList](https://developer.mozilla.org/en/docs/Web/API/DataTransferItemList) to Kotlin
// public
external abstract class DataTransferItemList {
    open val length: Int
    fun add(data: String, type: String):
DataTransferItem?
    fun add(data: File): DataTransferItem?
    fun remove(index: Int)
    fun clear()
}
// @Suppress("INVISIBLE_REFERENCE",
// "INVISIBLE_MEMBER")
// @kotlin.internal.InlineOnly
// public inline operator fun
DataTransferItemList.get(index: Int): DataTransferItem? = asDynamic()[index]
// Exposes the JavaScript
[DataTransferItem](https://developer.mozilla.org/en/docs/Web/API/DataTransferItem) to Kotlin
// public
external abstract class DataTransferItem {
    open val kind: String
    open val type: String
    fun
getAsString(_callback: ((String) -> Unit)?): String?
    fun getAsFile(): File?
}
// Exposes the JavaScript
[DragEvent](https://developer.mozilla.org/en/docs/Web/API/TouchEvent) to Kotlin
// public external open class
DragEvent(type: String, eventInitDict: DragEventInit = definedExternally) : MouseEvent {
    open val
dataTransfer: DataTransfer?
}
// companion object {
    val NONE: Short
    val CAPTURING_PHASE:
Short
    val AT_TARGET: Short
    val BUBBLING_PHASE: Short
}
// public
external interface DragEventInit : MouseEventInit {
    var dataTransfer: DataTransfer? /* = null */
    get() =
definedExternally
    set(value) = definedExternally
}
// @Suppress("INVISIBLE_REFERENCE",
// "INVISIBLE_MEMBER")
// @kotlin.internal.InlineOnly
// public inline fun DragEventInit(dataTransfer:
DataTransfer? = null, screenX: Int? = 0, screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0,
buttons: Short? = 0, relatedTarget: EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false,
modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail:
Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): DragEventInit {
    val o = js("{}")
    o["dataTransfer"] = dataTransfer
    o["screenX"] = screenX
    o["screenY"] =
screenY
    o["clientX"] = clientX
    o["clientY"] = clientY
    o["button"] = button
    o["buttons"] =
buttons
    o["relatedTarget"] = relatedTarget
    o["region"] = region
    o["ctrlKey"] = ctrlKey
    o["shiftKey"] = shiftKey
    o["altKey"] = altKey
    o["metaKey"] = metaKey
    o["modifierAltGraph"] =
modifierAltGraph
    o["modifierCapsLock"] = modifierCapsLock
    o["modifierFn"] = modifierFn
    o["modifierFnLock"] = modifierFnLock
    o["modifierHyper"] = modifierHyper
    o["modifierNumLock"] =
}

```

```

modifierNumLock\n o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n
o["view"] = view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n
o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Window](https://developer.mozilla.org/en/docs/Web/API/Window) to Kotlin\n */\npublic external abstract class
Window : EventTarget, GlobalEventHandlers, WindowEventHandlers, WindowOrWorkerGlobalScope,
WindowSessionStorage, WindowLocalStorage, GlobalPerformance, UnionMessagePortOrWindowProxy {\n open
val window: Window\n open val self: Window\n open val document: Document\n open var name: String\n
open val location: Location\n open val history: History\n open val customElements: CustomElementRegistry\n
open val locationbar: BarProp\n open val menubar: BarProp\n open val personalbar: BarProp\n open val
scrollbars: BarProp\n open val statusbar: BarProp\n open val toolbar: BarProp\n open var status: String\n
open val closed: Boolean\n open
val frames: Window\n open val length: Int\n open val top: Window\n open var opener: Any?\n open val
parent: Window\n open val frameElement: Element?\n open val navigator: Navigator\n open val
applicationCache: ApplicationCache\n open val external: External\n open val screen: Screen\n open val
innerWidth: Int\n open val innerHeight: Int\n open val scrollX: Double\n open val pageXOffset: Double\n
open val scrollY: Double\n open val pageYOffset: Double\n open val screenX: Int\n open val screenY: Int\n
open val outerWidth: Int\n open val outerHeight: Int\n open val devicePixelRatio: Double\n fun close()\n fun
stop()\n fun focus()\n fun blur()\n fun open(url: String = definedExternally, target: String = definedExternally,
features: String = definedExternally): Window?\n fun alert()\n fun alert(message: String)\n fun
confirm(message: String = definedExternally): Boolean\n fun prompt(message: String = definedExternally,
default: String = definedExternally): String?\n fun print()\n fun requestAnimationFrame(callback: (Double) ->
Unit): Int\n fun cancelAnimationFrame(handle: Int)\n fun postMessage(message: Any?, targetOrigin: String,
transfer: Array<dynamic> = definedExternally)\n fun captureEvents()\n fun releaseEvents()\n fun
matchMedia(query: String): MediaQueryList\n fun moveTo(x: Int, y: Int)\n fun moveBy(x: Int, y: Int)\n fun
resizeTo(x: Int, y: Int)\n fun resizeBy(x: Int, y: Int)\n fun scroll(options: ScrollToOptions = definedExternally)\n
fun scroll(x: Double, y: Double)\n fun scrollTo(options: ScrollToOptions = definedExternally)\n fun
scrollTo(x: Double, y: Double)\n fun scrollBy(options: ScrollToOptions = definedExternally)\n fun scrollBy(x:
Double, y: Double)\n fun getComputedStyle(elt: Element, pseudoElt: String? = definedExternally):
CSSStyleDeclaration}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic
inline operator fun Window.get(name: String): dynamic = asDynamic()[name]\n\n\npublic external abstract class
BarProp {\n open val visible: Boolean\n}\n\n\n/**\n * Exposes the JavaScript
[History](https://developer.mozilla.org/en/docs/Web/API/History) to Kotlin\n */\npublic external abstract class
History {\n open val length: Int\n open var scrollRestoration: ScrollRestoration\n open val state: Any?\n fun
go(delta: Int = definedExternally)\n fun back()\n fun forward()\n fun pushState(data: Any?, title: String, url:
String? = definedExternally)\n fun replaceState(data: Any?, title: String, url: String? =
definedExternally)\n}\n\n\n/**\n * Exposes the JavaScript
[Location](https://developer.mozilla.org/en/docs/Web/API/Location) to Kotlin\n */\npublic external abstract class
Location {\n open var href: String\n open val origin: String\n open var protocol: String\n open var host:
String\n open var hostname: String\n open
var port: String\n open var pathname: String\n open var search: String\n open var hash: String\n open val
ancestorOrigins: Array<out String>\n fun assign(url: String)\n fun replace(url: String)\n fun
reload()\n}\n\n\n/**\n * Exposes the JavaScript
[PopStateEvent](https://developer.mozilla.org/en/docs/Web/API/PopStateEvent) to Kotlin\n */\npublic external
open class PopStateEvent(type: String, eventInitDict: PopStateEventInit = definedExternally) : Event {\n open val
state: Any?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val
AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\n\npublic external interface PopStateEventInit

```

```

: EventInit {
    var state: Any? /* = null */
    get() = definedExternally
    set(value) =
definedExternally
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun PopStateEventInit(state: Any? = null,
bubbles: Boolean?
= false, cancelable: Boolean? = false, composed: Boolean? = false): PopStateEventInit {
    val o = js("{}")
    o["state"] = state
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] =
composed
    return o
}
/* Exposes the JavaScript
[HashChangeEvent](https://developer.mozilla.org/en/docs/Web/API/HashChangeEvent) to Kotlin
*/
public
external open class HashChangeEvent(type: String, eventInitDict: HashChangeEventInit = definedExternally) :
Event {
    open val oldURL: String
    open val newURL: String
    companion object {
        val NONE:
Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE:
Short
    }
}
public external interface HashChangeEventInit : EventInit {
    var oldURL: String? /* = "" */
    get() = definedExternally
    set(value) = definedExternally
    var newURL: String? /* = "" */
    get() =
definedExternally
    set(value)
= definedExternally
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun HashChangeEventInit(oldURL:
String? = "", newURL: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): HashChangeEventInit {
    val o = js("{}")
    o["oldURL"] = oldURL
    o["newURL"]
= newURL
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}
/* Exposes the JavaScript
[PageTransitionEvent](https://developer.mozilla.org/en/docs/Web/API/PageTransitionEvent) to Kotlin
*/
public
external open class PageTransitionEvent(type: String, eventInitDict: PageTransitionEventInit = definedExternally) :
Event {
    open val persisted: Boolean
    companion object {
        val NONE: Short
        val
CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}
public external interface
PageTransitionEventInit : EventInit {
    var persisted: Boolean? /* = false */
    get() = definedExternally
    set(value) = definedExternally
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun PageTransitionEventInit(persisted:
Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
PageTransitionEventInit {
    val o = js("{}")
    o["persisted"] = persisted
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}
/* Exposes the JavaScript
[BeforeUnloadEvent](https://developer.mozilla.org/en/docs/Web/API/BeforeUnloadEvent) to Kotlin
*/
public
external open class BeforeUnloadEvent : Event {
    var returnValue: String
    companion object {
        val
NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val
BUBBLING_PHASE: Short
    }
}
public
external abstract class ApplicationCache : EventTarget {
    open val status: Short
    open var onchecking:
((Event) -> dynamic)?
    open var onerror: ((Event) -> dynamic)?
    open var onnoupdate: ((Event) ->
dynamic)?
    open var ondownloading: ((Event) -> dynamic)?
    open var onprogress: ((ProgressEvent) ->
dynamic)?
    open var onupdateready: ((Event) -> dynamic)?
    open var oncached: ((Event) -> dynamic)?
    open var onobsolete: ((Event) -> dynamic)?
    fun update()
    fun abort()
    fun swapCache()
    companion
object {
        val UNCACHED: Short
        val IDLE: Short
        val CHECKING: Short
        val
DOWNLOADING: Short
        val UPDATEREADY: Short
        val OBSOLETE: Short
    }
}
/* Exposes the JavaScript
[NavigatorOnLine](https://developer.mozilla.org/en/docs/Web/API/NavigatorOnLine) to
Kotlin
*/
public external interface NavigatorOnLine {
    val onLine: Boolean
}
/* Exposes the
JavaScript
[ErrorEvent](https://developer.mozilla.org/en/docs/Web/API/ErrorEvent)
to Kotlin
*/
public external open class ErrorEvent(type: String, eventInitDict: ErrorEventInit =
definedExternally) : Event {
    open val message: String
    open val filename: String
    open val lineno: Int
    open val colno: Int
    open val error: Any?
    companion object {
        val NONE: Short
        val

```

```

CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface ErrorEventInit : EventInit {\n    var message: String? /* = \"\" */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var filename: String? /* = \"\" */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var lineno: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var colno: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var error: Any?
/* = null */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ErrorEventInit(message: String? = \"\",
filename: String? = \"\", lineno: Int? = 0, colno: Int? = 0, error: Any? = null, bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): ErrorEventInit {\n    val o = js(\"({})\")\n    o[\"message\"] =
message\n    o[\"filename\"] = filename\n    o[\"lineno\"] = lineno\n    o[\"colno\"] = colno\n    o[\"error\"] = error\n
o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return
o\n}\n\n/**\n * Exposes the JavaScript
[PromiseRejectionEvent](https://developer.mozilla.org/en/docs/Web/API/PromiseRejectionEvent) to Kotlin\n
*/\npublic external open class PromiseRejectionEvent(type: String, eventInitDict: PromiseRejectionEventInit) :
Event {\n    open val promise: Promise<Any?>\n
    open val reason: Any?\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE:
Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n\n    public external interface
PromiseRejectionEventInit : EventInit {\n        var promise: Promise<Any?>?\n        var reason: Any??\n        get() =
definedExternally\n        set(value) = definedExternally\n    }\n\n    @Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n    @kotlin.internal.InlineOnly\n    public inline fun PromiseRejectionEventInit(promise:
Promise<Any?>?, reason: Any? = undefined, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): PromiseRejectionEventInit {\n        val o = js(\"({})\")\n        o[\"promise\"] = promise\n
o[\"reason\"] = reason\n        o[\"bubbles\"] = bubbles\n        o[\"cancelable\"] = cancelable\n        o[\"composed\"] =
composed\n        return o\n    }\n\n    /**\n     * Exposes the JavaScript
[GlobalEventHandlers](https://developer.mozilla.org/en/docs/Web/API/GlobalEventHandlers)
to Kotlin\n    */\n    public external interface GlobalEventHandlers {\n        var onabort: ((Event) -> dynamic)?\n        get()
= definedExternally\n        set(value) = definedExternally\n        var onblur: ((FocusEvent) -> dynamic)?\n        get() =
definedExternally\n        set(value) = definedExternally\n        var oncancel: ((Event) -> dynamic)?\n        get() =
definedExternally\n        set(value) = definedExternally\n        var oncanplay: ((Event) -> dynamic)?\n        get() =
definedExternally\n        set(value) = definedExternally\n        var oncanplaythrough: ((Event) -> dynamic)?\n        get()
= definedExternally\n        set(value) = definedExternally\n        var onchange: ((Event) -> dynamic)?\n        get() =
definedExternally\n        set(value) = definedExternally\n        var onclick: ((MouseEvent) -> dynamic)?\n        get() =
definedExternally\n        set(value) = definedExternally\n        var onclose: ((Event) -> dynamic)?\n        get() =
definedExternally\n        set(value)
= definedExternally\n        var oncontextmenu: ((MouseEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var oncuechange: ((Event) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var ondblclick: ((MouseEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var ondrag: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var ondragend: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var ondragenter: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var ondragexit: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n        var ondragleave: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n
set(value) = definedExternally\n
        var ondragover: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n        set(value) =
definedExternally\n        var ondragstart: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n        set(value)
= definedExternally\n        var ondrop: ((DragEvent) -> dynamic)?\n        get() = definedExternally\n        set(value) =

```

```

definedExternally\n  var ondurationchange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value)
= definedExternally\n  var onemptied: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var onended: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var onfocus: ((FocusEvent) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var oninput: ((InputEvent)
-> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var oninvalid: ((Event) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var onkeydown:
((KeyboardEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onkeypress: ((KeyboardEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
  var onkeyup: ((KeyboardEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var onload: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var onloadeddata: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var onloadedmetadata: ((Event) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var onloadend: ((Event) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n  var onloadstart: ((ProgressEvent) -> dynamic)?\n
    get() = definedExternally\n    set(value) = definedExternally\n  var onmousedown: ((MouseEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var onmouseenter:
((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onmouseleave: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
  var onmousemove: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var onmouseout: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var onmouseover: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var onmouseup: ((MouseEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onwheel: ((WheelEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onpause: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onplay: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onplaying: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onprogress: ((ProgressEvent) -> dynamic)?\n
    get() = definedExternally\n    set(value) = definedExternally\n  var onratechange: ((Event) -> dynamic)?\n
    get() = definedExternally\n    set(value) = definedExternally\n  var onreset: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onresize: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n
  var onscroll: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onseeked: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onseeking: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onselect: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onshow: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onstalled: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onsubmit: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
onsuspend: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
ontimeupdate: ((Event) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var ontoggle: ((Event) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var onvolumechange: ((Event) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var onwaiting: ((Event) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n  var ongotpointercapture: ((PointerEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var onlostpointercapture: ((PointerEvent) -> dynamic)?\n
    get() = definedExternally\n    set(value) = definedExternally\n  var onpointerdown: ((PointerEvent) ->

```

```
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onpointermove:
((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onpointerup: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n    var onpointercancel: ((PointerEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onpointerover: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onpointerout: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onpointerenter: ((PointerEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onpointerleave:
((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n}\n\n/**\n *
Exposes the JavaScript
```

```
[WindowEventHandlers](https://developer.mozilla.org/en/docs/Web/API/WindowEventHandlers) to Kotlin\n
*\npublic external interface WindowEventHandlers {\n    var onafterprint: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n
    var onbeforeprint: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onbeforeunload: ((BeforeUnloadEvent) -> String?)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onhashchange: ((HashChangeEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onlanguagechange: ((Event) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onmessage: ((MessageEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onoffline: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var ononline: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onpagehide: ((PageTransitionEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n
    var onpageshow: ((PageTransitionEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onpopstate: ((PopStateEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onrejectionhandled: ((Event) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onstorage: ((StorageEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onunload: ((Event) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n}\n\npublic external interface
DocumentAndElementEventHandlers {\n    var oncopy: ((ClipboardEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var oncut: ((ClipboardEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onpaste: ((ClipboardEvent)
-> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n}\n\n/**\n * Exposes the
JavaScript
```

```
[WindowOrWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WindowOrWorkerGlobalScope)
to Kotlin\n
*\npublic external interface WindowOrWorkerGlobalScope {\n    val origin: String\n    val caches:
CacheStorage\n    fun btoa(data: String): String\n    fun atob(data: String): String\n    fun setTimeout(handler:
dynamic, timeout: Int = definedExternally, vararg arguments: Any?): Int\n    fun clearTimeout(handle: Int =
definedExternally)\n    fun setInterval(handler: dynamic, timeout: Int = definedExternally, vararg arguments: Any?):
Int\n    fun clearInterval(handle: Int = definedExternally)\n    fun createImageBitmap(image: ImageBitmapSource,
options: ImageBitmapOptions = definedExternally): Promise<ImageBitmap>\n    fun createImageBitmap(image:
ImageBitmapSource, sx: Int, sy: Int, sw: Int, sh: Int, options: ImageBitmapOptions = definedExternally):
Promise<ImageBitmap>\n    fun fetch(input: dynamic, init: RequestInit = definedExternally):
Promise<Response>\n}\n\n/**\n * Exposes the JavaScript
```

```
[Navigator](https://developer.mozilla.org/en/docs/Web/API/Navigator) to Kotlin\n
*\npublic external abstract class Navigator : NavigatorID, NavigatorLanguage, NavigatorOnLine, NavigatorContentUtils, NavigatorCookies,
NavigatorPlugins, NavigatorConcurrentHardware {\n    open val clipboard: Clipboard\n    open val mediaDevices:
MediaDevices\n    open val maxTouchPoints: Int\n    open val serviceWorker: ServiceWorkerContainer\n    fun
```

```

requestMediaKeySystemAccess(keySystem: String, supportedConfigurations:
Array<MediaKeySystemConfiguration>): Promise<MediaKeySystemAccess>\n fun getUserMedia(constraints:
MediaStreamConstraints, successCallback: (MediaStream) -> Unit, errorCallback: (dynamic) -> Unit)\n fun
vibrate(pattern:
dynamic): Boolean\n}\n\n**\n * Exposes the JavaScript
[NavigatorID](https://developer.mozilla.org/en/docs/Web/API/NavigatorID) to Kotlin\n */\n\npublic external interface
NavigatorID {\n val appCodeName: String\n val appName: String\n val appVersion: String\n val platform:
String\n val product: String\n val productSub: String\n val userAgent: String\n val vendor: String\n val
vendorSub: String\n val oscpu: String\n fun taintEnabled(): Boolean\n}\n\n**\n * Exposes the JavaScript
[NavigatorLanguage](https://developer.mozilla.org/en/docs/Web/API/NavigatorLanguage) to Kotlin\n */\n\npublic
external interface NavigatorLanguage {\n val language: String\n val languages: Array<out String>\n}\n\n\npublic
external interface NavigatorContentUtils {\n fun registerProtocolHandler(scheme: String, url: String, title:
String)\n fun registerContentHandler(mimeType: String, url: String, title: String)\n fun
isProtocolHandlerRegistered(scheme: String, url: String):
String\n fun isContentHandlerRegistered(mimeType: String, url: String): String\n fun
unregisterProtocolHandler(scheme: String, url: String)\n fun unregisterContentHandler(mimeType: String, url:
String)\n}\n\n\npublic external interface NavigatorCookies {\n val cookieEnabled: Boolean\n}\n\n**\n * Exposes
the JavaScript [NavigatorPlugins](https://developer.mozilla.org/en/docs/Web/API/NavigatorPlugins) to Kotlin\n
*/\n\npublic external interface NavigatorPlugins {\n val plugins: PluginArray\n val mimeTypes:
MimeTypeArray\n fun javaEnabled(): Boolean\n}\n\n**\n * Exposes the JavaScript
[PluginArray](https://developer.mozilla.org/en/docs/Web/API/PluginArray) to Kotlin\n */\n\npublic external abstract
class PluginArray : ItemArrayLike<Plugin> {\n fun refresh(reload: Boolean = definedExternally)\n override fun
item(index: Int): Plugin?\n fun namedItem(name: String):
Plugin?\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic
inline operator fun PluginArray.get(index: Int): Plugin? =
asDynamic()[index]\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun PluginArray.get(name:
String): Plugin? = asDynamic()[name]\n\n\n**\n * Exposes the JavaScript
[MimeTypeArray](https://developer.mozilla.org/en/docs/Web/API/MimeTypeArray) to Kotlin\n */\n\npublic external
abstract class MimeTypeArray : ItemArrayLike<MimeType> {\n override fun item(index: Int): MimeType?\n
fun namedItem(name: String): MimeType?\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun MimeTypeArray.get(index:
Int): MimeType? = asDynamic()[index]\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun MimeTypeArray.get(name:
String): MimeType? = asDynamic()[name]\n\n\n**\n * Exposes the JavaScript
[Plugin](https://developer.mozilla.org/en/docs/Web/API/Plugin)
to Kotlin\n */\n\npublic external abstract class Plugin : ItemArrayLike<MimeType> {\n open val name: String\n
open val description: String\n open val filename: String\n override fun item(index: Int): MimeType?\n fun
namedItem(name: String): MimeType?\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Plugin.get(index: Int):
MimeType? = asDynamic()[index]\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Plugin.get(name: String):
MimeType? = asDynamic()[name]\n\n\n**\n * Exposes the JavaScript
[MimeType](https://developer.mozilla.org/en/docs/Web/API/MimeType) to Kotlin\n */\n\npublic external abstract
class MimeType {\n open val type: String\n open val description: String\n open val suffixes: String\n open
val enabledPlugin: Plugin\n}\n\n\n**\n * Exposes the JavaScript
[ImageBitmap](https://developer.mozilla.org/en/docs/Web/API/ImageBitmap)

```

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to Kotlin\n */\npublic external abstract class ImageBitmap : CanvasImageSource, TexImageSource {\n  open val
width: Int\n  open val height: Int\n  fun close()\n}\n\npublic external interface ImageBitmapOptions {\n  var
imageOrientation: ImageOrientation? /* = ImageOrientation.NONE */\n  get() = definedExternally\n  set(value) = definedExternally\n  var premultiplyAlpha: PremultiplyAlpha? /* = PremultiplyAlpha.DEFAULT */\n
  get() = definedExternally\n  set(value) = definedExternally\n  var colorSpaceConversion:
ColorSpaceConversion? /* = ColorSpaceConversion.DEFAULT */\n  get() = definedExternally\n  set(value)
= definedExternally\n  var resizeMode: Int?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var resizeMode: Int?\n  get() = definedExternally\n  set(value) = definedExternally\n
var resizeMode: ResizeQuality? /* = ResizeQuality.LOW */\n  get() = definedExternally\n
  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
ImageBitmapOptions(imageOrientation: ImageOrientation? = ImageOrientation.NONE, premultiplyAlpha:
PremultiplyAlpha? = PremultiplyAlpha.DEFAULT, colorSpaceConversion: ColorSpaceConversion? =
ColorSpaceConversion.DEFAULT, resizeMode: Int? = undefined, resizeMode: Int? = undefined, resizeMode:
ResizeQuality? = ResizeQuality.LOW): ImageBitmapOptions {\n  val o = js("{}")\n  o["imageOrientation"] =
imageOrientation\n  o["premultiplyAlpha"] = premultiplyAlpha\n  o["colorSpaceConversion"] =
colorSpaceConversion\n  o["resizeWidth"] = resizeMode\n  o["resizeHeight"] = resizeMode\n
o["resizeQuality"] = resizeMode\n  return o\n}\n\n/**\n * Exposes the JavaScript
[MessageEvent](https://developer.mozilla.org/en/docs/Web/API/MessageEvent) to Kotlin\n */\npublic external open
class MessageEvent(type:
String, eventInitDict: MessageEventInit = definedExternally) : Event {\n  open val data: Any?\n  open val origin:
String\n  open val lastEventId: String\n  open val source: UnionMessagePortOrWindowProxy?\n  open val ports:
Array<out MessagePort>\n  fun initMessageEvent(type: String, bubbles: Boolean, cancelable: Boolean, data:
Any?, origin: String, lastEventId: String, source: UnionMessagePortOrWindowProxy?, ports:
Array<MessagePort>)\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n
    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
MessageEventInit : EventInit {\n  var data: Any? /* = null */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var origin: String? /* = "" */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var lastEventId: String? /* = "" */\n  get() = definedExternally\n  set(value)
= definedExternally\n  var source: UnionMessagePortOrWindowProxy? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var ports: Array<MessagePort>? /* = arrayOf() */\n
get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MessageEventInit(data: Any? = null,
origin: String? = "", lastEventId: String? = "", source: UnionMessagePortOrWindowProxy? = null, ports:
Array<MessagePort>? = arrayOf(), bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): MessageEventInit {\n  val o = js("{}")\n  o["data"] = data\n  o["origin"] = origin\n
o["lastEventId"] = lastEventId\n  o["source"] = source\n  o["ports"] = ports\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[EventSource](https://developer.mozilla.org/en/docs/Web/API/EventSource)
to Kotlin\n */\npublic external open class EventSource(url: String, eventSourceInitDict: EventSourceInit =
definedExternally) : EventTarget {\n  open val url: String\n  open val withCredentials: Boolean\n  open val
readyState: Short\n  var onopen: ((Event) -> dynamic)?\n  var onmessage: ((MessageEvent) -> dynamic)?\n  var
onerror: ((Event) -> dynamic)?\n  fun close()\n\n  companion object {\n    val CONNECTING: Short\n    val
OPEN: Short\n    val CLOSED: Short\n  }\n}\n\npublic external interface EventSourceInit {\n  var
withCredentials: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun EventSourceInit(withCredentials:
Boolean? = false): EventSourceInit {\n  val o = js("{}")\n  o["withCredentials"] = withCredentials\n

```



```

return o\n}\n\n/**\n * Exposes the JavaScript
[WebSocket](https://developer.mozilla.org/en/docs/Web/API/WebSocket) to Kotlin\n *\npublic external open class
WebSocket(url: String, protocols: dynamic = definedExternally) : EventTarget {\n  open val url: String\n  open
val readyState: Short\n  open val bufferedAmount: Number\n  var onopen: ((Event) -> dynamic)?\n  var onerror:
((Event) -> dynamic)?\n  var onclose: ((Event) -> dynamic)?\n  open val extensions: String\n  open val protocol:
String\n  var onmessage: ((MessageEvent) -> dynamic)?\n  var binaryType: BinaryType\n  fun close(code: Short
= definedExternally, reason: String = definedExternally)\n  fun send(data: String)\n  fun send(data: Blob)\n  fun
send(data: ArrayBuffer)\n  fun send(data: ArrayBufferView)\n\n  companion object {\n    val CONNECTING:
Short\n    val OPEN: Short\n    val CLOSING: Short\n    val CLOSED: Short\n  }\n}\n\n/**\n * Exposes the
JavaScript [CloseEvent](https://developer.mozilla.org/en/docs/Web/API/CloseEvent)
to Kotlin\n *\npublic external open class CloseEvent(type: String, eventInitDict: CloseEventInit =
definedExternally) : Event {\n  open val wasClean: Boolean\n  open val code: Short\n  open val reason:
String\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface CloseEventInit :
EventInit {\n  var wasClean: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var code: Short? /* = 0 */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var reason: String? /* = "" */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\n"INVISIBLE_REFERENCE",
\n"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CloseEventInit(wasClean: Boolean? =
false, code: Short? =
0, reason: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
CloseEventInit {\n  val o = js(\n"({})")\n  o["wasClean"] = wasClean\n  o["code"] = code\n  o["reason"] =
reason\n  o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return
o\n}\n\n/**\n * Exposes the JavaScript
[MessageChannel](https://developer.mozilla.org/en/docs/Web/API/MessageChannel) to Kotlin\n *\npublic external
open class MessageChannel {\n  open val port1: MessagePort\n  open val port2: MessagePort\n}\n\n/**\n *
Exposes the JavaScript [MessagePort](https://developer.mozilla.org/en/docs/Web/API/MessagePort) to Kotlin\n
*\npublic external abstract class MessagePort : EventTarget, UnionMessagePortOrWindowProxy,
UnionMessagePortOrServiceWorker, UnionClientOrMessagePortOrServiceWorker {\n  open var onmessage:
((MessageEvent) -> dynamic)?\n  fun postMessage(message: Any?, transfer: Array<dynamic>
= definedExternally)\n  fun start()\n  fun close()\n}\n\n/**\n * Exposes the JavaScript
[BroadcastChannel](https://developer.mozilla.org/en/docs/Web/API/BroadcastChannel) to Kotlin\n *\npublic
external open class BroadcastChannel(name: String) : EventTarget {\n  open val name: String\n  var onmessage:
((MessageEvent) -> dynamic)?\n  fun postMessage(message: Any?)\n  fun close()\n}\n\n/**\n * Exposes the
JavaScript [WorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WorkerGlobalScope) to Kotlin\n
*\npublic external abstract class WorkerGlobalScope : EventTarget, WindowOrWorkerGlobalScope,
GlobalPerformance {\n  open val self: WorkerGlobalScope\n  open val location: WorkerLocation\n  open val
navigator: WorkerNavigator\n  open var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n  open var
onlanguagechange: ((Event) -> dynamic)?\n  open var onoffline: ((Event) -> dynamic)?\n  open var ononline:
((Event) -> dynamic)?\n  open var onrejectionhandled:
((Event) -> dynamic)?\n  open var onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n  fun
importScripts(vararg urls: String)\n}\n\n/**\n * Exposes the JavaScript
[DedicatedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/DedicatedWorkerGlobalScope) to
Kotlin\n *\npublic external abstract class DedicatedWorkerGlobalScope : WorkerGlobalScope {\n  open var
onmessage: ((MessageEvent) -> dynamic)?\n  fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n  fun close()\n}\n\n/**\n * Exposes the JavaScript
[SharedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/SharedWorkerGlobalScope) to
Kotlin\n *\npublic external abstract class SharedWorkerGlobalScope : WorkerGlobalScope {\n  open val name:

```

```

String\n  open val applicationCache: ApplicationCache\n  open var onconnect: ((Event) -> dynamic)?\n  fun
close()\n}\n\n/**\n * Exposes the JavaScript
[AbstractWorker](https://developer.mozilla.org/en/docs/Web/API/AbstractWorker)
to Kotlin\n */\npublic external interface AbstractWorker {\n  var onerror: ((Event) -> dynamic)?\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[Worker](https://developer.mozilla.org/en/docs/Web/API/Worker) to Kotlin\n */\npublic external open class
Worker(scriptURL: String, options: WorkerOptions = definedExternally) : EventTarget, AbstractWorker {\n  var
onmessage: ((MessageEvent) -> dynamic)?\n  override var onerror: ((Event) -> dynamic)?\n  fun terminate()\n  fun
postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\npublic external interface
WorkerOptions {\n  var type: WorkerType? /* = WorkerType.CLASSIC */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var credentials: RequestCredentials? /* = RequestCredentials.OMIT */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun WorkerOptions(type: WorkerType? =
WorkerType.CLASSIC, credentials: RequestCredentials? = RequestCredentials.OMIT): WorkerOptions {\n  val o
= js("{}")\n  o["type"] = type\n  o["credentials"] = credentials\n  return o\n}\n\n/**\n * Exposes the
JavaScript [SharedWorker](https://developer.mozilla.org/en/docs/Web/API/SharedWorker) to Kotlin\n */\npublic
external open class SharedWorker(scriptURL: String, name: String = definedExternally, options: WorkerOptions =
definedExternally) : EventTarget, AbstractWorker {\n  open val port: MessagePort\n  override var onerror:
((Event) -> dynamic)?\n}\n\n/**\n * Exposes the JavaScript
[NavigatorConcurrentHardware](https://developer.mozilla.org/en/docs/Web/API/NavigatorConcurrentHardware) to
Kotlin\n */\npublic external interface NavigatorConcurrentHardware {\n  val hardwareConcurrency:
Number\n}\n\n/**\n * Exposes the JavaScript
[WorkerNavigator](https://developer.mozilla.org/en/docs/Web/API/WorkerNavigator)
to Kotlin\n */\npublic external abstract class WorkerNavigator : NavigatorID, NavigatorLanguage,
NavigatorOnLine, NavigatorConcurrentHardware {\n  open val serviceWorker:
ServiceWorkerContainer\n}\n\n/**\n * Exposes the JavaScript
[WorkerLocation](https://developer.mozilla.org/en/docs/Web/API/WorkerLocation) to Kotlin\n */\npublic external
abstract class WorkerLocation {\n  open val href: String\n  open val origin: String\n  open val protocol: String\n
open val host: String\n  open val hostname: String\n  open val port: String\n  open val pathname: String\n  open
val search: String\n  open val hash: String\n}\n\n/**\n * Exposes the JavaScript
[Storage](https://developer.mozilla.org/en/docs/Web/API/Storage) to Kotlin\n */\npublic external abstract class
Storage {\n  open val length: Int\n  fun key(index: Int): String?\n  fun removeItem(key: String)\n  fun clear()\n
fun getItem(key: String): String?\n  fun setItem(key: String, value: String)\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Storage.get(key: String):
String? = asDynamic()[key]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Storage.set(key: String, value:
String) { asDynamic()[key] = value }\n\n/**\n * Exposes the JavaScript
[WindowSessionStorage](https://developer.mozilla.org/en/docs/Web/API/WindowSessionStorage) to Kotlin\n */\npublic
external interface WindowSessionStorage {\n  val sessionStorage: Storage\n}\n\n/**\n * Exposes the
JavaScript [WindowLocalStorage](https://developer.mozilla.org/en/docs/Web/API/WindowLocalStorage) to
Kotlin\n */\npublic external interface WindowLocalStorage {\n  val localStorage: Storage\n}\n\n/**\n * Exposes
the JavaScript [StorageEvent](https://developer.mozilla.org/en/docs/Web/API/StorageEvent) to Kotlin\n */\npublic
external open class
StorageEvent(type: String, eventInitDict: StorageEventInit = definedExternally) : Event {\n  open val key:
String?\n  open val oldValue: String?\n  open val newValue: String?\n  open val url: String\n  open val
storageArea: Storage?\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface

```

```

StorageEventInit : EventInit {
    var key: String? /* = null */
    get() = definedExternally
    set(value) = definedExternally
    var oldValue: String? /* = null */
    get() = definedExternally
    set(value) = definedExternally
    var newValue: String? /* = null */
    get() = definedExternally
    set(value) = definedExternally
    var url: String? /* = "" */
    get() = definedExternally
    set(value) = definedExternally
    var storageArea: Storage? /* = null */
    get() = definedExternally
    set(value) = definedExternally
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
npublic inline fun StorageEventInit(key: String? = null,
oldValue: String? = null, newValue: String? = null, url: String? = "",
storageArea: Storage? = null, bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): StorageEventInit {
    val o = js("{}")
    o["key"] = key
    o["oldValue"] = oldValue
    o["newValue"] = newValue
    o["url"] = url
    o["storageArea"] = storageArea
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}
npublic external abstract class HTMLAppletElement :
HTMLElement {
    open var align: String
    open var alt: String
    open var archive: String
    open var code: String
    open var codeBase: String
    open var height: String
    open var hspace: Int
    open var name: String
    open var _object: String
    open var vspace: Int
    open var width: String
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}
n/**
 * Exposes the JavaScript [HTMLMarqueeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMarqueeElement) to Kotlin
 */
npublic external abstract
class HTMLMarqueeElement : HTMLElement {
    open var behavior: String
    open var bgColor: String
    open var direction: String
    open var height: String
    open var hspace: Int
    open var loop: Int
    open var scrollAmount: Int
    open var scrollDelay: Int
    open var trueSpeed: Boolean
    open var vspace: Int
    open var width: String
    open var onbounce: ((Event) -> dynamic)?
    open var onfinish: ((Event) -> dynamic)?
    open var onstart: ((Event) -> dynamic)?
    fun start()
    fun stop()
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}
n/**
 * Exposes the JavaScript [HTMLFrameSetElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFrameSetElement) to Kotlin
 */
npublic external abstract class HTMLFrameSetElement : HTMLElement, WindowEventHandlers {
    open var cols: String
    open var rows: String
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
    }
}

```

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    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n\npublic external abstract class
HTMLFrameElement : HTMLElement { \n    open var name: String\n    open var scrolling: String\n    open var src:
String\n    open var frameBorder: String\n    open var longDesc: String\n    open var noResize: Boolean\n    open val
contentDocument: Document?\n    open val contentWindow: Window?\n    open var marginHeight: String\n    open
var marginWidth: String\n\n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n\npublic external abstract class
HTMLDirectoryElement : HTMLElement { \n    open var compact: Boolean\n\n    companion object { \n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n
        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n\n/** \n * Exposes the JavaScript
[HTMLFontElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFontElement) to Kotlin \n * \n\npublic
external abstract class HTMLFontElement : HTMLElement { \n    open var color: String\n    open var face: String\n
    open var size: String\n\n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE:
Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n\npublic external
interface External { \n    fun AddSearchProvider()\n    fun IsSearchProviderInstalled()\n} \n\npublic external interface
EventInit { \n    var bubbles: Boolean? /* = false */ \n        get() = definedExternally\n        set(value) =
definedExternally\n    var cancelable: Boolean? /* = false */ \n        get() = definedExternally\n        set(value) =
definedExternally\n    var composed: Boolean? /* = false */ \n        get() = definedExternally\n        set(value)
= definedExternally\n} \n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n\n@kotlin.internal.InlineOnly \n\npublic inline fun EventInit(bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): EventInit { \n    val o = js("{}") \n    o["bubbles"] =
bubbles\n    o["cancelable"] = cancelable\n    o["composed"] = composed\n    return o\n} \n\n/** \n * Exposes the

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JavaScript [CustomEvent](https://developer.mozilla.org/en/docs/Web/API/CustomEvent) to Kotlin\n *^npublic external open class CustomEvent(type: String, eventInitDict: CustomEventInit = definedExternally) : Event {\n open val detail: Any?n fun initCustomEvent(type: String, bubbles: Boolean, cancelable: Boolean, detail: Any?)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface CustomEventInit : EventInit {\n var detail: Any? /* = null */\n\n get() = definedExternally\n set(value) = definedExternally\n\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CustomEventInit(detail: Any? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): CustomEventInit {\n val o = js("{}")\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\npublic external interface EventListenerOptions {\n var capture: Boolean? /* = false */\n\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun EventListenerOptions(capture: Boolean? = false): EventListenerOptions {\n val o = js("{}")\n o["capture"] = capture\n return o\n}\n\npublic external interface AddEventListenerOptions : EventListenerOptions {\n var passive: Boolean? /* = false */\n\n get() = definedExternally\n set(value) = definedExternally\n var once: Boolean? /* = false */\n\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun AddEventListenerOptions(passive: Boolean? = false, once: Boolean? = false, capture: Boolean? = false): AddEventListenerOptions {\n val o = js("{}")\n o["passive"] = passive\n o["once"] = once\n o["capture"] = capture\n return o\n}\n\npublic external interface NonElementParentNode {\n fun getElementById(elementId: String): Element?}\n\n/**\n * Exposes the JavaScript [DocumentOrShadowRoot](https://developer.mozilla.org/en/docs/Web/API/DocumentOrShadowRoot) to Kotlin\n *^npublic external interface DocumentOrShadowRoot {\n val fullscreenElement: Element?\n\n get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript [ParentNode](https://developer.mozilla.org/en/docs/Web/API/ParentNode) to Kotlin\n *^npublic external interface ParentNode {\n val children: HTMLCollection\n val firstElementChild: Element?\n\n get() = definedExternally\n val lastElementChild: Element?\n\n get() = definedExternally\n val childElementCount: Int\n fun prepend(vararg nodes: dynamic)\n fun append(vararg nodes: dynamic)\n fun querySelector(selectors: String): Element?\n fun querySelectorAll(selectors: String): NodeList\n}\n\n/**\n * Exposes the JavaScript [NonDocumentTypeChildNode](https://developer.mozilla.org/en/docs/Web/API/NonDocumentTypeChildNode) to Kotlin\n *^npublic external interface NonDocumentTypeChildNode {\n val previousElementSibling: Element?\n\n get() = definedExternally\n val nextElementSibling: Element?\n\n get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript [ChildNode](https://developer.mozilla.org/en/docs/Web/API/ChildNode) to Kotlin\n *^npublic external interface ChildNode {\n fun before(vararg nodes: dynamic)\n fun after(vararg nodes: dynamic)\n fun replaceWith(vararg nodes: dynamic)\n fun remove()\n}\n\n/**\n * Exposes the JavaScript [Slotable](https://developer.mozilla.org/en/docs/Web/API/Slotable) to Kotlin\n *^npublic external interface Slotable {\n val assignedSlot: HTMLSlotElement?\n\n get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript [NodeList](https://developer.mozilla.org/en/docs/Web/API/NodeList) to Kotlin\n *^npublic external abstract class NodeList : ItemArrayLike<Node> {\n override fun item(index: Int): Node?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun NodeList.get(index: Int): Node? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [HTMLCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLCollection) to Kotlin\n *^npublic

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external abstract class HTMLCollection : ItemArrayLike<Element>,
    UnionElementOrHTMLCollection {\n    override fun item(index: Int): Element?\n    fun namedItem(name: String):
    Element?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
    "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun HTMLCollection.get(index:
    Int): Element? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
    "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun HTMLCollection.get(name:
    String): Element? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
    [MutationObserver](https://developer.mozilla.org/en/docs/Web/API/MutationObserver) to Kotlin\n */\npublic
    external open class MutationObserver(callback: (Array<MutationRecord>, MutationObserver) -> Unit) {\n    fun
    observe(target: Node, options: MutationObserverInit = definedExternally)\n    fun disconnect()\n    fun
    takeRecords(): Array<MutationRecord>\n}\n\n/**\n * Exposes the JavaScript
    [MutationObserverInit](https://developer.mozilla.org/en/docs/Web/API/MutationObserverInit)
    to Kotlin\n */\npublic external interface MutationObserverInit {\n    var childList: Boolean? /* = false */\n    get()
    = definedExternally\n    set(value) = definedExternally\n    var attributes: Boolean?\n    get() =
    definedExternally\n    set(value) = definedExternally\n    var characterData: Boolean?\n    get() =
    definedExternally\n    set(value) = definedExternally\n    var subtree: Boolean? /* = false */\n    get() =
    definedExternally\n    set(value) = definedExternally\n    var attributeOldValue: Boolean?\n    get() =
    definedExternally\n    set(value) = definedExternally\n    var characterDataOldValue: Boolean?\n    get() =
    definedExternally\n    set(value) = definedExternally\n    var attributeFilter: Array<String>?\n    get() =
    definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
    "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MutationObserverInit(childList:
    Boolean? = false, attributes: Boolean? = undefined, characterData: Boolean? = undefined, subtree: Boolean? =
    false, attributeOldValue: Boolean? = undefined, characterDataOldValue: Boolean? = undefined, attributeFilter:
    Array<String>? = undefined): MutationObserverInit {\n    val o = js("{}")\n    o["childList"] = childList\n
    o["attributes"] = attributes\n    o["characterData"] = characterData\n    o["subtree"] = subtree\n
    o["attributeOldValue"] = attributeOldValue\n    o["characterDataOldValue"] = characterDataOldValue\n
    o["attributeFilter"] = attributeFilter\n    return o\n}\n\n/**\n * Exposes the JavaScript
    [MutationRecord](https://developer.mozilla.org/en/docs/Web/API/MutationRecord) to Kotlin\n */\npublic external
    abstract class MutationRecord {\n    open val type: String\n    open val target: Node\n    open val addedNodes:
    NodeList\n    open val removedNodes: NodeList\n    open val previousSibling: Node?\n    open val nextSibling:
    Node?\n    open val attributeName:
    String?\n    open val attributeNamespace: String?\n    open val oldValue: String?\n}\n\n/**\n * Exposes the
    JavaScript [Node](https://developer.mozilla.org/en/docs/Web/API/Node) to Kotlin\n */\npublic external abstract
    class Node : EventTarget {\n    open val.nodeType: Short\n    open val nodeName: String\n    open val baseURI:
    String\n    open val isConnected: Boolean\n    open val ownerDocument: Document?\n    open val parentNode:
    Node?\n    open val parentElement: Element?\n    open val childNodes: NodeList\n    open val firstChild: Node?\n
    open val lastChild: Node?\n    open val previousSibling: Node?\n    open val nextSibling: Node?\n    open var
    nodeValue: String?\n    open var textContent: String?\n    fun getRootNode(options: GetRootNodeOptions =
    definedExternally): Node\n    fun hasChildNodes(): Boolean\n    fun normalize()\n    fun cloneNode(deep: Boolean
    = definedExternally): Node\n    fun isEqualNode(otherNode: Node?): Boolean\n    fun isSameNode(otherNode:
    Node?):
    Boolean\n    fun compareDocumentPosition(other: Node): Short\n    fun contains(other: Node?): Boolean\n    fun
    lookupPrefix(namespace: String?): String?\n    fun lookupNamespaceURI(prefix: String?): String?\n    fun
    isDefaultNamespace(namespace: String?): Boolean\n    fun insertBefore(node: Node, child: Node?): Node\n    fun
    appendChild(node: Node): Node\n    fun replaceChild(node: Node, child: Node): Node\n    fun removeChild(child:
    Node): Node\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
        Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
        ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
    
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PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external interface
GetRootNodeOptions {\n    var composed: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun GetRootNodeOptions(composed:
Boolean? = false): GetRootNodeOptions {\n    val o = js(\"({})\")\n    o[\"composed\"] = composed\n    return
o\n}\n\n/**\n * Exposes the JavaScript [Document](https://developer.mozilla.org/en/docs/Web/API/Document) to
Kotlin\n */\n\npublic external open class Document : Node, GlobalEventHandlers,
DocumentAndElementEventHandlers, NonElementParentNode, DocumentOrShadowRoot, ParentNode,
GeometryUtils {\n    open val implementation: DOMImplementation\n
open val URL: String\n    open val documentURI: String\n    open val origin: String\n    open val compatMode:
String\n    open val characterSet: String\n    open val charset: String\n    open val inputEncoding: String\n    open val
contentType: String\n    open val doctype: DocumentType?\n    open val documentElement: Element?\n    open val
location: Location?\n    var domain: String\n    open val referrer: String\n    var cookie: String\n    open val
lastModified: String\n    open val readyState: DocumentReadyState\n    var title: String\n    var dir: String\n    var
body: HTMLElement?\n    open val head: HTMLHeadElement?\n    open val images: HTMLCollection\n    open val
embeds: HTMLCollection\n    open val plugins: HTMLCollection\n    open val links: HTMLCollection\n    open val
forms: HTMLCollection\n    open val scripts: HTMLCollection\n    open val currentScript:
HTMLScriptElement?\n    open val defaultView: Window?\n    open val activeElement: Element?\n    var
designMode:
String\n    var onreadystatechange: ((Event) -> dynamic)?\n    var fgColor: String\n    var linkColor: String\n    var
vlinkColor: String\n    var alinkColor: String\n    var bgColor: String\n    open val anchors: HTMLCollection\n
open val applets: HTMLCollection\n    open val all: HTMLAllCollection\n    open val scrollingElement: Element?\n
open val styleSheets: StyleSheetList\n    open val rootElement: SVGElement?\n    open val fullscreenEnabled:
Boolean\n    open val fullscreen: Boolean\n    var onfullscreenchange: ((Event) -> dynamic)?\n    var
onfullscreenerror: ((Event) -> dynamic)?\n    override var onabort: ((Event) -> dynamic)?\n    override var onblur:
((FocusEvent) -> dynamic)?\n    override var oncancel: ((Event) -> dynamic)?\n    override var oncanplay: ((Event) -
> dynamic)?\n    override var oncanplaythrough: ((Event) -> dynamic)?\n    override var onchange: ((Event) ->
dynamic)?\n    override var onclick: ((MouseEvent) -> dynamic)?\n    override var onclose:
((Event) -> dynamic)?\n    override var oncontextmenu: ((MouseEvent) -> dynamic)?\n    override var
oncuechange: ((Event) -> dynamic)?\n    override var ondblclick: ((MouseEvent) -> dynamic)?\n    override var
ondrag: ((DragEvent) -> dynamic)?\n    override var ondragend: ((DragEvent) -> dynamic)?\n    override var
ondragenter: ((DragEvent) -> dynamic)?\n    override var ondragexit: ((DragEvent) -> dynamic)?\n    override var
ondragleave: ((DragEvent) -> dynamic)?\n    override var ondragover: ((DragEvent) -> dynamic)?\n    override var
ondragstart: ((DragEvent) -> dynamic)?\n    override var ondrop: ((DragEvent) -> dynamic)?\n    override var
ondurationchange: ((Event) -> dynamic)?\n    override var onemptied: ((Event) -> dynamic)?\n    override var
onended: ((Event) -> dynamic)?\n    override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n
override var onfocus: ((FocusEvent) -> dynamic)?\n    override var oninput: ((InputEvent) -> dynamic)?\n    override
var oninvalid:
((Event) -> dynamic)?\n    override var onkeydown: ((KeyboardEvent) -> dynamic)?\n    override var onkeypress:
((KeyboardEvent) -> dynamic)?\n    override var onkeyup: ((KeyboardEvent) -> dynamic)?\n    override var onload:
((Event) -> dynamic)?\n    override var onloadeddata: ((Event) -> dynamic)?\n    override var onloadedmetadata:
((Event) -> dynamic)?\n    override var onloadend: ((Event) -> dynamic)?\n    override var onloadstart:

```

```

((ProgressEvent) -> dynamic)?\n  override var onmousedown: ((MouseEvent) -> dynamic)?\n  override var
onmouseenter: ((MouseEvent) -> dynamic)?\n  override var onmouseleave: ((MouseEvent) -> dynamic)?\n
override var onmousemove: ((MouseEvent) -> dynamic)?\n  override var onmouseout: ((MouseEvent) ->
dynamic)?\n  override var onmouseover: ((MouseEvent) -> dynamic)?\n  override var onmouseup: ((MouseEvent)
-> dynamic)?\n  override var onwheel: ((WheelEvent) -> dynamic)?\n  override var onpause: ((Event) ->
dynamic)?\n  override var
onplay: ((Event) -> dynamic)?\n  override var onplaying: ((Event) -> dynamic)?\n  override var onprogress:
((ProgressEvent) -> dynamic)?\n  override var onratechange: ((Event) -> dynamic)?\n  override var onreset:
((Event) -> dynamic)?\n  override var onresize: ((Event) -> dynamic)?\n  override var onscroll: ((Event) ->
dynamic)?\n  override var onseeked: ((Event) -> dynamic)?\n  override var onseeking: ((Event) -> dynamic)?\n
override var onselect: ((Event) -> dynamic)?\n  override var onshow: ((Event) -> dynamic)?\n  override var
onstalled: ((Event) -> dynamic)?\n  override var onsubmit: ((Event) -> dynamic)?\n  override var onsuspend:
((Event) -> dynamic)?\n  override var ontimeupdate: ((Event) -> dynamic)?\n  override var ontoggle: ((Event) ->
dynamic)?\n  override var onvolumechange: ((Event) -> dynamic)?\n  override var onwaiting: ((Event) ->
dynamic)?\n  override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override var
onlostpointercapture:
((PointerEvent) -> dynamic)?\n  override var onpointerdown: ((PointerEvent) -> dynamic)?\n  override var
onpointermove: ((PointerEvent) -> dynamic)?\n  override var onpointerup: ((PointerEvent) -> dynamic)?\n
override var onpointercancel: ((PointerEvent) -> dynamic)?\n  override var onpointerover: ((PointerEvent) ->
dynamic)?\n  override var onpointerout: ((PointerEvent) -> dynamic)?\n  override var onpointerenter:
((PointerEvent) -> dynamic)?\n  override var onpointerleave: ((PointerEvent) -> dynamic)?\n  override var
oncopy: ((ClipboardEvent) -> dynamic)?\n  override var oncut: ((ClipboardEvent) -> dynamic)?\n  override var
onpaste: ((ClipboardEvent) -> dynamic)?\n  override val fullscreenElement: Element?\n  override val children:
HTMLCollection\n  override val firstElementChild: Element?\n  override val lastElementChild: Element?\n
override val childElementCount: Int\n  fun getElementsByTagName(qualifiedName: String): HTMLCollection\n
  fun getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection\n  fun
getElementsByTagName(className: String): HTMLCollection\n  fun createElement(localName: String,
options: ElementCreationOptions = definedExternally): Element\n  fun createElementNS(namespace: String?,
qualifiedName: String, options: ElementCreationOptions = definedExternally): Element\n  fun
createDocumentFragment(): DocumentFragment\n  fun createTextNode(data: String): Text\n  fun
createCDATASection(data: String): CDATASection\n  fun createComment(data: String): Comment\n  fun
createProcessingInstruction(target: String, data: String): ProcessingInstruction\n  fun importNode(node: Node,
deep: Boolean = definedExternally): Node\n  fun adoptNode(node: Node): Node\n  fun
createAttribute(localName: String): Attr\n  fun createAttributeNS(namespace: String?, qualifiedName: String):
Attr\n  fun createEvent(`interface`: String): Event\n  fun createRange(): Range\n  fun
createNodeIterator(root: Node, whatToShow: Int = definedExternally, filter: NodeFilter? = definedExternally):
NodeIterator\n  fun createNodeIterator(root: Node, whatToShow: Int = definedExternally, filter: ((Node) -> Short)?
= definedExternally): NodeIterator\n  fun createTreeWalker(root: Node, whatToShow: Int = definedExternally,
filter: NodeFilter? = definedExternally): TreeWalker\n  fun createTreeWalker(root: Node, whatToShow: Int =
definedExternally, filter: ((Node) -> Short)? = definedExternally): TreeWalker\n  fun
getElementsByTagName(elementName: String): NodeList\n  fun open(type: String = definedExternally, replace:
String = definedExternally): Document\n  fun open(url: String, name: String, features: String): Window\n  fun
close()\n  fun write(vararg text: String)\n  fun writeln(vararg text: String)\n  fun hasFocus(): Boolean\n  fun
execCommand(commandId: String, showUI: Boolean = definedExternally, value: String = definedExternally):
Boolean\n  fun queryCommandEnabled(commandId:
String): Boolean\n  fun queryCommandIndeterm(commandId: String): Boolean\n  fun
queryCommandState(commandId: String): Boolean\n  fun queryCommandSupported(commandId: String):
Boolean\n  fun queryCommandValue(commandId: String): String\n  fun clear()\n  fun captureEvents()\n  fun

```



```

releaseEvents()\n fun elementFromPoint(x: Double, y: Double): Element?\n fun elementsFromPoint(x: Double,
y: Double): Array<Element>\n fun caretPositionFromPoint(x: Double, y: Double): CaretPosition?\n fun
createTouch(view: Window, target: EventTarget, identifier: Int, pageX: Int, pageY: Int, screenX: Int, screenY: Int):
Touch\n fun createTouchList(vararg touches: Touch): TouchList\n fun exitFullscreen(): Promise<Unit>\n
override fun getElementById(elementId: String): Element?\n override fun prepend(vararg nodes: dynamic)\n
override fun append(vararg nodes: dynamic)\n override fun querySelector(selectors: String): Element?\n
override fun
querySelectorAll(selectors: String): NodeList\n override fun getBoxQuads(options: BoxQuadOptions /* =
definedExternally */): Array<DOMQuad>\n override fun convertQuadFromNode(quad: dynamic, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override fun
convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n override fun convertPointFromNode(point: DOMPointInit, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE:
Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Document.get(name: String):
dynamic = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[XMLDocument](https://developer.mozilla.org/en/docs/Web/API/XMLDocument) to Kotlin\n */\npublic external
open class XMLDocument : Document {\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n
val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE:
Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external interface
ElementCreationOptions {\n var `is`: String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ElementCreationOptions(`is`: String?
= undefined): ElementCreationOptions {\n val o = js(\"({})\")\n o[\"is\"] = `is`\n return o\n}\n\n/**\n *
Exposes the JavaScript
[DOMImplementation](https://developer.mozilla.org/en/docs/Web/API/DOMImplementation)
to Kotlin\n */\npublic external abstract class DOMImplementation {\n fun createDocumentType(qualifiedName:
String, publicId: String, systemId: String): DocumentType\n fun createDocument(namespace: String?,
qualifiedName: String, doctype: DocumentType? = definedExternally): XMLDocument\n fun
createHTMLDocument(title: String = definedExternally): Document\n fun hasFeature(): Boolean\n}\n\n/**\n *
Exposes the JavaScript [DocumentType](https://developer.mozilla.org/en/docs/Web/API/DocumentType) to
Kotlin\n */\npublic external abstract class DocumentType : Node, ChildNode {\n open val name: String\n open

```

```

val publicId: String\n  open val systemId: String\n\n  companion object {\n    val ELEMENT_NODE: Short\n      val ATTRIBUTE_NODE: Short\n      val TEXT_NODE: Short\n      val CDATA_SECTION_NODE: Short\n      val ENTITY_REFERENCE_NODE: Short\n      val ENTITY_NODE: Short\n      val
PROCESSING_INSTRUCTION_NODE: Short\n      val COMMENT_NODE:
Short\n      val DOCUMENT_NODE: Short\n      val DOCUMENT_TYPE_NODE: Short\n      val
DOCUMENT_FRAGMENT_NODE: Short\n      val NOTATION_NODE: Short\n      val
DOCUMENT_POSITION_DISCONNECTED: Short\n      val DOCUMENT_POSITION_PRECEDING: Short\n
      val DOCUMENT_POSITION_FOLLOWING: Short\n      val DOCUMENT_POSITION_CONTAINS: Short\n
      val DOCUMENT_POSITION_CONTAINED_BY: Short\n      val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[DocumentFragment](https://developer.mozilla.org/en/docs/Web/API/DocumentFragment) to Kotlin\n *\npublic
external open class DocumentFragment : Node, NonElementParentNode, ParentNode {\n  override val children:
HTMLCollection\n  override val firstElementChild: Element?\n  override val lastElementChild: Element?\n
  override val childElementCount: Int\n  override fun getElementById(elementId: String): Element?\n  override fun
prepend(vararg nodes: dynamic)\n  override fun
append(vararg nodes: dynamic)\n  override fun querySelector(selectors: String): Element?\n  override fun
querySelectorAll(selectors: String): NodeList\n\n  companion object {\n    val ELEMENT_NODE: Short\n
    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n
    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[ShadowRoot](https://developer.mozilla.org/en/docs/Web/API/ShadowRoot)
to Kotlin\n *\npublic external open class ShadowRoot : DocumentFragment, DocumentOrShadowRoot {\n  open
val mode: ShadowRootMode\n  open val host: Element\n  override val fullscreenElement: Element?\n\n
  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[Element](https://developer.mozilla.org/en/docs/Web/API/Element) to Kotlin\n *\npublic external abstract class
Element : Node, ParentNode, NonDocumentTypeChildNode, ChildNode, Slotable, GeometryUtils,
UnionElementOrHTMLCollection, UnionElementOrRadioNodeList, UnionElementOrMouseEvent,
UnionElementOrProcessingInstruction {\n  open val namespaceURI: String?\n  open val prefix: String?\n  open
val localName: String\n  open val tagName: String\n  open var id: String\n  open var className: String\n  open
val classList: DOMTokenList\n  open var slot: String\n  open val attributes: NamedNodeMap\n  open val
shadowRoot: ShadowRoot?\n  open var scrollTop: Double\n  open var scrollLeft: Double\n  open val
scrollWidth: Int\n  open val scrollHeight: Int\n  open val clientTop: Int\n  open val clientLeft: Int\n  open val
clientWidth: Int\n  open val clientHeight: Int\n  open var innerHTML: String\n

```

```

open var outerHTML: String\n fun hasAttributes(): Boolean\n fun getAttributeNames(): Array<String>\n
fun getAttribute(qualifiedName: String): String?\n fun getAttributeNS(namespace: String?, localName: String):
String?\n fun setAttribute(qualifiedName: String, value: String)\n fun setAttributeNS(namespace: String?,
qualifiedName: String, value: String)\n fun removeAttribute(qualifiedName: String)\n fun
removeAttributeNS(namespace: String?, localName: String)\n fun hasAttribute(qualifiedName: String): Boolean\n
fun hasAttributeNS(namespace: String?, localName: String): Boolean\n fun getAttributeNode(qualifiedName:
String): Attr?\n fun getAttributeNodeNS(namespace: String?, localName: String): Attr?\n fun
setAttributeNode(attr: Attr): Attr?\n fun setAttributeNodeNS(attr: Attr): Attr?\n fun removeAttributeNode(attr:
Attr): Attr\n fun attachShadow(init: ShadowRootInit): ShadowRoot\n fun closest(selectors: String): Element?\n
fun
matches(selectors: String): Boolean\n fun webkitMatchesSelector(selectors: String): Boolean\n fun
getElementsByTagName(qualifiedName: String): HTMLCollection\n fun
getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection\n fun
getElementsByClassName(classNames: String): HTMLCollection\n fun insertAdjacentElement(where: String,
element: Element): Element?\n fun insertAdjacentText(where: String, data: String)\n fun getClientRects():
Array<DOMRect>\n fun getBoundingClientRect(): DOMRect\n fun scrollIntoView()\n fun
scrollIntoView(arg: dynamic)\n fun scroll(options: ScrollToOptions = definedExternally)\n fun scroll(x: Double,
y: Double)\n fun scrollTo(options: ScrollToOptions = definedExternally)\n fun scrollTo(x: Double, y: Double)\n
fun scrollBy(options: ScrollToOptions = definedExternally)\n fun scrollBy(x: Double, y: Double)\n fun
insertAdjacentHTML(position: String, text: String)\n fun setPointerCapture(pointerId:
Int)\n fun releasePointerCapture(pointerId: Int)\n fun hasPointerCapture(pointerId: Int): Boolean\n fun
requestFullscreen(): Promise<Unit>\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n\npublic external interface
ShadowRootInit {\n var mode:
ShadowRootMode?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun ShadowRootInit(mode:
ShadowRootMode?): ShadowRootInit {\n val o = js(\"({})\")\n o[\"mode\"] = mode\n return o\n}\n\n/**\n *
Exposes the JavaScript [NamedNodeMap](https://developer.mozilla.org/en/docs/Web/API/NamedNodeMap) to
Kotlin\n */\n\npublic external abstract class NamedNodeMap : ItemArrayLike<Attr> {\n fun
getNamedItemNS(namespace: String?, localName: String): Attr?\n fun setNamedItem(attr: Attr): Attr?\n fun
setNamedItemNS(attr: Attr): Attr?\n fun removeNamedItem(qualifiedName: String): Attr\n fun
removeNamedItemNS(namespace: String?, localName: String): Attr\n override fun item(index: Int): Attr?\n fun
getNamedItem(qualifiedName: String): Attr?\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun NamedNodeMap.get(index:
Int): Attr? = asDynamic()[index]\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun
NamedNodeMap.get(qualifiedName: String): Attr? = asDynamic()[qualifiedName]\n\n\n/**\n * Exposes the
JavaScript [Attr](https://developer.mozilla.org/en/docs/Web/API/Attr) to Kotlin\n */\n\npublic external abstract class
Attr : Node {\n open val namespaceURI: String?\n open val prefix: String?\n open val localName: String\n
open val name: String\n open var value: String\n open val ownerElement: Element?\n open val specified:

```

```

Boolean companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

* Exposes the JavaScript [CharacterData](https://developer.mozilla.org/en/docs/Web/API/CharacterData) to Kotlin
* public external abstract class CharacterData : Node, NonDocumentTypeChildNode, ChildNode {
    open var data: String
    open val length: Int
    fun substringData(offset: Int, count: Int): String
    fun appendData(data: String)
    fun insertData(offset: Int, data: String)
    fun deleteData(offset: Int, count: Int)
    fun replaceData(offset: Int, count: Int, data: String)
}

companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

* Exposes the JavaScript [Text](https://developer.mozilla.org/en/docs/Web/API/Text) to Kotlin
* public external open class Text(data: String = definedExternally) : CharacterData, Slotable, GeometryUtils {
    open val wholeText: String
    override val assignedSlot: HTMLSlotElement?
    override val previousElementSibling: Element?
    override val nextElementSibling: Element?
    fun splitText(offset: Int): Text
    override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>
    override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad
    override fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad
    override fun convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint
    override fun before(vararg nodes: dynamic)
    override fun after(vararg nodes: dynamic)
    override fun replaceWith(vararg nodes: dynamic)
    override fun remove()
}

companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

* Exposes the JavaScript [CDATASection](https://developer.mozilla.org/en/docs/Web/API/CDATASection) to Kotlin
* public external open class CDATASection : Text {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE:

```

```

Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val
DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val
NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [ProcessingInstruction](https://developer.mozilla.org/en/docs/Web/API/ProcessingInstruction) to
Kotlin\n */\npublic external abstract class ProcessingInstruction : CharacterData, LinkStyle,
UnionElementOrProcessingInstruction {\n    open val target: String\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[Comment](https://developer.mozilla.org/en/docs/Web/API/Comment) to Kotlin\n */\npublic external open class
Comment(data: String = definedExternally) : CharacterData {\n    override val previousElementSibling: Element?\n
override val nextElementSibling: Element?\n    override fun before(vararg nodes: dynamic)\n    override fun
after(vararg nodes: dynamic)\n
    override fun replaceWith(vararg nodes: dynamic)\n    override fun remove()\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[Range](https://developer.mozilla.org/en/docs/Web/API/Range) to Kotlin\n */\npublic external open class
Range {\n    open val startContainer: Node\n    open val startOffset: Int\n    open val endContainer: Node\n    open
val endOffset: Int\n    open val collapsed: Boolean\n    open val commonAncestorContainer: Node\n    fun
setStart(node: Node, offset: Int)\n    fun setEnd(node: Node, offset: Int)\n    fun setStartBefore(node: Node)\n    fun
setStartAfter(node: Node)\n    fun setEndBefore(node: Node)\n    fun setEndAfter(node: Node)\n    fun
collapse(toStart: Boolean = definedExternally)\n    fun selectNode(node: Node)\n    fun selectNodeContents(node:
Node)\n    fun compareBoundaryPoints(how: Short, sourceRange: Range): Short\n    fun deleteContents()\n    fun
extractContents(): DocumentFragment\n    fun cloneContents(): DocumentFragment\n    fun insertNode(node:
Node)\n    fun surroundContents(newParent: Node)\n    fun cloneRange(): Range\n    fun detach()\n    fun
isPointInRange(node: Node, offset: Int): Boolean\n    fun comparePoint(node: Node, offset: Int): Short\n    fun
intersectsNode(node:
Node): Boolean\n    fun getClientRects(): Array<DOMRect>\n    fun getBoundingClientRect(): DOMRect\n    fun
createContextualFragment(fragment: String): DocumentFragment\n\n    companion object {\n        val
START_TO_START: Short\n        val START_TO_END: Short\n        val END_TO_END: Short\n        val
END_TO_START: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[NodeIterator](https://developer.mozilla.org/en/docs/Web/API/NodeIterator) to Kotlin\n */\npublic external abstract

```

```

class NodeIterator {
    open val root: Node
    open val referenceNode: Node
    open val pointerBeforeReferenceNode: Boolean
    open val whatToShow: Int
    open val filter: NodeFilter?
    fun nextNode(): Node?
    fun previousNode(): Node?
    fun detach()
}
// Exposes the JavaScript [TreeWalker](https://developer.mozilla.org/en/docs/Web/API/TreeWalker) to Kotlin
public external abstract class TreeWalker {
    open val root: Node
    open val whatToShow: Int
    open val filter: NodeFilter?
    open var currentNode: Node
    fun parentNode(): Node?
    fun firstChild(): Node?
    fun lastChild(): Node?
    fun previousSibling(): Node?
    fun nextSibling(): Node?
    fun previousNode(): Node?
    fun nextNode(): Node?
}
// Exposes the JavaScript [NodeFilter](https://developer.mozilla.org/en/docs/Web/API/NodeFilter) to Kotlin
public external interface NodeFilter {
    fun acceptNode(node: Node): Short
    companion object {
        val FILTER_ACCEPT: Short
        val FILTER_REJECT: Short
        val FILTER_SKIP: Short
        val SHOW_ALL: Int
        val SHOW_ELEMENT: Int
        val SHOW_ATTRIBUTE: Int
        val SHOW_TEXT: Int
        val SHOW_CDATA_SECTION: Int
        val SHOW_ENTITY_REFERENCE: Int
        val SHOW_ENTITY: Int
        val SHOW_PROCESSING_INSTRUCTION: Int
        val SHOW_COMMENT: Int
        val SHOW_DOCUMENT: Int
        val SHOW_DOCUMENT_TYPE: Int
        val SHOW_DOCUMENT_FRAGMENT: Int
        val SHOW_NOTATION: Int
    }
}
// Exposes the JavaScript [DOMTokenList](https://developer.mozilla.org/en/docs/Web/API/DOMTokenList) to Kotlin
public external abstract class DOMTokenList : ItemArrayLike<String> {
    open var value: String
    fun contains(token: String): Boolean
    fun add(vararg tokens: String)
    fun remove(vararg tokens: String)
    fun toggle(token: String, force: Boolean = definedExternally): Boolean
    fun replace(token: String, newToken: String)
    fun supports(token: String): Boolean
    override fun item(index: Int): String?
}
// Exposes the JavaScript [DOMTokenList.get](https://developer.mozilla.org/en/docs/Web/API/DOMTokenList.get) to Kotlin
public inline operator fun DOMTokenList.get(index: Int): String? = asDynamic()[index]
// Exposes the JavaScript [DOMPointReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMPointReadOnly) to Kotlin
public external open class DOMPointReadOnly(x: Double, y: Double, z: Double, w: Double) {
    open val x: Double
    open val y: Double
    open val z: Double
    open val w: Double
    fun matrixTransform(matrix: DOMMatrixReadOnly): DOMPoint
}
// Exposes the JavaScript [DOMPoint](https://developer.mozilla.org/en/docs/Web/API/DOMPoint) to Kotlin
public external open class DOMPoint : DOMPointReadOnly {
    constructor(point: DOMPointInit)
    constructor(x: Double = definedExternally, y: Double = definedExternally, z: Double = definedExternally, w: Double = definedExternally)
    override var x: Double
    override var y: Double
    override var z: Double
    override var w: Double
}
// Exposes the JavaScript [DOMPointInit](https://developer.mozilla.org/en/docs/Web/API/DOMPointInit) to Kotlin
public external interface DOMPointInit {
    var x: Double? /* = 0.0 */
    get() = definedExternally
    set(value) = definedExternally
    var y: Double? /* = 0.0 */
    get() = definedExternally
    set(value) = definedExternally
    var z: Double? /* = 0.0 */
    get() = definedExternally
    set(value) = definedExternally
    var w: Double? /* = 1.0 */
    get() = definedExternally
    set(value) = definedExternally
}
// Exposes the JavaScript [DOMPointInit](https://developer.mozilla.org/en/docs/Web/API/DOMPointInit) to Kotlin
public inline fun DOMPointInit(x: Double? = 0.0, y: Double? = 0.0, z: Double? = 0.0, w: Double? = 1.0): DOMPointInit {
    val o = js("{}")
    o["x"] = x
    o["y"] = y
    o["z"] = z
    o["w"] = w
    return o
}
// Exposes the JavaScript [DOMRect](https://developer.mozilla.org/en/docs/Web/API/DOMRect) to Kotlin
public external open class DOMRect(x: Double = definedExternally, y: Double = definedExternally, width: Double = definedExternally, height: Double = definedExternally) : DOMRectReadOnly {
    override var x: Double
    override var y: Double
    override var width: Double
    override

```

```

var height: Double\n}\n\n/**\n * Exposes the JavaScript
[DOMRectReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMRectReadOnly) to Kotlin\n *\npublic
external open class DOMRectReadOnly(x: Double, y: Double, width: Double, height: Double) {\n  open val x:
Double\n  open val y: Double\n  open val width: Double\n  open val height: Double\n  open val top: Double\n
open val right: Double\n  open val bottom: Double\n  open val left: Double\n}\n\npublic external interface
DOMRectInit {\n  var x: Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) =
definedExternally\n  var y: Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) =
definedExternally\n  var width: Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) =
definedExternally\n  var height: Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\\",
\\"INVISIBLE_MEMBER\\")\n@kotlin.internal.InlineOnly\npublic
inline fun DOMRectInit(x: Double? = 0.0, y: Double? = 0.0, width: Double? = 0.0, height: Double? = 0.0):
DOMRectInit {\n  val o = js(\\"{\}\")\n  o[\"x\"] = x\n  o[\"y\"] = y\n  o[\"width\"] = width\n  o[\"height\"] =
height\n  return o\n}\n\npublic external interface DOMRectList : ItemArrayLike<DOMRect> {\n  override fun
item(index: Int): DOMRect?\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\\",
\\"INVISIBLE_MEMBER\\")\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMRectList.get(index: Int):
DOMRect? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DOMQuad](https://developer.mozilla.org/en/docs/Web/API/DOMQuad) to Kotlin\n *\npublic external open class
DOMQuad {\n  constructor(p1: DOMPointInit = definedExternally, p2: DOMPointInit = definedExternally, p3:
DOMPointInit = definedExternally, p4: DOMPointInit = definedExternally)\n  constructor(rect: DOMRectInit)\n
open val p1: DOMPoint\n  open val p2:
DOMPoint\n  open val p3: DOMPoint\n  open val p4: DOMPoint\n  open val bounds:
DOMRectReadOnly\n}\n\n/**\n * Exposes the JavaScript
[DOMMatrixReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMMatrixReadOnly) to Kotlin\n
*\npublic external open class DOMMatrixReadOnly(numberSequence: Array<Double>) {\n  open val a: Double\n
open val b: Double\n  open val c: Double\n  open val d: Double\n  open val e: Double\n  open val f: Double\n
open val m11: Double\n  open val m12: Double\n  open val m13: Double\n  open val m14: Double\n  open val
m21: Double\n  open val m22: Double\n  open val m23: Double\n  open val m24: Double\n  open val m31:
Double\n  open val m32: Double\n  open val m33: Double\n  open val m34: Double\n  open val m41: Double\n
open val m42: Double\n  open val m43: Double\n  open val m44: Double\n  open val is2D: Boolean\n  open
val isIdentity: Boolean\n  fun translate(tx: Double, ty: Double, tz: Double = definedExternally):
DOMMatrix\n  fun scale(scale: Double, originX: Double = definedExternally, originY: Double =
definedExternally): DOMMatrix\n  fun scale3d(scale: Double, originX: Double = definedExternally, originY:
Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n  fun scaleNonUniform(scaleX:
Double, scaleY: Double = definedExternally, scaleZ: Double = definedExternally, originX: Double =
definedExternally, originY: Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n
fun rotate(angle: Double, originX: Double = definedExternally, originY: Double = definedExternally): DOMMatrix\n
fun rotateFromVector(x: Double, y: Double): DOMMatrix\n  fun rotateAxisAngle(x: Double, y: Double, z:
Double, angle: Double): DOMMatrix\n  fun skewX(sx: Double): DOMMatrix\n  fun skewY(sy: Double):
DOMMatrix\n  fun multiply(other: DOMMatrix): DOMMatrix\n  fun flipX(): DOMMatrix\n  fun flipY():
DOMMatrix\n  fun inverse(): DOMMatrix\n
fun transformPoint(point: DOMPointInit = definedExternally): DOMPoint\n  fun toFloat32Array():
Float32Array\n  fun toFloat64Array(): Float64Array\n}\n\n/**\n * Exposes the JavaScript
[DOMMatrix](https://developer.mozilla.org/en/docs/Web/API/DOMMatrix) to Kotlin\n *\npublic external open
class DOMMatrix() : DOMMatrixReadOnly {\n  constructor(transformList: String)\n  constructor(other:
DOMMatrixReadOnly)\n  constructor(array32: Float32Array)\n  constructor(array64: Float64Array)\n
constructor(numberSequence: Array<Double>)\n  override var a: Double\n  override var b: Double\n  override
var c: Double\n  override var d: Double\n  override var e: Double\n  override var f: Double\n  override var m11:

```

```

Double\n    override var m12: Double\n    override var m13: Double\n    override var m14: Double\n    override var
m21: Double\n    override var m22: Double\n    override var m23: Double\n    override var m24: Double\n    override
var m31: Double\n    override
    var m32: Double\n    override var m33: Double\n    override var m34: Double\n    override var m41: Double\n
override var m42: Double\n    override var m43: Double\n    override var m44: Double\n    fun multiplySelf(other:
DOMMatrix): DOMMatrix\n    fun preMultiplySelf(other: DOMMatrix): DOMMatrix\n    fun translateSelf(tx:
Double, ty: Double, tz: Double = definedExternally): DOMMatrix\n    fun scaleSelf(scale: Double, originX: Double
= definedExternally, originY: Double = definedExternally): DOMMatrix\n    fun scale3dSelf(scale: Double,
originX: Double = definedExternally, originY: Double = definedExternally, originZ: Double = definedExternally):
DOMMatrix\n    fun scaleNonUniformSelf(scaleX: Double, scaleY: Double = definedExternally, scaleZ: Double =
definedExternally, originX: Double = definedExternally, originY: Double = definedExternally, originZ: Double =
definedExternally): DOMMatrix\n    fun rotateSelf(angle: Double, originX: Double = definedExternally, originY:
Double = definedExternally):
DOMMatrix\n    fun rotateFromVectorSelf(x: Double, y: Double): DOMMatrix\n    fun rotateAxisAngleSelf(x:
Double, y: Double, z: Double, angle: Double): DOMMatrix\n    fun skewXSelf(sx: Double): DOMMatrix\n    fun
skewYSelf(sy: Double): DOMMatrix\n    fun invertSelf(): DOMMatrix\n    fun setMatrixValue(transformList:
String): DOMMatrix\n}\n\npublic external interface ScrollOptions {\n    var behavior: ScrollBehavior? /* =
ScrollBehavior.AUTO */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollOptions(behavior:
ScrollBehavior? = ScrollBehavior.AUTO): ScrollOptions {\n    val o = js(\"({})\")\n    o[\"behavior\"] = behavior\n
return o\n}\n\n/**\n * Exposes the JavaScript
[ScrollToOptions](https://developer.mozilla.org/en/docs/Web/API/ScrollToOptions) to Kotlin\n */\npublic external
interface ScrollToOptions : ScrollOptions {\n
    var left: Double?\n    get() = definedExternally\n    set(value) = definedExternally\n    var top: Double?\n
get() = definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollToOptions(left: Double? =
undefined, top: Double? = undefined, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollToOptions {\n
    val o = js(\"({})\")\n    o[\"left\"] = left\n    o[\"top\"] = top\n    o[\"behavior\"] = behavior\n    return o\n}\n\n/**\n * Exposes the JavaScript [MediaQueryList](https://developer.mozilla.org/en/docs/Web/API/MediaQueryList) to
Kotlin\n */\npublic external abstract class MediaQueryList : EventTarget {\n    open val media: String\n    open val
matches: Boolean\n    open var onchange: ((Event) -> dynamic)?\n    fun addListener(listener: EventListener?)\n
fun addListener(listener: ((Event) -> Unit)?)\n    fun removeListener(listener: EventListener?)\n
fun removeListener(listener: ((Event) -> Unit)?)\n}\n\n/**\n * Exposes the JavaScript
[MediaQueryListEvent](https://developer.mozilla.org/en/docs/Web/API/MediaQueryListEvent) to Kotlin\n */\npublic external open class MediaQueryListEvent(type: String, eventInitDict: MediaQueryListEventInit =
definedExternally) : Event {\n    open val media: String\n    open val matches: Boolean\n\n    companion object {\n
        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val
BUBBLING_PHASE: Short\n    }\n}\n\npublic external interface MediaQueryListEventInit : EventInit {\n    var
media: String? /* = \"\" */\n    get() = definedExternally\n    set(value) = definedExternally\n    var matches:
Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaQueryListEventInit(media:
String? =
    \"\", matches: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): MediaQueryListEventInit {\n    val o = js(\"({})\")\n    o[\"media\"] = media\n    o[\"matches\"] = matches\n
o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return
o\n}\n\n/**\n * Exposes the JavaScript [Screen](https://developer.mozilla.org/en/docs/Web/API/Screen) to Kotlin\n

```



```

*^/npublic external abstract class Screen {^n  open val availWidth: Int^n  open val availHeight: Int^n  open val
width: Int^n  open val height: Int^n  open val colorDepth: Int^n  open val pixelDepth: Int^n}^n/n/**^n * Exposes
the JavaScript [CaretPosition](https://developer.mozilla.org/en/docs/Web/API/CaretPosition) to Kotlin^n *^/npublic
external abstract class CaretPosition {^n  open val offsetNode: Node^n  open val offset: Int^n  fun
getClientRect(): DOMRect?^n}^n/npublic external interface ScrollIntoViewOptions : ScrollOptions
{^n  var block: ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */^n  get() = definedExternally^n
  set(value) = definedExternally^n  var inline: ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */^n
  get() = definedExternally^n  set(value) = definedExternally^n}^n/n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")^n@kotlin.internal.InlineOnly^npublic inline fun ScrollIntoViewOptions(block:
ScrollLogicalPosition? = ScrollLogicalPosition.CENTER, inline: ScrollLogicalPosition? =
ScrollLogicalPosition.CENTER, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollIntoViewOptions {^n
val o = js("({})")^n  o["block"] = block^n  o["inline"] = inline^n  o["behavior"] = behavior^n  return
o^n}^n/npublic external interface BoxQuadOptions {^n  var box: CSSBoxType? /* = CSSBoxType.BORDER */^n
  get() = definedExternally^n  set(value) = definedExternally^n  var relativeTo: dynamic^n  get() =
definedExternally^n
  set(value) = definedExternally^n}^n/n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")^n@kotlin.internal.InlineOnly^npublic inline fun BoxQuadOptions(box: CSSBoxType?
= CSSBoxType.BORDER, relativeTo: dynamic = undefined): BoxQuadOptions {^n  val o = js("({})")^n
o["box"] = box^n  o["relativeTo"] = relativeTo^n  return o^n}^n/npublic external interface
ConvertCoordinateOptions {^n  var fromBox: CSSBoxType? /* = CSSBoxType.BORDER */^n  get() =
definedExternally^n  set(value) = definedExternally^n  var toBox: CSSBoxType? /* = CSSBoxType.BORDER
*/^n  get() = definedExternally^n  set(value) =
definedExternally^n}^n/n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")^n@kotlin.internal.InlineOnly^npublic inline fun ConvertCoordinateOptions(fromBox:
CSSBoxType? = CSSBoxType.BORDER, toBox: CSSBoxType? = CSSBoxType.BORDER):
ConvertCoordinateOptions {^n  val o = js("({})")^n  o["fromBox"] = fromBox^n  o["toBox"]
= toBox^n  return o^n}^n/n/**^n * Exposes the JavaScript
[GeometryUtils](https://developer.mozilla.org/en/docs/Web/API/GeometryUtils) to Kotlin^n *^/npublic external
interface GeometryUtils {^n  fun getBoxQuads(options: BoxQuadOptions = definedExternally):
Array<DOMQuad>^n  fun convertQuadFromNode(quad: dynamic, from: dynamic, options:
ConvertCoordinateOptions = definedExternally): DOMQuad^n  fun convertRectFromNode(rect:
DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions = definedExternally): DOMQuad^n  fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions =
definedExternally): DOMPoint^n}^n/n/**^n * Exposes the JavaScript
[Touch](https://developer.mozilla.org/en/docs/Web/API/Touch) to Kotlin^n *^/npublic external abstract class Touch
{^n  open val identifier: Int^n  open val target: EventTarget^n  open val screenX: Int^n  open val screenY: Int^n
open val clientX: Int^n  open val clientY: Int^n  open val
pageX: Int^n  open val pageY: Int^n  open val region: String?^n}^n/npublic external abstract class TouchList :
ItemArrayLike<Touch> {^n  override fun item(index: Int):
Touch?^n}^n/n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")^n@kotlin.internal.InlineOnly^npublic inline operator fun TouchList.get(index: Int):
Touch? = asDynamic()[index]^n/npublic external open class TouchEvent : UIEvent {^n  open val touches:
TouchList^n  open val targetTouches: TouchList^n  open val changedTouches: TouchList^n  open val altKey:
Boolean^n  open val metaKey: Boolean^n  open val ctrlKey: Boolean^n  open val shiftKey: Boolean^n^n
companion object {^n  val NONE: Short^n  val CAPTURING_PHASE: Short^n  val AT_TARGET:
Short^n  val BUBBLING_PHASE: Short^n  }^n}^n/n/**^n * Exposes the JavaScript
[Image](https://developer.mozilla.org/en/docs/Web/API/Image) to Kotlin^n *^/npublic external open class
Image(width: Int = definedExternally, height: Int = definedExternally)

```

```

: HTMLImageElement {\n  override var onabort: ((Event) -> dynamic)?\n  override var onblur: ((FocusEvent) ->
dynamic)?\n  override var onCancel: ((Event) -> dynamic)?\n  override var oncanplay: ((Event) -> dynamic)?\n
override var oncanplaythrough: ((Event) -> dynamic)?\n  override var onChange: ((Event) -> dynamic)?\n
override var onclick: ((MouseEvent) -> dynamic)?\n  override var onclose: ((Event) -> dynamic)?\n  override var
oncontextmenu: ((MouseEvent) -> dynamic)?\n  override var oncuechange: ((Event) -> dynamic)?\n  override var
ondblclick: ((MouseEvent) -> dynamic)?\n  override var ondrag: ((DragEvent) -> dynamic)?\n  override var
ondragend: ((DragEvent) -> dynamic)?\n  override var ondragenter: ((DragEvent) -> dynamic)?\n  override var
ondragexit: ((DragEvent) -> dynamic)?\n  override var ondragleave: ((DragEvent) -> dynamic)?\n  override var
ondragover: ((DragEvent) -> dynamic)?\n  override var ondragstart: ((DragEvent) ->
dynamic)?\n  override var ondrop: ((DragEvent) -> dynamic)?\n  override var ondurationchange: ((Event) ->
dynamic)?\n  override var onemptied: ((Event) -> dynamic)?\n  override var onended: ((Event) -> dynamic)?\n
override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n  override var onfocus: ((FocusEvent) ->
dynamic)?\n  override var oninput: ((InputEvent) -> dynamic)?\n  override var oninvalid: ((Event) -> dynamic)?\n
override var onkeydown: ((KeyboardEvent) -> dynamic)?\n  override var onkeypress: ((KeyboardEvent) ->
dynamic)?\n  override var onkeyup: ((KeyboardEvent) -> dynamic)?\n  override var onload: ((Event) ->
dynamic)?\n  override var onloadeddata: ((Event) -> dynamic)?\n  override var onloadedmetadata: ((Event) ->
dynamic)?\n  override var onloadend: ((Event) -> dynamic)?\n  override var onloadstart: ((ProgressEvent) ->
dynamic)?\n  override var onmousedown: ((MouseEvent) -> dynamic)?\n  override var onmouseenter:
(MouseEvent)
-> dynamic)?\n  override var onmouseleave: ((MouseEvent) -> dynamic)?\n  override var onmousemove:
(MouseEvent) -> dynamic)?\n  override var onmouseout: ((MouseEvent) -> dynamic)?\n  override var
onmouseover: ((MouseEvent) -> dynamic)?\n  override var onmouseup: ((MouseEvent) -> dynamic)?\n  override
var onwheel: ((WheelEvent) -> dynamic)?\n  override var onpause: ((Event) -> dynamic)?\n  override var onplay:
(Event) -> dynamic)?\n  override var onplaying: ((Event) -> dynamic)?\n  override var onprogress:
(ProgressEvent) -> dynamic)?\n  override var onratechange: ((Event) -> dynamic)?\n  override var onreset:
(Event) -> dynamic)?\n  override var onresize: ((Event) -> dynamic)?\n  override var onscroll: ((Event) ->
dynamic)?\n  override var onseeked: ((Event) -> dynamic)?\n  override var onseeking: ((Event) -> dynamic)?\n
override var onselect: ((Event) -> dynamic)?\n  override var onshow: ((Event) -> dynamic)?\n  override var
onstalled:
(Event) -> dynamic)?\n  override var onsubmit: ((Event) -> dynamic)?\n  override var onsuspend: ((Event) ->
dynamic)?\n  override var ontimeupdate: ((Event) -> dynamic)?\n  override var ontoggle: ((Event) -> dynamic)?\n
override var onvolumechange: ((Event) -> dynamic)?\n  override var onwaiting: ((Event) -> dynamic)?\n
override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override var onlostpointercapture:
(PointerEvent) -> dynamic)?\n  override var onpointerdown: ((PointerEvent) -> dynamic)?\n  override var
onpointermove: ((PointerEvent) -> dynamic)?\n  override var onpointerup: ((PointerEvent) -> dynamic)?\n
override var onpointercancel: ((PointerEvent) -> dynamic)?\n  override var onpointerover: ((PointerEvent) ->
dynamic)?\n  override var onpointerout: ((PointerEvent) -> dynamic)?\n  override var onpointerenter:
(PointerEvent) -> dynamic)?\n  override var onpointerleave: ((PointerEvent) -> dynamic)?\n  override var
oncopy: ((ClipboardEvent)
-> dynamic)?\n  override var oncut: ((ClipboardEvent) -> dynamic)?\n  override var onpaste: ((ClipboardEvent) -
> dynamic)?\n  override var contentEditable: String\n  override val isContentEditable: Boolean\n  override val
style: CSSStyleDeclaration\n  override val children: HTMLCollection\n  override val firstElementChild:
Element?\n  override val lastElementChild: Element?\n  override val childElementCount: Int\n  override val
previousElementSibling: Element?\n  override val nextElementSibling: Element?\n  override val assignedSlot:
HTMLSlotElement?\n  override fun prepend(vararg nodes: dynamic)\n  override fun append(vararg nodes:
dynamic)\n  override fun querySelector(selectors: String): Element?\n  override fun querySelectorAll(selectors:
String): NodeList\n  override fun before(vararg nodes: dynamic)\n  override fun after(vararg nodes: dynamic)\n
override fun replaceWith(vararg nodes: dynamic)\n  override fun remove()\n  override

```

```

fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n  override fun
convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally
*/): DOMQuad\n  override fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options:
ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override fun convertPointFromNode(point:
DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\npublic external open class
Audio(src: String = definedExternally) : HTMLAudioElement {\n  override var onabort: ((Event) -> dynamic)?\n
override var onblur: ((FocusEvent) -> dynamic)?\n  override var oncancel: ((Event) -> dynamic)?\n  override var
oncanplay: ((Event) -> dynamic)?\n  override var oncanplaythrough: ((Event) -> dynamic)?\n  override var
onchange: ((Event) -> dynamic)?\n  override var onclick: ((MouseEvent) -> dynamic)?\n  override var onclose:
((Event) -> dynamic)?\n  override var oncontextmenu: ((MouseEvent) -> dynamic)?\n  override var oncuechange:
((Event) -> dynamic)?\n  override var ondblclick: ((MouseEvent) -> dynamic)?\n  override var ondrag:
((DragEvent) -> dynamic)?\n  override var ondragend: ((DragEvent) -> dynamic)?\n  override var ondragenter:
((DragEvent) -> dynamic)?\n  override var ondragexit: ((DragEvent) -> dynamic)?\n  override var ondragleave:
((DragEvent) -> dynamic)?\n  override var ondragover: ((DragEvent) -> dynamic)?\n  override var ondragstart:
((DragEvent) -> dynamic)?\n  override var ondrop: ((DragEvent) -> dynamic)?\n  override var ondurationchange:
((Event) -> dynamic)?\n  override var onemptied: ((Event) -> dynamic)?\n  override var onended: ((Event) ->
dynamic)?\n  override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n  override var onfocus:
((FocusEvent) -> dynamic)?\n  override var oninput: ((InputEvent) -> dynamic)?\n  override var oninvalid:
((Event) -> dynamic)?\n  override var onkeydown: ((KeyboardEvent) -> dynamic)?\n  override var onkeypress:
((KeyboardEvent) -> dynamic)?\n  override var onkeyup: ((KeyboardEvent) -> dynamic)?\n  override
var onload: ((Event) -> dynamic)?\n  override var onloadeddata: ((Event) -> dynamic)?\n  override var
onloadedmetadata: ((Event) -> dynamic)?\n  override var onloadend: ((Event) -> dynamic)?\n  override var
onloadstart: ((ProgressEvent) -> dynamic)?\n  override var onmousedown: ((MouseEvent) -> dynamic)?\n
override var onmouseenter: ((MouseEvent) -> dynamic)?\n  override var onmouseleave: ((MouseEvent) ->
dynamic)?\n  override var onmousemove: ((MouseEvent) -> dynamic)?\n  override var onmouseout:
((MouseEvent) -> dynamic)?\n  override var onmouseover: ((MouseEvent) -> dynamic)?\n  override var
onmouseup: ((MouseEvent) -> dynamic)?\n  override var onwheel: ((WheelEvent) -> dynamic)?\n  override var
onpause: ((Event) -> dynamic)?\n  override var onplay: ((Event) -> dynamic)?\n  override var onplaying: ((Event)
-> dynamic)?\n  override var onprogress: ((ProgressEvent) -> dynamic)?\n  override var onratechange: ((Event) ->
dynamic)?\n  override var onreset:
((Event) -> dynamic)?\n  override var onresize: ((Event) -> dynamic)?\n  override var onscroll: ((Event) ->
dynamic)?\n  override var onseeked: ((Event) -> dynamic)?\n  override var onseeking: ((Event) -> dynamic)?\n
override var onselect: ((Event) -> dynamic)?\n  override var onshow: ((Event) -> dynamic)?\n  override var
onstalled: ((Event) -> dynamic)?\n  override var onsubmit: ((Event) -> dynamic)?\n  override var onsuspend:
((Event) -> dynamic)?\n  override var ontimeupdate: ((Event) -> dynamic)?\n  override var ontoggle: ((Event) ->
dynamic)?\n  override var onvolumechange: ((Event) -> dynamic)?\n  override var onwaiting: ((Event) ->
dynamic)?\n  override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override var
onlostpointercapture: ((PointerEvent) -> dynamic)?\n  override var onpointerdown: ((PointerEvent) -> dynamic)?\n
override var onpointermove: ((PointerEvent) -> dynamic)?\n  override var onpointerup: ((PointerEvent)

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-> dynamic)?\n  override var onpointercancel: ((PointerEvent) -> dynamic)?\n  override var onpointerover:
((PointerEvent) -> dynamic)?\n  override var onpointerout: ((PointerEvent) -> dynamic)?\n  override var
onpointerenter: ((PointerEvent) -> dynamic)?\n  override var onpointerleave: ((PointerEvent) -> dynamic)?\n
override var oncopy: ((ClipboardEvent) -> dynamic)?\n  override var oncut: ((ClipboardEvent) -> dynamic)?\n
override var onpaste: ((ClipboardEvent) -> dynamic)?\n  override var contentEditable: String\n  override val
isContentEditable: Boolean\n  override val style: CSSStyleDeclaration\n  override val children:
HTMLCollection\n  override val firstElementChild: Element?\n  override val lastElementChild: Element?\n
override val childElementCount: Int\n  override val previousElementSibling: Element?\n  override val
nextElementSibling: Element?\n  override val assignedSlot: HTMLSlotElement?\n  override fun prepend(vararg
nodes: dynamic)\n
  override fun append(vararg nodes: dynamic)\n  override fun querySelector(selectors: String): Element?\n
override fun querySelectorAll(selectors: String): NodeList\n  override fun before(vararg nodes: dynamic)\n
override fun after(vararg nodes: dynamic)\n  override fun replaceWith(vararg nodes: dynamic)\n  override fun
remove()\n  override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n
  override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n\n  companion object {\n    val NETWORK_EMPTY: Short\n    val
NETWORK_IDLE: Short\n    val NETWORK_LOADING: Short\n
    val NETWORK_NO_SOURCE: Short\n    val HAVE_NOTHING: Short\n    val HAVE_METADATA:
Short\n    val HAVE_CURRENT_DATA: Short\n    val HAVE_FUTURE_DATA: Short\n    val
HAVE_ENOUGH_DATA: Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n
    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the
JavaScript [Option](https://developer.mozilla.org/en/docs/Web/API/Option) to Kotlin\n * ^\npublic external open
class Option(text: String = definedExternally, value: String = definedExternally, defaultSelected: Boolean =
definedExternally, selected: Boolean = definedExternally) : HTMLOptionElement {\n  override var onabort:
((Event) -> dynamic)?\n  override var onblur: ((FocusEvent) -> dynamic)?\n  override var oncancel: ((Event) ->
dynamic)?\n  override var oncanplay: ((Event) -> dynamic)?\n  override var oncanplaythrough: ((Event) ->
dynamic)?\n  override var onchange: ((Event) -> dynamic)?\n  override var onclick: ((MouseEvent) ->
dynamic)?\n  override var onclose: ((Event) -> dynamic)?\n  override var oncontextmenu: ((MouseEvent) ->
dynamic)?\n  override var oncuechange: ((Event) -> dynamic)?\n  override var ondblclick: ((MouseEvent) ->
dynamic)?\n  override var ondrag: ((DragEvent) -> dynamic)?\n  override var ondragend: ((DragEvent) ->
dynamic)?\n  override
    var ondragenter: ((DragEvent) -> dynamic)?\n  override var ondragexit: ((DragEvent) -> dynamic)?\n  override
    var ondragleave: ((DragEvent) -> dynamic)?\n  override var ondragover: ((DragEvent) -> dynamic)?\n  override
    var ondragstart: ((DragEvent) -> dynamic)?\n  override var ondrop: ((DragEvent) -> dynamic)?\n  override var
ondurationchange: ((Event) -> dynamic)?\n  override var onemptied: ((Event) -> dynamic)?\n  override var
onended: ((Event) -> dynamic)?\n  override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n
override var onfocus: ((FocusEvent) -> dynamic)?\n  override var oninput: ((InputEvent) -> dynamic)?\n
override var oninvalid: ((Event) -> dynamic)?\n  override var onkeydown: ((KeyboardEvent) -> dynamic)?\n
override var

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onkeypress: ((KeyboardEvent) -> dynamic)?\n  override var onkeyup: ((KeyboardEvent) -> dynamic)?\n  override
var onload: ((Event) -> dynamic)?\n  override var onloadeddata: ((Event) -> dynamic)?\n
  override var onloadedmetadata: ((Event) -> dynamic)?\n  override var onloadend: ((Event) -> dynamic)?\n
  override var onloadstart: ((ProgressEvent) -> dynamic)?\n  override var onmousedown: ((MouseEvent) ->
dynamic)?\n  override var onmouseenter: ((MouseEvent) -> dynamic)?\n  override var onmouseleave:
((MouseEvent) -> dynamic)?\n  override var onmousemove: ((MouseEvent) -> dynamic)?\n  override var
onmouseout: ((MouseEvent) -> dynamic)?\n  override var onmouseover: ((MouseEvent) -> dynamic)?\n  override
var onmouseup: ((MouseEvent) -> dynamic)?\n  override var onwheel: ((WheelEvent) -> dynamic)?\n  override
var onpause: ((Event) -> dynamic)?\n  override var onplay: ((Event) -> dynamic)?\n  override var onplaying:
((Event) -> dynamic)?\n  override var onprogress: ((ProgressEvent) -> dynamic)?\n  override var onratechange:
((Event) -> dynamic)?\n  override var onreset: ((Event) -> dynamic)?\n  override var onresize: ((Event) ->
dynamic)?\n  override
var onscroll: ((Event) -> dynamic)?\n  override var onseeked: ((Event) -> dynamic)?\n  override var onseeking:
((Event) -> dynamic)?\n  override var onselect: ((Event) -> dynamic)?\n  override var onshow: ((Event) ->
dynamic)?\n  override var onstalled: ((Event) -> dynamic)?\n  override var onsubmit: ((Event) -> dynamic)?\n
  override var onsuspend: ((Event) -> dynamic)?\n  override var ontimeupdate: ((Event) -> dynamic)?\n  override
var ontoggle: ((Event) -> dynamic)?\n  override var onvolumechange: ((Event) -> dynamic)?\n  override var
onwaiting: ((Event) -> dynamic)?\n  override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override
var onlostpointercapture: ((PointerEvent) -> dynamic)?\n  override var onpointerdown: ((PointerEvent) ->
dynamic)?\n  override var onpointermove: ((PointerEvent) -> dynamic)?\n  override var onpointerup:
((PointerEvent) -> dynamic)?\n  override var onpointercancel: ((PointerEvent) -> dynamic)?\n  override
var onpointerover: ((PointerEvent) -> dynamic)?\n  override var onpointerout: ((PointerEvent) -> dynamic)?\n
  override var onpointerenter: ((PointerEvent) -> dynamic)?\n  override var onpointerleave: ((PointerEvent) ->
dynamic)?\n  override var oncopy: ((ClipboardEvent) -> dynamic)?\n  override var oncut: ((ClipboardEvent) ->
dynamic)?\n  override var onpaste: ((ClipboardEvent) -> dynamic)?\n  override var contentEditable: String\n
  override val isContentEditable: Boolean\n  override val style: CSSStyleDeclaration\n  override val children:
HTMLCollection\n  override val firstElementChild: Element?\n  override val lastElementChild: Element?\n
  override val childElementCount: Int\n  override val previousElementSibling: Element?\n  override val
nextElementSibling: Element?\n  override val assignedSlot: HTMLSlotElement?\n  override fun prepend(vararg
nodes: dynamic)\n  override fun append(vararg nodes: dynamic)\n  override fun querySelector(selectors:
String): Element?\n  override fun querySelectorAll(selectors: String): NodeList\n  override fun before(vararg
nodes: dynamic)\n  override fun after(vararg nodes: dynamic)\n  override fun replaceWith(vararg nodes:
dynamic)\n  override fun remove()\n  override fun getBoxQuads(options: BoxQuadOptions /* =
definedExternally */): Array<DOMQuad>\n  override fun convertQuadFromNode(quad: dynamic, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override fun
convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertPointFromNode(point: DOMPointInit, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external interface
UnionElementOrHTMLCollection\n\n  public external interface UnionElementOrRadioNodeList\n\n  public external

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interface UnionHTMLOptGroupElementOrHTMLOptionElement\n\npublic external interface
UnionAudioTrackOrTextTrackOrVideoTrack\n\npublic external interface UnionElementOrMouseEvent\n\npublic
external interface UnionMessagePortOrWindowProxy\n\npublic external interface MediaPlayer\n\npublic
external
interface RenderingContext\n\npublic external interface HTMLOrSVGImageElement :
CanvasImageSource\n\npublic external interface CanvasImageSource : ImageBitmapSource\n\npublic external
interface ImageBitmapSource\n\npublic external interface HTMLOrSVGScriptElement\n\n/* please, don't
implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface DocumentReadyState {\n companion object\n}\n\npublic inline val
DocumentReadyState.Companion.LOADING: DocumentReadyState get() =
"loading".asDynamic().unsafeCast<DocumentReadyState>()\n\npublic inline val
DocumentReadyState.Companion.INTERACTIVE: DocumentReadyState get() =
"interactive".asDynamic().unsafeCast<DocumentReadyState>()\n\npublic inline val
DocumentReadyState.Companion.COMPLETE: DocumentReadyState get() =
"complete".asDynamic().unsafeCast<DocumentReadyState>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic
external interface CanPlayTypeResult {\n companion object\n}\n\npublic inline val
CanPlayTypeResult.Companion.EMPTY: CanPlayTypeResult get() =
"".asDynamic().unsafeCast<CanPlayTypeResult>()\n\npublic inline val CanPlayTypeResult.Companion.MAYBE:
CanPlayTypeResult get() = "maybe".asDynamic().unsafeCast<CanPlayTypeResult>()\n\npublic inline val
CanPlayTypeResult.Companion.PROBABLY: CanPlayTypeResult get() =
"probably".asDynamic().unsafeCast<CanPlayTypeResult>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface TextTrackMode {\n companion object\n}\n\npublic inline val TextTrackMode.Companion.DISABLED:
TextTrackMode get() = "disabled".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.HIDDEN: TextTrackMode get() =
"hidden".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.SHOWING: TextTrackMode
get() = "showing".asDynamic().unsafeCast<TextTrackMode>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface TextTrackKind {\n companion object\n}\n\npublic inline val TextTrackKind.Companion.SUBTITLES:
TextTrackKind get() = "subtitles".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.CAPTIONS: TextTrackKind get() =
"captions".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.DESCRPTIONS: TextTrackKind get() =
"descriptions".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.CHAPTERS: TextTrackKind get() =
"chapters".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.METADATA: TextTrackKind get() =
"metadata".asDynamic().unsafeCast<TextTrackKind>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic
external interface SelectionMode {\n companion object\n}\n\npublic inline val
SelectionMode.Companion.SELECT: SelectionMode get() =
"select".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val SelectionMode.Companion.START:
SelectionMode get() = "start".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val
SelectionMode.Companion.END: SelectionMode get() =
"end".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val SelectionMode.Companion.PRESERVE:

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SelectionMode get() = \"preserve\".asDynamic().unsafeCast<SelectionMode>()\n\n/* please, don't implement this
interface! *\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface CanvasFillRule {\n  companion object\n}\n\npublic inline val
CanvasFillRule.Companion.NONZERO: CanvasFillRule get() =
\"nonzero\".asDynamic().unsafeCast<CanvasFillRule>()\n\npublic inline val
CanvasFillRule.Companion.EVENODD: CanvasFillRule get() =
\"evenodd\".asDynamic().unsafeCast<CanvasFillRule>()\n\n/*
please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ImageSmoothingQuality {\n  companion object\n}\n\npublic inline val
ImageSmoothingQuality.Companion.LOW: ImageSmoothingQuality get() =
\"low\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\npublic inline val
ImageSmoothingQuality.Companion.MEDIUM: ImageSmoothingQuality get() =
\"medium\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\npublic inline val
ImageSmoothingQuality.Companion.HIGH: ImageSmoothingQuality get() =
\"high\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasLineCap {\n  companion object\n}\n\npublic inline val CanvasLineCap.Companion.BUTT:
CanvasLineCap get() = \"butt\".asDynamic().unsafeCast<CanvasLineCap>()\n\npublic
inline val CanvasLineCap.Companion.ROUND: CanvasLineCap get() =
\"round\".asDynamic().unsafeCast<CanvasLineCap>()\n\npublic inline val CanvasLineCap.Companion.SQUARE:
CanvasLineCap get() = \"square\".asDynamic().unsafeCast<CanvasLineCap>()\n\n/* please, don't implement this
interface! *\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface CanvasLineJoin {\n  companion object\n}\n\npublic inline val
CanvasLineJoin.Companion.ROUND: CanvasLineJoin get() =
\"round\".asDynamic().unsafeCast<CanvasLineJoin>()\n\npublic inline val CanvasLineJoin.Companion.BEVEL:
CanvasLineJoin get() = \"bevel\".asDynamic().unsafeCast<CanvasLineJoin>()\n\npublic inline val
CanvasLineJoin.Companion.MITER: CanvasLineJoin get() =
\"miter\".asDynamic().unsafeCast<CanvasLineJoin>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasTextAlign {\n  companion object\n}\n\npublic
inline val CanvasTextAlign.Companion.START: CanvasTextAlign get() =
\"start\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val CanvasTextAlign.Companion.END:
CanvasTextAlign get() = \"end\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.LEFT: CanvasTextAlign get() =
\"left\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val CanvasTextAlign.Companion.RIGHT:
CanvasTextAlign get() = \"right\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.CENTER: CanvasTextAlign get() =
\"center\".asDynamic().unsafeCast<CanvasTextAlign>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasTextBaseline {\n  companion object\n}\n\npublic inline val CanvasTextBaseline.Companion.TOP:
CanvasTextBaseline get() = \"top\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.HANGING:
CanvasTextBaseline get() = \"hanging\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.MIDDLE: CanvasTextBaseline get() =
\"middle\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.ALPHABETIC: CanvasTextBaseline get() =
\"alphabetic\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val

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CanvasTextBaseline.Companion.IDEOGRAPHIC: CanvasTextBaseline get() =
    \"ideographic\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.BOTTOM: CanvasTextBaseline get() =
    \"bottom\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasDirection {\n    companion object\n}\n\npublic inline val CanvasDirection.Companion.LTR:
CanvasDirection get() = \"ltr\".asDynamic().unsafeCast<CanvasDirection>()\n\npublic
    inline val CanvasDirection.Companion.RTL: CanvasDirection get() =
    \"rtl\".asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val CanvasDirection.Companion.INHERIT:
CanvasDirection get() = \"inherit\".asDynamic().unsafeCast<CanvasDirection>()\n\n/* please, don't implement this
interface! *\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface ScrollRestoration {\n    companion object\n}\n\npublic inline val
ScrollRestoration.Companion.AUTO: ScrollRestoration get() =
    \"auto\".asDynamic().unsafeCast<ScrollRestoration>()\n\npublic inline val
ScrollRestoration.Companion.MANUAL: ScrollRestoration get() =
    \"manual\".asDynamic().unsafeCast<ScrollRestoration>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ImageOrientation {\n    companion object\n}\n\npublic inline val ImageOrientation.Companion.NONE:
ImageOrientation get()
    = \"none\".asDynamic().unsafeCast<ImageOrientation>()\n\npublic inline val
ImageOrientation.Companion.FLIPY: ImageOrientation get() =
    \"flipY\".asDynamic().unsafeCast<ImageOrientation>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface PremultiplyAlpha {\n    companion object\n}\n\npublic inline val PremultiplyAlpha.Companion.NONE:
PremultiplyAlpha get() = \"none\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.PREMULTIPLY: PremultiplyAlpha get() =
    \"premultiply\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.DEFAULT: PremultiplyAlpha get() =
    \"default\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ColorSpaceConversion {\n    companion object\n}\n\npublic inline
    val ColorSpaceConversion.Companion.NONE: ColorSpaceConversion get() =
    \"none\".asDynamic().unsafeCast<ColorSpaceConversion>()\n\npublic inline val
ColorSpaceConversion.Companion.DEFAULT: ColorSpaceConversion get() =
    \"default\".asDynamic().unsafeCast<ColorSpaceConversion>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ResizeQuality {\n    companion object\n}\n\npublic inline val ResizeQuality.Companion.PIXELATED:
ResizeQuality get() = \"pixelated\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val
ResizeQuality.Companion.LOW: ResizeQuality get() =
    \"low\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val ResizeQuality.Companion.MEDIUM:
ResizeQuality get() = \"medium\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val
ResizeQuality.Companion.HIGH: ResizeQuality get() = \"high\".asDynamic().unsafeCast<ResizeQuality>()\n\n/*
please, don't implement this
interface! *\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface BinaryType {\n    companion object\n}\n\npublic inline val BinaryType.Companion.BLOB:
BinaryType get() = \"blob\".asDynamic().unsafeCast<BinaryType>()\n\npublic inline val
BinaryType.Companion.ARRAYBUFFER: BinaryType get() =
    \"arraybuffer\".asDynamic().unsafeCast<BinaryType>()\n\n/* please, don't implement this interface!

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*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface WorkerType {\n  companion object\n}\n\npublic inline val WorkerType.Companion.CLASSIC:
WorkerType get() = "classic".asDynamic().unsafeCast<WorkerType>()\n\npublic inline val
WorkerType.Companion.MODULE: WorkerType get() =
"module".asDynamic().unsafeCast<WorkerType>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ShadowRootMode {\n  companion object\n}\n\npublic
inline val ShadowRootMode.Companion.OPEN: ShadowRootMode get() =
"open".asDynamic().unsafeCast<ShadowRootMode>()\n\npublic inline val
ShadowRootMode.Companion.CLOSED: ShadowRootMode get() =
"closed".asDynamic().unsafeCast<ShadowRootMode>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ScrollBehavior {\n  companion object\n}\n\npublic inline val ScrollBehavior.Companion.AUTO:
ScrollBehavior get() = "auto".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic inline val
ScrollBehavior.Companion.INSTANT: ScrollBehavior get() =
"instant".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic inline val ScrollBehavior.Companion.SMOOTH:
ScrollBehavior get() = "smooth".asDynamic().unsafeCast<ScrollBehavior>()\n\n/* please, don't implement this
interface! *\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface ScrollLogicalPosition {\n
  companion object\n}\n\npublic inline val ScrollLogicalPosition.Companion.START: ScrollLogicalPosition get() =
"start".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.CENTER: ScrollLogicalPosition get() =
"center".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.END: ScrollLogicalPosition get() =
"end".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.NEAREST: ScrollLogicalPosition get() =
"nearest".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface CSSBoxType {\n  companion object\n}\n\npublic inline val CSSBoxType.Companion.MARGIN:
CSSBoxType get() = "margin".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val
CSSBoxType.Companion.BORDER: CSSBoxType get() =
"border".asDynamic().unsafeCast<CSSBoxType>()\n\npublic
inline val CSSBoxType.Companion.PADDING: CSSBoxType get() =
"padding".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val CSSBoxType.Companion.CONTENT:
CSSBoxType get() = "content".asDynamic().unsafeCast<CSSBoxType>()"}\n\n/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED,
DO NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.fetch\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.files.*\nimport org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript
[Headers](https://developer.mozilla.org/en/docs/Web/API/Headers) to Kotlin\n *\n\npublic external open class
Headers(init: dynamic = definedExternally) {\n  fun append(name: String, value: String)\n  fun delete(name:
String)\n  fun get(name: String): String?\n
  fun has(name: String): Boolean\n  fun set(name: String, value: String)\n}\n\n/**\n * Exposes the JavaScript
[Body](https://developer.mozilla.org/en/docs/Web/API/Body) to Kotlin\n *\n\npublic external interface Body {\n
val bodyUsed: Boolean\n  fun arrayBuffer(): Promise<ArrayBuffer>\n  fun blob(): Promise<Blob>\n  fun
formData(): Promise<FormData>\n  fun json(): Promise<Any?>\n  fun text(): Promise<String>\n}\n\n/**\n *
Exposes the JavaScript [Request](https://developer.mozilla.org/en/docs/Web/API/Request) to Kotlin\n *\n\npublic
external open class Request(input: dynamic, init: RequestInit = definedExternally) : Body {\n  open val method:

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String\n open val url: String\n open val headers: Headers\n open val type: RequestType\n open val
destination: RequestDestination\n open val referrer: String\n open val referrerPolicy: dynamic\n open val
mode: RequestMode\n open val credentials: RequestCredentials\n open val cache: RequestCache\n open
val redirect: RequestRedirect\n open val integrity: String\n open val keepalive: Boolean\n override val
bodyUsed: Boolean\n fun clone(): Request\n override fun arrayBuffer(): Promise<ArrayBuffer>\n override fun
blob(): Promise<Blob>\n override fun formData(): Promise<FormData>\n override fun json():
Promise<Any?>\n override fun text(): Promise<String>\n}\n\npublic external interface RequestInit {\n var
method: String?\n get() = definedExternally\n set(value) = definedExternally\n var headers: dynamic\n
get() = definedExternally\n set(value) = definedExternally\n var body: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var referrer: String?\n get() = definedExternally\n
set(value) = definedExternally\n var referrerPolicy: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var mode: RequestMode?\n get() = definedExternally\n
set(value) = definedExternally\n var credentials: RequestCredentials?\n get() = definedExternally\n
set(value) = definedExternally\n var cache: RequestCache?\n get() = definedExternally\n set(value) =
definedExternally\n var redirect: RequestRedirect?\n get() = definedExternally\n set(value) =
definedExternally\n var integrity: String?\n get() = definedExternally\n set(value) = definedExternally\n
var keepalive: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var window:
Any?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun RequestInit(method: String? =
undefined, headers: dynamic = undefined, body: dynamic = undefined, referrer: String? = undefined, referrerPolicy:
dynamic = undefined, mode: RequestMode? = undefined, credentials:
RequestCredentials? = undefined, cache: RequestCache? = undefined, redirect: RequestRedirect? = undefined,
integrity: String? = undefined, keepalive: Boolean? = undefined, window: Any? = undefined): RequestInit {\n var
o = js(\"({})\")\n o[\"method\"] = method\n o[\"headers\"] = headers\n o[\"body\"] = body\n o[\"referrer\"] =
referrer\n o[\"referrerPolicy\"] = referrerPolicy\n o[\"mode\"] = mode\n o[\"credentials\"] = credentials\n
o[\"cache\"] = cache\n o[\"redirect\"] = redirect\n o[\"integrity\"] = integrity\n o[\"keepalive\"] = keepalive\n
o[\"window\"] = window\n return o\n}\n\n/**\n * Exposes the JavaScript
[Response](https://developer.mozilla.org/en/docs/Web/API/Response) to Kotlin\n */\n\npublic external open class
Response(body: dynamic = definedExternally, init: ResponseInit = definedExternally) : Body {\n open val type:
ResponseType\n open val url: String\n open val redirected: Boolean\n open val status: Short\n open
val ok: Boolean\n open val statusText: String\n open val headers: Headers\n open val body: dynamic\n open
val trailer: Promise<Headers>\n override val bodyUsed: Boolean\n fun clone(): Response\n override fun
arrayBuffer(): Promise<ArrayBuffer>\n override fun blob(): Promise<Blob>\n override fun formData():
Promise<FormData>\n override fun json(): Promise<Any?>\n override fun text(): Promise<String>\n\n
companion object {\n fun error(): Response\n fun redirect(url: String, status: Short = definedExternally):
Response\n }\n}\n\npublic external interface ResponseInit {\n var status: Short? /* = 200 */\n get() =
definedExternally\n set(value) = definedExternally\n var statusText: String? /* = \"OK\" */\n get() =
definedExternally\n set(value) = definedExternally\n var headers: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
inline fun ResponseInit(status: Short? = 200, statusText: String? = \"OK\", headers: dynamic = undefined):
ResponseInit {\n var o = js(\"({})\")\n o[\"status\"] = status\n o[\"statusText\"] = statusText\n o[\"headers\"]
= headers\n return o\n}\n\n/** please, don't implement this interface!\n */\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestType {\n companion object\n}\n\npublic inline val RequestType.Companion.EMPTY:
RequestType get() = \"\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.AUDIO: RequestType get() =

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\"audio\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.FONT:
RequestType get() = \"font\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.IMAGE: RequestType get() =
\"image\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.SCRIPT:
RequestType get() = \"script\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.STYLE: RequestType get() =
\"style\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.TRACK:
RequestType get() = \"track\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.VIDEO: RequestType get() = \"video\".asDynamic().unsafeCast<RequestType>()\n\n/*
please, don't implement this interface!
*/\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestDestination {\n    companion object\n}\n\npublic inline val
RequestDestination.Companion.EMPTY: RequestDestination get() =
\"\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.DOCUMENT: RequestDestination get() =
\"document\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.EMBED: RequestDestination get() =
\"embed\".asDynamic().unsafeCast<RequestDestination>()\n\npublic
inline val RequestDestination.Companion.FONT: RequestDestination get() =
\"font\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.IMAGE: RequestDestination get() =
\"image\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MANIFEST: RequestDestination get() =
\"manifest\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MEDIA: RequestDestination get() =
\"media\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.OBJECT: RequestDestination get() =
\"object\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.REPORT: RequestDestination get() =
\"report\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SCRIPT: RequestDestination get() =
\"script\".asDynamic().unsafeCast<RequestDestination>()\n\npublic
inline val RequestDestination.Companion.SERVICEWORKER: RequestDestination get() =
\"serviceworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SHAREDWORKER: RequestDestination get() =
\"sharedworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.STYLE: RequestDestination get() =
\"style\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.WORKER: RequestDestination get() =
\"worker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.XSLT: RequestDestination get() =
\"xslt\".asDynamic().unsafeCast<RequestDestination>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestMode {\n    companion object\n}\n\npublic inline val RequestMode.Companion.NAVIGATE:
RequestMode
get() = \"navigate\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.SAME_ORIGIN: RequestMode get() = \"same-
origin\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val RequestMode.Companion.NO_CORS:

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RequestMode get() = \"no-cors\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.CORS: RequestMode get() = \"cors\".asDynamic().unsafeCast<RequestMode>()\n\n/*
please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestCredentials {\n    companion object\n}\n\npublic inline val RequestCredentials.Companion.OMIT:
RequestCredentials get() = \"omit\".asDynamic().unsafeCast<RequestCredentials>()\n\npublic inline val
RequestCredentials.Companion.SAME_ORIGIN: RequestCredentials get() = \"same-
origin\".asDynamic().unsafeCast<RequestCredentials>()\n\npublic inline val
RequestCredentials.Companion.INCLUDE: RequestCredentials get() =
\"include\".asDynamic().unsafeCast<RequestCredentials>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestCache {\n    companion object\n}\n\npublic inline val RequestCache.Companion.DEFAULT:
RequestCache get() = \"default\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.NO_STORE: RequestCache get() = \"no-
store\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val RequestCache.Companion.RELOAD:
RequestCache get() = \"reload\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.NO_CACHE: RequestCache get() = \"no-
cache\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.FORCE_CACHE: RequestCache get() = \"force-
cache\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.ONLY_IF_CACHED: RequestCache get() = \"only-if-
cached\".asDynamic().unsafeCast<RequestCache>()\n\n/*
please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestRedirect {\n    companion object\n}\n\npublic inline val RequestRedirect.Companion.FOLLOW:
RequestRedirect get() = \"follow\".asDynamic().unsafeCast<RequestRedirect>()\n\npublic inline val
RequestRedirect.Companion.ERROR: RequestRedirect get() =
\"error\".asDynamic().unsafeCast<RequestRedirect>()\n\npublic inline val RequestRedirect.Companion.MANUAL:
RequestRedirect get() = \"manual\".asDynamic().unsafeCast<RequestRedirect>()\n\n/* please, don't implement this
interface! */\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface ResponseType {\n    companion object\n}\n\npublic inline val ResponseType.Companion.BASIC:
ResponseType get() = \"basic\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.CORS: ResponseType get() =
\"cors\".asDynamic().unsafeCast<ResponseType>()\n\npublic
inline val ResponseType.Companion.DEFAULT: ResponseType get() =
\"default\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val ResponseType.Companion.ERROR:
ResponseType get() = \"error\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.OPAQUE: ResponseType get() =
\"opaque\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.OPAQUEREDIRECT: ResponseType get() =
\"opaqueredirect\".asDynamic().unsafeCast<ResponseType>())\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.mediacapture\n\nimport
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes
the JavaScript [MediaStream](https://developer.mozilla.org/en/docs/Web/API/MediaStream) to Kotlin\n */\n\npublic
external open class MediaStream() : EventTarget, MediaProvider {\n    constructor(stream: MediaStream)\n
constructor(tracks: Array<MediaStreamTrack>)\n    open val id: String\n    open val active: Boolean\n    var

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onaddtrack: ((MediaStreamTrackEvent) -> dynamic)?\n  var onremovetrack: ((MediaStreamTrackEvent) ->
dynamic)?\n  fun getAudioTracks(): Array<MediaStreamTrack>\n  fun getVideoTracks():
Array<MediaStreamTrack>\n  fun getTracks(): Array<MediaStreamTrack>\n  fun getTrackById(trackId: String):
MediaStreamTrack?\n  fun addTrack(track: MediaStreamTrack)\n  fun removeTrack(track: MediaStreamTrack)\n
  fun clone(): MediaStream\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamTrack](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrack) to Kotlin\n */\npublic
external abstract class MediaStreamTrack : EventTarget {\n  open val kind: String\n
  open val id: String\n  open val label: String\n  open var enabled: Boolean\n  open val muted: Boolean\n  open
var onmute: ((Event) -> dynamic)?\n  open var onunmute: ((Event) -> dynamic)?\n  open val readyState:
MediaStreamTrackState\n  open var onended: ((Event) -> dynamic)?\n  open var onoverconstrained: ((Event) ->
dynamic)?\n  fun clone(): MediaStreamTrack\n  fun stop()\n  fun getCapabilities(): MediaTrackCapabilities\n
fun getConstraints(): MediaTrackConstraints\n  fun getSettings(): MediaTrackSettings\n  fun
applyConstraints(constraints: MediaTrackConstraints = definedExternally): Promise<Unit>\n}\n\n/**\n * Exposes
the JavaScript
[MediaTrackSupportedConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSupportedConstrain
ts) to Kotlin\n */\npublic external interface MediaTrackSupportedConstraints {\n  var width: Boolean? /* = true
*/\n  get() = definedExternally\n  set(value) = definedExternally\n  var height: Boolean? /*
= true */\n  get() = definedExternally\n  set(value) = definedExternally\n  var aspectRatio: Boolean? /* =
true */\n  get() = definedExternally\n  set(value) = definedExternally\n  var frameRate: Boolean? /* = true
*/\n  get() = definedExternally\n  set(value) = definedExternally\n  var facingMode: Boolean? /* = true */\n
  get() = definedExternally\n  set(value) = definedExternally\n  var resizeMode: Boolean? /* = true */\n
  get() = definedExternally\n  set(value) = definedExternally\n  var volume: Boolean? /* = true */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var sampleRate: Boolean? /* = true */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var sampleSize: Boolean? /* = true */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var echoCancellation: Boolean? /* = true */\n  get()
= definedExternally\n
  set(value) = definedExternally\n  var autoGainControl: Boolean? /* = true */\n  get() = definedExternally\n
  set(value) = definedExternally\n  var noiseSuppression: Boolean? /* = true */\n  get() = definedExternally\n
  set(value) = definedExternally\n  var latency: Boolean? /* = true */\n  get() = definedExternally\n
  set(value) = definedExternally\n  var channelCount: Boolean? /* = true */\n  get() = definedExternally\n
  set(value) = definedExternally\n  var deviceId: Boolean? /* = true */\n  get() = definedExternally\n
  set(value) = definedExternally\n  var groupId: Boolean? /* = true */\n  get() = definedExternally\n
  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaTrackSupportedConstraints(width: Boolean? = true, height: Boolean? = true, aspectRatio: Boolean? = true,
frameRate: Boolean? = true, facingMode:
Boolean? = true, resizeMode: Boolean? = true, volume: Boolean? = true, sampleRate: Boolean? = true, sampleSize:
Boolean? = true, echoCancellation: Boolean? = true, autoGainControl: Boolean? = true, noiseSuppression: Boolean?
= true, latency: Boolean? = true, channelCount: Boolean? = true, deviceId: Boolean? = true, groupId: Boolean? =
true): MediaTrackSupportedConstraints {\n  val o = js("{}")\n  o["width"] = width\n  o["height"] =
height\n  o["aspectRatio"] = aspectRatio\n  o["frameRate"] = frameRate\n  o["facingMode"] = facingMode\n
  o["resizeMode"] = resizeMode\n  o["volume"] = volume\n  o["sampleRate"] = sampleRate\n
  o["sampleSize"] = sampleSize\n  o["echoCancellation"] = echoCancellation\n  o["autoGainControl"] =
autoGainControl\n  o["noiseSuppression"] = noiseSuppression\n  o["latency"] = latency\n
  o["channelCount"] = channelCount\n  o["deviceId"] = deviceId\n  o["groupId"] = groupId\n  return
o}\n\npublic
external interface MediaTrackCapabilities {\n  var width: ULongRange?\n  get() = definedExternally\n
set(value) = definedExternally\n  var height: ULongRange?\n  get() = definedExternally\n  set(value) =

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definedExternally\n    var aspectRatio: DoubleRange?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var frameRate: DoubleRange?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var facingMode: Array<String>?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var resizeMode: Array<String>?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var volume: DoubleRange?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var sampleRate: ULongRange?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var sampleSize: ULongRange?\n        get() = definedExternally\n        set(value)
= definedExternally\n    var echoCancellation: Array<Boolean>?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var autoGainControl: Array<Boolean>?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var noiseSuppression: Array<Boolean>?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var latency: DoubleRange?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var channelCount: ULongRange?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var deviceId: String?\n        get() = definedExternally\n        set(value) = definedExternally\n
var groupId: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackCapabilities(width:
ULongRange? = undefined, height: ULongRange? = undefined, aspectRatio:
DoubleRange? = undefined, frameRate: DoubleRange? = undefined, facingMode: Array<String>? = undefined,
resizeMode: Array<String>? = undefined, volume: DoubleRange? = undefined, sampleRate: ULongRange? =
undefined, sampleSize: ULongRange? = undefined, echoCancellation: Array<Boolean>? = undefined,
autoGainControl: Array<Boolean>? = undefined, noiseSuppression: Array<Boolean>? = undefined, latency:
DoubleRange? = undefined, channelCount: ULongRange? = undefined, deviceId: String? = undefined, groupId:
String? = undefined): MediaTrackCapabilities {\n    val o = js(\"({})\")\n    o[\"width\"] = width\n    o[\"height\"] =
height\n    o[\"aspectRatio\"] = aspectRatio\n    o[\"frameRate\"] = frameRate\n    o[\"facingMode\"] = facingMode\n
    o[\"resizeMode\"] = resizeMode\n    o[\"volume\"] = volume\n    o[\"sampleRate\"] = sampleRate\n
    o[\"sampleSize\"] = sampleSize\n    o[\"echoCancellation\"] = echoCancellation\n    o[\"autoGainControl\"] =
autoGainControl\n    o[\"noiseSuppression\"]
= noiseSuppression\n    o[\"latency\"] = latency\n    o[\"channelCount\"] = channelCount\n    o[\"deviceId\"] =
deviceId\n    o[\"groupId\"] = groupId\n    return o\n}\n\n/**\n * Exposes the JavaScript
[MediaTrackConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackConstraints) to Kotlin\n
*\npublic external interface MediaTrackConstraints : MediaTrackConstraintSet {\n    var advanced:
Array<MediaTrackConstraintSet>?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackConstraints(advanced:
Array<MediaTrackConstraintSet>? = undefined, width: dynamic = undefined, height: dynamic = undefined,
aspectRatio: dynamic = undefined, frameRate: dynamic = undefined, facingMode: dynamic = undefined,
resizeMode: dynamic = undefined, volume: dynamic = undefined, sampleRate: dynamic = undefined, sampleSize:
dynamic = undefined, echoCancellation:
dynamic = undefined, autoGainControl: dynamic = undefined, noiseSuppression: dynamic = undefined, latency:
dynamic = undefined, channelCount: dynamic = undefined, deviceId: dynamic = undefined, groupId: dynamic =
undefined): MediaTrackConstraints {\n    val o = js(\"({})\")\n    o[\"advanced\"] = advanced\n    o[\"width\"] =
width\n    o[\"height\"] = height\n    o[\"aspectRatio\"] = aspectRatio\n    o[\"frameRate\"] = frameRate\n
    o[\"facingMode\"] = facingMode\n    o[\"resizeMode\"] = resizeMode\n    o[\"volume\"] = volume\n
    o[\"sampleRate\"] = sampleRate\n    o[\"sampleSize\"] = sampleSize\n    o[\"echoCancellation\"] =
echoCancellation\n    o[\"autoGainControl\"] = autoGainControl\n    o[\"noiseSuppression\"] = noiseSuppression\n
    o[\"latency\"] = latency\n    o[\"channelCount\"] = channelCount\n    o[\"deviceId\"] = deviceId\n    o[\"groupId\"] =
groupId\n    return o\n}\n\npublic external interface MediaTrackConstraintSet {\n    var width: dynamic\n        get()
= definedExternally\n

```

```

    set(value) = definedExternally\n    var height: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var aspectRatio: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var frameRate: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var facingMode: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var resizeMode: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var volume: dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n
var sampleRate: dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n    var sampleSize:
dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n    var echoCancellation: dynamic\n
    get() = definedExternally\n    set(value) = definedExternally\n    var
autoGainControl: dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n    var
noiseSuppression: dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n    var latency:
dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n    var channelCount: dynamic\n
get() = definedExternally\n    set(value) = definedExternally\n    var deviceId: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n    var groupId: dynamic\n    get() = definedExternally\n
    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun MediaTrackConstraintSet(width:
dynamic = undefined, height: dynamic = undefined, aspectRatio: dynamic = undefined, frameRate: dynamic =
undefined, facingMode: dynamic = undefined, resizeMode: dynamic = undefined, volume: dynamic = undefined,
sampleRate: dynamic = undefined,
sampleSize: dynamic = undefined, echoCancellation: dynamic = undefined, autoGainControl: dynamic =
undefined, noiseSuppression: dynamic = undefined, latency: dynamic = undefined, channelCount: dynamic =
undefined, deviceId: dynamic = undefined, groupId: dynamic = undefined): MediaTrackConstraintSet {\n    val o =
js(\"({})\")\n    o[\"width\"] = width\n    o[\"height\"] = height\n    o[\"aspectRatio\"] = aspectRatio\n
o[\"frameRate\"] = frameRate\n    o[\"facingMode\"] = facingMode\n    o[\"resizeMode\"] = resizeMode\n
o[\"volume\"] = volume\n    o[\"sampleRate\"] = sampleRate\n    o[\"sampleSize\"] = sampleSize\n
o[\"echoCancellation\"] = echoCancellation\n    o[\"autoGainControl\"] = autoGainControl\n
o[\"noiseSuppression\"] = noiseSuppression\n    o[\"latency\"] = latency\n    o[\"channelCount\"] = channelCount\n
o[\"deviceId\"] = deviceId\n    o[\"groupId\"] = groupId\n    return o\n}\n\n/**\n * Exposes the JavaScript
[MediaTrackSettings](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSettings)
to Kotlin\n */\n\npublic external interface MediaTrackSettings {\n    var width: Int?\n    get() = definedExternally\n
    set(value) = definedExternally\n    var height: Int?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var aspectRatio: Double?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var frameRate: Double?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var facingMode: String?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var resizeMode: String?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var volume: Double?\n    get() = definedExternally\n    set(value) = definedExternally\n
var sampleRate: Int?\n    get() = definedExternally\n    set(value) = definedExternally\n    var sampleSize:
Int?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var echoCancellation: Boolean?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var autoGainControl: Boolean?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var noiseSuppression: Boolean?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var latency: Double?\n    get() = definedExternally\n    set(value) = definedExternally\n
var channelCount: Int?\n    get() = definedExternally\n    set(value) = definedExternally\n    var deviceId:
String?\n    get() = definedExternally\n    set(value) = definedExternally\n    var groupId: String?\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun MediaTrackSettings(width: Int? =
undefined, height: Int? = undefined, aspectRatio: Double? = undefined, frameRate: Double? = undefined,

```

```

facingMode: String? = undefined, resizeMode: String? = undefined, volume: Double? = undefined, sampleRate:
Int? = undefined, sampleSize: Int? = undefined, echoCancellation: Boolean? = undefined, autoGainControl:
Boolean? = undefined, noiseSuppression: Boolean? = undefined, latency: Double? = undefined, channelCount: Int?
= undefined, deviceId: String? = undefined, groupId: String? = undefined): MediaTrackSettings {
    val o =
    js("{}")
    o["width"] = width
    o["height"] = height
    o["aspectRatio"] = aspectRatio
    o["frameRate"] = frameRate
    o["facingMode"] = facingMode
    o["resizeMode"] = resizeMode
    o["volume"] = volume
    o["sampleRate"] = sampleRate
    o["sampleSize"] = sampleSize
    o["echoCancellation"] = echoCancellation
    o["autoGainControl"] = autoGainControl
    o["noiseSuppression"] = noiseSuppression
    o["latency"] = latency
    o["channelCount"] = channelCount
    o["deviceId"] = deviceId
    o["groupId"]
    = groupId
    return o
}

/** Exposes the JavaScript
[MediaStreamTrackEvent](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrackEvent) to Kotlin
*/
public external open class MediaStreamTrackEvent(type: String, eventInitDict: MediaStreamTrackEventInit) :
Event {
    open val track: MediaStreamTrack
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external interface MediaStreamTrackEventInit : EventInit {
    var track:
MediaStreamTrack?
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun MediaStreamTrackEventInit(track:
MediaStreamTrack?, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
MediaStreamTrackEventInit {
    val o = js("{}")
    o["track"] = track
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"]
    = composed
    return o
}

public external open class OverconstrainedErrorEvent(type: String, eventInitDict:
OverconstrainedErrorEventInit) : Event {
    open val error: dynamic
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external interface OverconstrainedErrorEventInit : EventInit {
    var error: dynamic /* =
null */
    get() = definedExternally
    set(value) =
definedExternally
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun OverconstrainedErrorEventInit(error:
dynamic = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
OverconstrainedErrorEventInit {
    val o = js("{}")
    o["error"] = error
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

/** Exposes the JavaScript [MediaDevices](https://developer.mozilla.org/en/docs/Web/API/MediaDevices) to
Kotlin
*/
public external abstract class MediaDevices : EventTarget {
    open var ondevicechange: ((Event) ->
dynamic)?
    fun enumerateDevices(): Promise<Array<MediaDeviceInfo>>
    fun getSupportedConstraints():
MediaTrackSupportedConstraints
    fun getUserMedia(constraints: MediaStreamConstraints = definedExternally):
Promise<MediaStream>
}

/** Exposes the JavaScript
[MediaDeviceInfo](https://developer.mozilla.org/en/docs/Web/API/MediaDeviceInfo) to Kotlin
*/
public external abstract class MediaDeviceInfo {
    open val deviceId: String
    open val kind: MediaDeviceKind
    open val label: String
    open val groupId: String
    fun toJSON(): dynamic
}

public external abstract class
InputDeviceInfo : MediaDeviceInfo {
    fun getCapabilities(): MediaTrackCapabilities
}

/** Exposes the
JavaScript [MediaStreamConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaStreamConstraints)
to Kotlin
*/
public external interface MediaStreamConstraints {
    var video: dynamic /* = false */
    get()
    = definedExternally
    set(value) = definedExternally
    var audio: dynamic /* = false */
    get() =
definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun MediaStreamConstraints(video:
dynamic = false, audio: dynamic = false): MediaStreamConstraints {
    val o = js("{}")
    o["video"] =
video
    o["audio"] = audio
    return o
}

public external interface ConstrainingPattern {
    var
onoverconstrained: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
}

```



```

fun getCapabilities(): Capabilities\n fun getConstraints(): Constraints\n fun getSettings(): Settings\n fun
applyConstraints(constraints: Constraints = definedExternally):
    Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript
[DoubleRange](https://developer.mozilla.org/en/docs/Web/API/DoubleRange) to Kotlin\n */\npublic external
interface DoubleRange {\n    var max: Double?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var min: Double?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleRange(max: Double? =
undefined, min: Double? = undefined): DoubleRange {\n    val o = js(\"({})\")\n    o[\"max\"] = max\n    o[\"min\"] =
min\n    return o\n}\n\npublic external interface ConstrainDoubleRange : DoubleRange {\n    var exact: Double?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ideal: Double?\n        get() =
definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
inline fun ConstrainDoubleRange(exact: Double? = undefined, ideal: Double? = undefined, max: Double? =
undefined, min: Double? = undefined): ConstrainDoubleRange {\n    val o = js(\"({})\")\n    o[\"exact\"] = exact\n
o[\"ideal\"] = ideal\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return o\n}\n\npublic external interface
ULongRange {\n    var max: Int?\n        get() = definedExternally\n        set(value) = definedExternally\n    var min:
Int?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange(max: Int? = undefined,
min: Int? = undefined): ULongRange {\n    val o = js(\"({})\")\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return
o\n}\n\npublic external interface ConstrainULongRange : ULongRange {\n    var exact: Int?\n        get() =
definedExternally\n        set(value) = definedExternally\n    var ideal:
Int?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainULongRange(exact: Int? =
undefined, ideal: Int? = undefined, max: Int? = undefined, min: Int? = undefined): ConstrainULongRange {\n    val o
= js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return
o\n}\n\n/**\n * Exposes the JavaScript
[ConstrainBooleanParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainBooleanParameters) to
Kotlin\n */\npublic external interface ConstrainBooleanParameters {\n    var exact: Boolean?\n        get() =
definedExternally\n        set(value) = definedExternally\n    var ideal: Boolean?\n        get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainBooleanParameters(exact:
Boolean? = undefined, ideal: Boolean? = undefined): ConstrainBooleanParameters {\n    val o = js(\"({})\")\n
o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    return o\n}\n\n/**\n * Exposes the JavaScript
[ConstrainDOMStringParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainDOMStringParameters)
to Kotlin\n */\npublic external interface ConstrainDOMStringParameters {\n    var exact: dynamic\n        get() =
definedExternally\n        set(value) = definedExternally\n    var ideal: dynamic\n        get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ConstrainDOMStringParameters(exact: dynamic = undefined, ideal: dynamic = undefined):
ConstrainDOMStringParameters {\n    val o = js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    return
o\n}\n\npublic external interface Capabilities\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Capabilities(): Capabilities {\n    val o
= js(\"({})\")\n    return o\n}\n\npublic external interface Settings\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Settings(): Settings {\n    val o =
js(\"({})\")\n    return o\n}\n\npublic external interface ConstraintSet\n@Suppress(\"INVISIBLE_REFERENCE\",

```

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\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline fun ConstraintSet(): ConstraintSet {\n
val o = js("{}")\n return o}\n\npublic external interface Constraints : ConstraintSet {\n var advanced:\n
Array<ConstraintSet>?\n get() = definedExternally\n set(value) =\n
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE"),\n
\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline fun Constraints(advanced:\n
Array<ConstraintSet>? = undefined): Constraints {\n val o = js("{}")\n o["advanced"]\n
= advanced\n return o}\n\n/* please, don't implement this interface!\n
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external\n
interface MediaStreamTrackState {\n companion object\n}\n\npublic inline val\n
MediaStreamTrackState.Companion.LIVE: MediaStreamTrackState get() =\n
"live".asDynamic().unsafeCast<MediaStreamTrackState>()\n\npublic inline val\n
MediaStreamTrackState.Companion.ENDED: MediaStreamTrackState get() =\n
"ended".asDynamic().unsafeCast<MediaStreamTrackState>()\n\n/* please, don't implement this interface!\n
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external\n
interface VideoFacingModeEnum {\n companion object\n}\n\npublic inline val\n
VideoFacingModeEnum.Companion.USER: VideoFacingModeEnum get() =\n
"user".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\npublic inline val\n
VideoFacingModeEnum.Companion.ENVIRONMENT: VideoFacingModeEnum get() =\n
"environment".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\npublic\n
inline val VideoFacingModeEnum.Companion.LEFT: VideoFacingModeEnum get() =\n
"left".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\npublic inline val\n
VideoFacingModeEnum.Companion.RIGHT: VideoFacingModeEnum get() =\n
"right".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\n/* please, don't implement this interface!\n
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external\n
interface VideoResizeModeEnum {\n companion object\n}\n\npublic inline val\n
VideoResizeModeEnum.Companion.NONE: VideoResizeModeEnum get() =\n
"none".asDynamic().unsafeCast<VideoResizeModeEnum>()\n\npublic inline val\n
VideoResizeModeEnum.Companion.CROP_AND_SCALE: VideoResizeModeEnum get() = "crop-and-\n
scale".asDynamic().unsafeCast<VideoResizeModeEnum>()\n\n/* please, don't implement this interface!\n
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external\n
interface MediaDeviceKind {\n companion object\n}\n\npublic inline val\n
MediaDeviceKind.Companion.AUDIOINPUT:\n
MediaDeviceKind get() = "audioinput".asDynamic().unsafeCast<MediaDeviceKind>()\n\npublic inline val\n
MediaDeviceKind.Companion.AUDIOOUTPUT: MediaDeviceKind get() =\n
"audiooutput".asDynamic().unsafeCast<MediaDeviceKind>()\n\npublic inline val\n
MediaDeviceKind.Companion.VIDEOINPUT: MediaDeviceKind get() =\n
"videoinput".asDynamic().unsafeCast<MediaDeviceKind>()), /*\n * Copyright 2010-2021 JetBrains s.r.o. and\n
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that\n
can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT\n
EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.mediasource\n\nimport\n
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes\n
the JavaScript [MediaSource](https://developer.mozilla.org/en/docs/Web/API/MediaSource) to Kotlin\n\n\n@public\n
external open class MediaSource\n
: EventTarget, MediaProvider {\n open val sourceBuffers: SourceBufferList\n open val activeSourceBuffers:\n
SourceBufferList\n open val readyState: ReadyState\n var duration: Double\n var onsourceopen: ((Event) ->\n
dynamic)?\n var onsourceended: ((Event) -> dynamic)?\n var onsourceclose: ((Event) -> dynamic)?\n fun\n
addSourceBuffer(type: String): SourceBuffer\n fun removeSourceBuffer(sourceBuffer: SourceBuffer)\n fun\n
endOfStream(error: EndOfStreamError = definedExternally)\n fun setLiveSeekableRange(start: Double, end:

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Double)\n fun clearLiveSeekableRange()\n\n companion object {\n fun isTypeSupported(type: String):
Boolean\n } }\n\n/**\n * Exposes the JavaScript
[SourceBuffer](https://developer.mozilla.org/en/docs/Web/API/SourceBuffer) to Kotlin\n */\npublic external
abstract class SourceBuffer : EventTarget {\n open var mode: AppendMode\n open val updating: Boolean\n
open val buffered: TimeRanges\n open var timestampOffset:
Double\n open val audioTracks: AudioTrackList\n open val videoTracks: VideoTrackList\n open val
textTracks: TextTrackList\n open var appendWindowStart: Double\n open var appendWindowEnd: Double\n
open var onupdatestart: ((Event) -> dynamic)?\n open var onupdate: ((Event) -> dynamic)?\n open var
onupdateend: ((Event) -> dynamic)?\n open var onerror: ((Event) -> dynamic)?\n open var onabort: ((Event) ->
dynamic)?\n fun appendBuffer(data: dynamic)\n fun abort()\n fun remove(start: Double, end:
Double)\n }\n\n/**\n * Exposes the JavaScript
[SourceBufferList](https://developer.mozilla.org/en/docs/Web/API/SourceBufferList) to Kotlin\n */\npublic
external abstract class SourceBufferList : EventTarget {\n open val length: Int\n open var onaddsourcebuffer:
((Event) -> dynamic)?\n open var onremovesourcebuffer: ((Event) ->
dynamic)?\n }\n\n@Suppress(\n"INVISIBLE_REFERENCE",
\n"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator
fun SourceBufferList.get(index: Int): SourceBuffer? = asDynamic()[index]\n\n/* please, don't implement this
interface! *\n@JsName(\n>null")\n@Suppress(\n"NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface ReadyState {\n companion object\n}\n\npublic inline val ReadyState.Companion.CLOSED:
ReadyState get() = \n"closed".asDynamic().unsafeCast<ReadyState>()\n\npublic inline val
ReadyState.Companion.OPEN: ReadyState get() = \n"open".asDynamic().unsafeCast<ReadyState>()\n\npublic
inline val ReadyState.Companion.ENDED: ReadyState get() =
\n"ended".asDynamic().unsafeCast<ReadyState>()\n\n/* please, don't implement this interface!
*\n@JsName(\n>null")\n@Suppress(\n"NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface EndOfStreamError {\n companion object\n}\n\npublic inline val
EndOfStreamError.Companion.NETWORK: EndOfStreamError get() =
\n"network".asDynamic().unsafeCast<EndOfStreamError>()\n\npublic inline val
EndOfStreamError.Companion.DECODE: EndOfStreamError
get() = \n"decode".asDynamic().unsafeCast<EndOfStreamError>()\n\n/* please, don't implement this interface!
*\n@JsName(\n>null")\n@Suppress(\n"NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface AppendMode {\n companion object\n}\n\npublic inline val AppendMode.Companion.SEGMENTS:
AppendMode get() = \n"segments".asDynamic().unsafeCast<AppendMode>()\n\npublic inline val
AppendMode.Companion.SEQUENCE: AppendMode get() =
\n"sequence".asDynamic().unsafeCast<AppendMode>()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.pointerevents\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external interface
PointerEventInit : MouseEventInit
{\n var pointerId: Int? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var
width: Double? /* = 1.0 */\n get() = definedExternally\n set(value) = definedExternally\n var height:
Double? /* = 1.0 */\n get() = definedExternally\n set(value) = definedExternally\n var pressure: Float? /*
= 0f */\n get() = definedExternally\n set(value) = definedExternally\n var tangentialPressure: Float? /* =
0f */\n get() = definedExternally\n set(value) = definedExternally\n var tiltX: Int? /* = 0 */\n get() =
definedExternally\n set(value) = definedExternally\n var tiltY: Int? /* = 0 */\n get() = definedExternally\n
set(value) = definedExternally\n var twist: Int? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n var pointerType: String? /* = \n"\" */\n get() = definedExternally\n set(value) =
definedExternally\n

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var isPrimary: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun PointerEventInit(pointerId: Int? = 0,
width: Double? = 1.0, height: Double? = 1.0, pressure: Float? = 0f, tangentialPressure: Float? = 0f, tiltX: Int? = 0,
tiltY: Int? = 0, twist: Int? = 0, pointerType: String? = \"\", isPrimary: Boolean? = false, screenX: Int? = 0, screenY:
Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? =
null, region: String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean? = false,
metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn:
Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false, modifierNumLock:
Boolean? = false, modifierScrollLock: Boolean?
= false, modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? =
false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): PointerEventInit {\n    val o = js(\"({})\")\n    o[\"pointerId\"] = pointerId\n    o[\"width\"] =
width\n    o[\"height\"] = height\n    o[\"pressure\"] = pressure\n    o[\"tangentialPressure\"] = tangentialPressure\n
o[\"tiltX\"] = tiltX\n    o[\"tiltY\"] = tiltY\n    o[\"twist\"] = twist\n    o[\"pointerType\"] = pointerType\n
o[\"isPrimary\"] = isPrimary\n    o[\"screenX\"] = screenX\n    o[\"screenY\"] = screenY\n    o[\"clientX\"] =
clientX\n    o[\"clientY\"] = clientY\n    o[\"button\"] = button\n    o[\"buttons\"] = buttons\n    o[\"relatedTarget\"] =
relatedTarget\n    o[\"region\"] = region\n    o[\"ctrlKey\"] = ctrlKey\n    o[\"shiftKey\"] = shiftKey\n    o[\"altKey\"]
= altKey\n    o[\"metaKey\"] = metaKey\n    o[\"modifierAltGraph\"]
= modifierAltGraph\n    o[\"modifierCapsLock\"] = modifierCapsLock\n    o[\"modifierFn\"] = modifierFn\n
o[\"modifierFnLock\"] = modifierFnLock\n    o[\"modifierHyper\"] = modifierHyper\n    o[\"modifierNumLock\"] =
modifierNumLock\n    o[\"modifierScrollLock\"] = modifierScrollLock\n    o[\"modifierSuper\"] = modifierSuper\n
o[\"modifierSymbol\"] = modifierSymbol\n    o[\"modifierSymbolLock\"] = modifierSymbolLock\n    o[\"view\"] =
view\n    o[\"detail\"] = detail\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] =
composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[PointerEvent](https://developer.mozilla.org/en/docs/Web/API/PointerEvent) to Kotlin\n */\n\npublic external open
class PointerEvent(type: String, eventInitDict: PointerEventInit = definedExternally) : MouseEvent {\n    open val
pointerId: Int\n    open val width: Double\n    open val height: Double\n    open val pressure: Float\n    open val
tangentialPressure: Float\n
    open val tiltX: Int\n    open val tiltY: Int\n    open val twist: Int\n    open val pointerType: String\n    open val
isPrimary: Boolean\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n
        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\n\", \"/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED,
DO NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.svg\n\nimport
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.css.*\n\n/**\n * Exposes the
JavaScript [SVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGElement) to Kotlin\n */\n\npublic
external abstract class SVGElement : Element, ElementCSSInlineStyle, GlobalEventHandlers, SVGElementInstance
{\n    open val dataset:
DOMStringMap\n    open val ownerSVGElement: SVGSVGElement?\n    open val viewportElement:
SVGElement?\n    open var tabIndex: Int\n    fun focus()\n    fun blur()\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n

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    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external interface
SVGBoundingBoxOptions
{\n    var fill: Boolean? /* = true */\n        get() = definedExternally\n        set(value) = definedExternally\n    var
stroke: Boolean? /* = false */\n        get() = definedExternally\n        set(value) = definedExternally\n    var markers:
Boolean? /* = false */\n        get() = definedExternally\n        set(value) = definedExternally\n    var clipped:
Boolean? /* = false */\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun SVGBoundingBoxOptions(fill:
Boolean? = true, stroke: Boolean? = false, markers: Boolean? = false, clipped: Boolean? = false):
SVGBoundingBoxOptions {\n    val o = js(\"({})\")\n    o[\"fill\"] = fill\n    o[\"stroke\"] = stroke\n    o[\"markers\"]
= markers\n    o[\"clipped\"] = clipped\n    return o\n}\n\n/**\n * Exposes the JavaScript
[SVGGraphicsElement](https://developer.mozilla.org/en/docs/Web/API/SVGGraphicsElement)
to Kotlin\n */\n\npublic external abstract class SVGGraphicsElement : SVGElement, SVGTests {\n    open val
transform: SVGAnimatedTransformList\n    fun getBBox(options: SVGBoundingBoxOptions = definedExternally):
DOMRect\n    fun getCTM(): DOMMatrix?\n    fun getScreenCTM(): DOMMatrix?\n\n    companion object {\n
val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n\n    /**\n * Exposes the
JavaScript [SVGGeometryElement](https://developer.mozilla.org/en/docs/Web/API/SVGGeometryElement) to
Kotlin\n */\n\n    public external abstract class SVGGeometryElement : SVGGraphicsElement {\n    open val
pathLength: SVGAnimatedNumber\n    fun isPointInFill(point: DOMPoint): Boolean\n    fun isPointInStroke(point:
DOMPoint): Boolean\n    fun getTotalLength(): Float\n    fun getPointAtLength(distance: Float): DOMPoint\n\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED:
Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val
DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n\n    /**\n * Exposes the JavaScript
[SVGNumber](https://developer.mozilla.org/en/docs/Web/API/SVGNumber) to Kotlin\n */\n\n    public external
abstract class SVGNumber {\n    open var value: Float\n}\n\n    /**\n * Exposes the JavaScript
[SVGLength](https://developer.mozilla.org/en/docs/Web/API/SVGLength) to Kotlin\n */\n\n    public external
abstract class SVGLength {\n    open val unitType: Short\n    open var value: Float\n    open var valueInSpecifiedUnits:
Float\n    open var valueAsString: String\n    fun newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits:
Float)\n    fun convertToSpecifiedUnits(unitType: Short)\n\n    companion object {\n        val
SVG_LENGTHTYPE_UNKNOWN: Short\n        val SVG_LENGTHTYPE_NUMBER:
Short\n        val SVG_LENGTHTYPE_PERCENTAGE: Short\n        val SVG_LENGTHTYPE_EMS: Short\n
val SVG_LENGTHTYPE_EXS: Short\n        val SVG_LENGTHTYPE_PX: Short\n        val

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SVG_LENGTHTYPE_CM: Short\n    val SVG_LENGTHTYPE_MM: Short\n    val
SVG_LENGTHTYPE_IN: Short\n    val SVG_LENGTHTYPE_PT: Short\n    val SVG_LENGTHTYPE_PC:
Short\n } \n\n\n * Exposes the JavaScript
[SVGAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAngle) to Kotlin\n * \npublic external abstract
class SVGAngle {\n    open val unitType: Short\n    open var value: Float\n    open var valueInSpecifiedUnits:
Float\n    open var valueAsString: String\n    fun newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits:
Float)\n    fun convertToSpecifiedUnits(unitType: Short)\n\n    companion object {\n        val
SVG_ANGLETYPE_UNKNOWN: Short\n        val SVG_ANGLETYPE_UNSPECIFIED: Short\n        val
SVG_ANGLETYPE_DEG: Short\n        val SVG_ANGLETYPE_RAD: Short\n
        val SVG_ANGLETYPE_GRAD: Short\n    } \n\n\npublic external abstract class SVGNameList {\n    open val
length: Int\n    open val numberOfItems: Int\n    fun clear()\n    fun initialize(newItem: dynamic): dynamic\n    fun
insertItemBefore(newItem: dynamic, index: Int): dynamic\n    fun replaceItem(newItem: dynamic, index: Int):
dynamic\n    fun removeItem(index: Int): dynamic\n    fun appendItem(newItem: dynamic): dynamic\n    fun
getItem(index: Int): dynamic\n} \n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGNameList.get(index: Int):
dynamic = asDynamic()[index] \n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGNameList.set(index: Int,
newItem: dynamic) { asDynamic()[index] = newItem } \n\n\n\n * Exposes the JavaScript
[SVGNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGNumberList) to Kotlin\n * \npublic external
abstract
class SVGNumberList {\n    open val length: Int\n    open val numberOfItems: Int\n    fun clear()\n    fun
initialize(newItem: SVGNumber): SVGNumber\n    fun insertItemBefore(newItem: SVGNumber, index: Int):
SVGNumber\n    fun replaceItem(newItem: SVGNumber, index: Int): SVGNumber\n    fun removeItem(index: Int):
SVGNumber\n    fun appendItem(newItem: SVGNumber): SVGNumber\n    fun getItem(index: Int):
SVGNumber\n} \n\n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGNumberList.get(index:
Int): SVGNumber? = asDynamic()[index] \n\n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGNumberList.set(index:
Int, newItem: SVGNumber) { asDynamic()[index] = newItem } \n\n\n\n * Exposes the JavaScript
[SVGLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGLengthList) to Kotlin\n * \npublic external
abstract class SVGLengthList {\n    open val length: Int\n
    open val numberOfItems: Int\n    fun clear()\n    fun initialize(newItem: SVGLength): SVGLength\n    fun
insertItemBefore(newItem: SVGLength, index: Int): SVGLength\n    fun replaceItem(newItem: SVGLength, index:
Int): SVGLength\n    fun removeItem(index: Int): SVGLength\n    fun appendItem(newItem: SVGLength):
SVGLength\n    fun getItem(index: Int): SVGLength\n} \n\n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGLengthList.get(index:
Int): SVGLength? = asDynamic()[index] \n\n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGLengthList.set(index: Int,
newItem: SVGLength) { asDynamic()[index] = newItem } \n\n\n\n * Exposes the JavaScript
[SVGAnimatedBoolean](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedBoolean) to Kotlin\n * \npublic
external abstract class SVGAnimatedBoolean {\n    open var baseVal: Boolean\n    open val animVal:
Boolean\n} \n\n\n\n\n * Exposes the JavaScript
[SVGAnimatedEnumeration](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedEnumeration) to
Kotlin\n * \npublic external abstract class SVGAnimatedEnumeration {\n    open var baseVal: Short\n    open val
animVal: Short\n} \n\n\n\n\n * Exposes the JavaScript
[SVGAnimatedInteger](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedInteger) to Kotlin\n * \npublic
external abstract class SVGAnimatedInteger {\n    open var baseVal: Int\n    open val animVal:

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Int\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedNumber](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumber) to Kotlin\n *\n\npublic external abstract class SVGAnimatedNumber {\n open var baseVal: Float\n open val animVal: Float\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedLength](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLength) to Kotlin\n *\n\npublic external abstract class SVGAnimatedLength {\n open val baseVal: SVGLength\n open val animVal: SVGLength\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedAngle) to Kotlin\n *\n\npublic external abstract class SVGAnimatedAngle {\n open val baseVal: SVGAngle\n open val animVal: SVGAngle\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedString](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedString) to Kotlin\n *\n\npublic external abstract class SVGAnimatedString {\n open var baseVal: String\n open val animVal: String\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedRect](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedRect) to Kotlin\n *\n\npublic external abstract class SVGAnimatedRect {\n open val baseVal: DOMRect\n open val animVal: DOMRectReadOnly\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumberList) to Kotlin\n *\n\npublic external abstract class SVGAnimatedNumberList {\n open val baseVal: SVGNumberList\n open val animVal: SVGNumberList\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLengthList) to Kotlin\n *\n\npublic external abstract class SVGAnimatedLengthList {\n open val baseVal: SVGLengthList\n open val animVal: SVGLengthList\n}\n\n/**\n * Exposes the JavaScript [SVGStringList](https://developer.mozilla.org/en/docs/Web/API/SVGStringList) to Kotlin\n *\n\npublic external abstract class SVGStringList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun initialize(newItem: String): String\n fun insertItemBefore(newItem: String, index: Int): String\n fun replaceItem(newItem: String, index: Int): String\n fun removeItem(index: Int): String\n fun appendItem(newItem: String): String\n fun getItem(index: Int): String\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGStringList.get(index: Int): String? = asDynamic()[index]\n\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGStringList.set(index: Int, newItem: String) { asDynamic()[index] = newItem }\n\n\n/**\n * Exposes the JavaScript [SVGUnitTypes](https://developer.mozilla.org/en/docs/Web/API/SVGUnitTypes) to Kotlin\n *\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external interface SVGUnitTypes {\n companion object {\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n }\n}\n\n\n/**\n * Exposes the JavaScript [SVGTTests](https://developer.mozilla.org/en/docs/Web/API/SVGTTests) to Kotlin\n *\n\n\npublic external interface SVGTTests {\n val requiredExtensions: SVGStringList\n val systemLanguage: SVGStringList\n}\n\n\npublic external interface SVGFitToViewBox {\n val viewBox: SVGAnimatedRect\n val preserveAspectRatio: SVGAnimatedPreserveAspectRatio\n}\n\n\n/**\n * Exposes the JavaScript [SVGZoomAndPan](https://developer.mozilla.org/en/docs/Web/API/SVGZoomAndPan) to Kotlin\n *\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external interface SVGZoomAndPan {\n var zoomAndPan: Short\n\n companion object {\n val SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val SVG_ZOOMANDPAN_MAGNIFY: Short\n }\n}\n\n\n/**\n * Exposes the JavaScript [SVGURIReference](https://developer.mozilla.org/en/docs/Web/API/SVGURIReference) to Kotlin\n *\n\n\npublic external interface SVGURIReference {\n val href: SVGAnimatedString\n}\n\n\n/**\n * Exposes the JavaScript

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[SVGSVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGSVGElement) to Kotlin\n *\npublic
external abstract class SVGSVGElement : SVGGraphicsElement, SVGFitToViewBox, SVGZoomAndPan,
WindowEventHandlers {\n  open val x: SVGAnimatedLength\n  open val y: SVGAnimatedLength\n  open val
width: SVGAnimatedLength\n  open val
height: SVGAnimatedLength\n  open var currentScale: Float\n  open val currentTranslate:
DOMPointReadOnly\n  fun getIntersectionList(rect: DOMRectReadOnly, referenceElement: SVGElement?):
NodeList\n  fun getEnclosureList(rect: DOMRectReadOnly, referenceElement: SVGElement?): NodeList\n  fun
checkIntersection(element: SVGElement, rect: DOMRectReadOnly): Boolean\n  fun checkEnclosure(element:
SVGElement, rect: DOMRectReadOnly): Boolean\n  fun deselectAll()\n  fun createSVGNumber():
SVGNumber\n  fun createSVGLength(): SVGLength\n  fun createSVGAngle(): SVGAngle\n  fun
createSVGPoint(): DOMPoint\n  fun createSVGMatrix(): DOMMatrix\n  fun createSVGRect(): DOMRect\n
fun createSVGTransform(): SVGTransform\n  fun createSVGTransformFromMatrix(matrix:
DOMMatrixReadOnly): SVGTransform\n  fun getElementById(elementId: String): Element\n  fun
suspendRedraw(maxWaitMilliseconds: Int): Int\n  fun unsuspendRedraw(suspendHandleID: Int)\n  fun
unsuspendRedrawAll()\n
  fun forceRedraw()\n  companion object {\n    val SVG_ZOOMANDPAN_UNKNOWN: Short\n    val
SVG_ZOOMANDPAN_DISABLE: Short\n    val SVG_ZOOMANDPAN_MAGNIFY: Short\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGGElement](https://developer.mozilla.org/en/docs/Web/API/SVGGElement)
to Kotlin\n *\npublic external abstract class SVGGElement : SVGGraphicsElement {\n  companion object {\n
val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external abstract class
SVGUnknownElement : SVGGraphicsElement {\n  companion
object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE:
Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGDefsElement](https://developer.mozilla.org/en/docs/Web/API/SVGDefsElement) to Kotlin\n *\npublic

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external abstract class SVGDefsElement : SVGGraphicsElement {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
    }
}

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

Exposes the JavaScript [SVGDescElement](https://developer.mozilla.org/en/docs/Web/API/SVGDescElement) to Kotlin

public external abstract class SVGDescElement : SVGElement {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
    }
}

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

Exposes the JavaScript [SVGMetadataElement](https://developer.mozilla.org/en/docs/Web/API/SVGMetadataElement) to Kotlin

public external abstract class SVGMetadataElement : SVGElement {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
    }
}

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

Exposes the JavaScript [SVGTitleElement](https://developer.mozilla.org/en/docs/Web/API/SVGTitleElement) to Kotlin

public external abstract class SVGTitleElement : SVGElement {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
    }
}

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

Exposes the JavaScript [SVGSymbolElement](https://developer.mozilla.org/en/docs/Web/API/SVGSymbolElement) to Kotlin

public external abstract class SVGSymbolElement : SVGGraphicsElement, SVGFitToViewBox {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
    }
}

```

```

    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes the JavaScript
[SVGUseElement](https://developer.mozilla.org/en/docs/Web/API/SVGUseElement) to Kotlin \n * \n public external
abstract class SVGUseElement : SVGGraphicsElement, SVGURIReference { \n    open val x:
SVGAnimatedLength \n    open val y: SVGAnimatedLength \n    open val width: SVGAnimatedLength \n
    open val height: SVGAnimatedLength \n    open val instanceRoot: SVGElement? \n    open val
animatedInstanceRoot: SVGElement? \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n public external open class
SVGUseElementShadowRoot : ShadowRoot { \n    companion
object { \n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n public external interface
SVGElementInstance { \n    val correspondingElement: SVGElement? \n    get() = definedExternally \n    val
correspondingUseElement: SVGUseElement? \n    get() = definedExternally \n} \n \n public external
open class ShadowAnimation(source: dynamic, newTarget: dynamic) { \n    open val sourceAnimation:
dynamic \n} \n \n /** \n * Exposes the JavaScript
[SVGSwitchElement](https://developer.mozilla.org/en/docs/Web/API/SVGSwitchElement) to Kotlin \n * \n public
external abstract class SVGSwitchElement : SVGGraphicsElement { \n    companion object { \n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY:

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Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external
interface GetSVGDocument {\n    fun getSVGDocument(): Document\n}\n\n/**\n * Exposes the JavaScript
[SVGStyleElement](https://developer.mozilla.org/en/docs/Web/API/SVGStyleElement) to Kotlin\n
*/\n\npublic
external abstract class SVGStyleElement : SVGElement, LinkStyle {\n    open var type: String\n    open var media:
String\n    open var title: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n
        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGTransform](https://developer.mozilla.org/en/docs/Web/API/SVGTransform) to Kotlin\n
*/\n\npublic external abstract class SVGTransform {\n    open val type: Short\n    open val matrix: DOMMatrix\n
open val angle: Float\n    fun setMatrix(matrix: DOMMatrixReadOnly)\n    fun setTranslate(tx: Float, ty: Float)\n
fun setScale(sx: Float, sy: Float)\n    fun setRotate(angle: Float, cx: Float, cy: Float)\n    fun setSkewX(angle:
Float)\n    fun setSkewY(angle: Float)\n\n    companion object {\n        val SVG_TRANSFORM_UNKNOWN:
Short\n        val SVG_TRANSFORM_MATRIX: Short\n        val SVG_TRANSFORM_TRANSLATE: Short\n
        val SVG_TRANSFORM_SCALE: Short\n        val SVG_TRANSFORM_ROTATE: Short\n
        val SVG_TRANSFORM_SKEWX: Short\n        val SVG_TRANSFORM_SKEWY: Short\n    }\n}\n\n/**\n *
Exposes the JavaScript [SVGTransformList](https://developer.mozilla.org/en/docs/Web/API/SVGTransformList) to
Kotlin\n
*/\n\npublic external abstract class SVGTransformList {\n    open val length: Int\n    open val
numberOfItems: Int\n    fun clear()\n    fun initialize(newItem: SVGTransform): SVGTransform\n    fun
insertItemBefore(newItem: SVGTransform, index: Int): SVGTransform\n    fun replaceItem(newItem:
SVGTransform, index: Int): SVGTransform\n    fun removeItem(index: Int): SVGTransform\n    fun
appendItem(newItem: SVGTransform): SVGTransform\n    fun createSVGTransformFromMatrix(matrix:
DOMMatrixReadOnly): SVGTransform\n    fun consolidate(): SVGTransform?\n    fun getItem(index: Int):
SVGTransform\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGTransformList.get(index:
Int): SVGTransform? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGTransformList.set(index:
Int, newItem: SVGTransform) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGAnimatedTransformList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedTransformList) to
Kotlin\n
*/\n\npublic external abstract class SVGAnimatedTransformList {\n    open val baseVal:
SVGTransformList\n    open val animVal: SVGTransformList\n}\n\n/**\n * Exposes the JavaScript
[SVGPreserveAspectRatio](https://developer.mozilla.org/en/docs/Web/API/SVGPreserveAspectRatio) to Kotlin\n
*/\n\npublic external abstract class SVGPreserveAspectRatio {\n    open var align: Short\n    open var meetOrSlice:
Short\n\n    companion object {\n        val SVG_PRESERVEASPECTRATIO_UNKNOWN: Short\n        val
SVG_PRESERVEASPECTRATIO_NONE: Short\n        val SVG_PRESERVEASPECTRATIO_XMINYMIN:
Short\n        val SVG_PRESERVEASPECTRATIO_XMIDYMIN: Short\n
        val SVG_PRESERVEASPECTRATIO_XMAXYMIN: Short\n        val
SVG_PRESERVEASPECTRATIO_XMINYMID: Short\n        val
SVG_PRESERVEASPECTRATIO_XMIDYMID: Short\n        val
SVG_PRESERVEASPECTRATIO_XMAXYMID: Short\n        val
SVG_PRESERVEASPECTRATIO_XMINYMAX: Short\n        val
SVG_PRESERVEASPECTRATIO_XMIDYMAX: Short\n    }\n}\n\n

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SVG_PRESERVEASPECTRATIO_XMAXYMAX: Short\n    val SVG_MEETORSLICE_UNKNOWN: Short\n
    val SVG_MEETORSLICE_MEET: Short\n    val SVG_MEETORSLICE_SLICE: Short\n    }\n}\n\n/**\n *
Exposes the JavaScript
[SVGAnimatedPreserveAspectRatio](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPreserveAspect
Ratio) to Kotlin\n */\npublic external abstract class SVGAnimatedPreserveAspectRatio {\n    open val baseVal:
SVGPreserveAspectRatio\n    open val animVal: SVGPreserveAspectRatio\n}\n\n/**\n * Exposes the JavaScript
[SVGPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGPathElement) to Kotlin\n */\npublic
external abstract class SVGPathElement : SVGGeometryElement
{\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGRectElement](https://developer.mozilla.org/en/docs/Web/API/SVGRectElement) to Kotlin\n */\npublic
external abstract class SVGRectElement : SVGGeometryElement {\n
    open val x: SVGAnimatedLength\n    open val y: SVGAnimatedLength\n    open val width:
SVGAnimatedLength\n    open val height: SVGAnimatedLength\n    open val rx: SVGAnimatedLength\n    open
val ry: SVGAnimatedLength\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGCircleElement](https://developer.mozilla.org/en/docs/Web/API/SVGCircleElement)
to Kotlin\n */\npublic external abstract class SVGCircleElement : SVGGeometryElement {\n    open val cx:
SVGAnimatedLength\n    open val cy: SVGAnimatedLength\n    open val r: SVGAnimatedLength\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGEllipseElement](https://developer.mozilla.org/en/docs/Web/API/SVGEllipseElement) to
Kotlin\n */\npublic external abstract class SVGEllipseElement : SVGGeometryElement {\n    open val cx:
SVGAnimatedLength\n    open val cy: SVGAnimatedLength\n    open val rx: SVGAnimatedLength\n    open val ry:
SVGAnimatedLength\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val

```

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ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [SVGLineElement](https://developer.mozilla.org/en/docs/Web/API/SVGLineElement) to Kotlin\n
*\n\npublic external abstract class SVGLineElement : SVGGeometryElement {\n    open val x1:
SVGAnimatedLength\n    open val y1: SVGAnimatedLength\n    open val x2: SVGAnimatedLength\n    open val
y2: SVGAnimatedLength\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE:
Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGMeshElement](https://developer.mozilla.org/en/docs/Web/API/SVGMeshElement) to Kotlin\n
*\n\npublic external abstract class SVGMeshElement : SVGGeometryElement, SVGURIReference {\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE:
Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGAnimatedPoints](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPoints) to
Kotlin\n
*\n\npublic external interface SVGAnimatedPoints {\n    val points: SVGPointList\n    val animatedPoints:
SVGPointList\n}\n\npublic external abstract class SVGPointList {\n    open val length: Int\n    open val
numberOfItems: Int\n    fun clear()\n    fun initialize(newItem: DOMPoint): DOMPoint\n    fun
insertItemBefore(newItem: DOMPoint, index: Int): DOMPoint\n    fun replaceItem(newItem: DOMPoint, index:
Int): DOMPoint\n    fun removeItem(index: Int): DOMPoint\n    fun appendItem(newItem: DOMPoint):
DOMPoint\n\n    fun getItem(index: Int): DOMPoint\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGPointList.get(index: Int):
DOMPoint? = asDynamic()[index]\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGPointList.set(index: Int,
newItem: DOMPoint) { asDynamic()[index] = newItem }\n}\n\n/**\n * Exposes the JavaScript
[SVGPolylineElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolylineElement) to Kotlin\n
*\n\npublic external abstract class SVGPolylineElement : SVGGeometryElement, SVGAnimatedPoints {\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:

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Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n
    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val
NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGPolygonElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolygonElement) to
Kotlin\n */\npublic external abstract class SVGPolygonElement : SVGGeometryElement, SVGAnimatedPoints {\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE:
Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n
val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript
[SVGTextContentElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextContentElement) to Kotlin\n
*/\npublic external abstract class SVGTextContentElement : SVGGraphicsElement {\n    open val textLength:
SVGAnimatedLength\n    open val lengthAdjust: SVGAnimatedEnumeration\n    fun getNumberOfChars(): Int\n
fun getComputedTextLength(): Float\n    fun getSubStringLength(charnum: Int, nchars: Int): Float\n    fun
getStartPositionOfChar(charnum: Int): DOMPoint\n    fun getEndPositionOfChar(charnum: Int): DOMPoint\n
    fun getExtentOfChar(charnum: Int): DOMRect\n    fun getRotationOfChar(charnum: Int): Float\n    fun
getCharNumAtPosition(point: DOMPoint): Int\n    fun selectSubString(charnum: Int, nchars: Int)\n\n    companion
object {\n    val LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n
val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGTextPositioningElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPositioningElement) to
Kotlin\n */\npublic external abstract class SVGTextPositioningElement : SVGTextContentElement {\n    open val x:
SVGAnimatedLengthList\n    open val y: SVGAnimatedLengthList\n    open val dx: SVGAnimatedLengthList\n
open val dy: SVGAnimatedLengthList\n    open val rotate: SVGAnimatedNumberList\n\n    companion object {\n
val LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n    val
LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val

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DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n/**\n * Exposes the JavaScript
[SVGTextElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextElement) to Kotlin\n\n*\npublic
external abstract class SVGTextElement : SVGTextPositioningElement {\n    companion object {\n    val
LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n    val
LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n/**\n * Exposes the JavaScript
[SVGTSpanElement](https://developer.mozilla.org/en/docs/Web/API/SVGTSpanElement) to Kotlin\n\n*\npublic
external abstract class SVGTSpanElement : SVGTextPositioningElement {\n    companion object {\n    val
LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n    val
LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n
    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n
    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n/**\n * Exposes the JavaScript
[SVGTextPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPathElement) to Kotlin\n\n
*\npublic external abstract class SVGTextPathElement : SVGTextContentElement, SVGURIReference {\n    open
val startOffset: SVGAnimatedLength\n    open
val method: SVGAnimatedEnumeration\n    open val spacing: SVGAnimatedEnumeration\n\n    companion object
{\n    val TEXTPATH_METHODTYPE_UNKNOWN: Short\n    val TEXTPATH_METHODTYPE_ALIGN:
Short\n    val TEXTPATH_METHODTYPE_STRETCH: Short\n    val
TEXTPATH_SPACINGTYPE_UNKNOWN: Short\n    val TEXTPATH_SPACINGTYPE_AUTO: Short\n
    val TEXTPATH_SPACINGTYPE_EXACT: Short\n    val LENGTHADJUST_UNKNOWN: Short\n    val
LENGTHADJUST_SPACING: Short\n    val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED:
Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val

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DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n\n\n * Exposes the JavaScript [SVGImageElement](https://developer.mozilla.org/en/docs/Web/API/SVGImageElement) to Kotlin\n */\npublic external abstract class SVGImageElement : SVGGraphicsElement, SVGURIReference, HTMLOrSVGImageElement {\n open val x: SVGAnimatedLength\n open val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n open val preserveAspectRatio: SVGAnimatedPreserveAspectRatio\n open var crossOrigin: String?\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n\n\n * Exposes the JavaScript [SVGForeignObjectElement](https://developer.mozilla.org/en/docs/Web/API/SVGForeignObjectElement) to Kotlin\n */\npublic external abstract class SVGForeignObjectElement : SVGGraphicsElement {\n open val x: SVGAnimatedLength\n open val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n\n\npublic external abstract class SVGMarkerElement : SVGElement, SVGFitToViewBox {\n open val refX: SVGAnimatedLength\n open val refY: SVGAnimatedLength\n open val markerUnits: SVGAnimatedEnumeration\n open val markerWidth: SVGAnimatedLength\n open val markerHeight: SVGAnimatedLength\n open val orientType: SVGAnimatedEnumeration\n open val orientAngle: SVGAnimatedAngle\n open var orient: String\n fun setOrientToAuto()\n fun setOrientToAngle(angle: SVGAngle)\n\n companion object {\n val SVG_MARKERUNITS_UNKNOWN: Short\n val SVG_MARKERUNITS_USERSPACEONUSE: Short\n val SVG_MARKERUNITS_STROKEWIDTH: Short\n val SVG_MARKER_ORIENT_UNKNOWN: Short\n val SVG_MARKER_ORIENT_AUTO: Short\n val SVG_MARKER_ORIENT_ANGLE: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n\n\n * Exposes the JavaScript [SVGSolidcolorElement](https://developer.mozilla.org/en/docs/Web/API/SVGSolidcolorElement) to Kotlin\n


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*\npublic external abstract class SVGSolidcolorElement : SVGElement {\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n
    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGGradientElement) to Kotlin\n
*\npublic external abstract class SVGGradientElement : SVGElement, SVGURIReference, SVGUnitTypes {\n
open val gradientUnits: SVGAnimatedEnumeration\n  open val gradientTransform: SVGAnimatedTransformList\n
open val spreadMethod: SVGAnimatedEnumeration\n\n  companion object {\n    val
SVG_SPREADMETHOD_UNKNOWN: Short\n    val SVG_SPREADMETHOD_PAD: Short\n    val
SVG_SPREADMETHOD_REFLECT: Short\n    val SVG_SPREADMETHOD_REPEAT: Short\n    val
SVG_UNIT_TYPE_UNKNOWN: Short\n    val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n    val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n
    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGLinearGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGLinearGradientElement) to
Kotlin\n
*\npublic external abstract class SVGLinearGradientElement : SVGGradientElement {\n  open val
x1: SVGAnimatedLength\n  open val y1: SVGAnimatedLength\n  open val x2: SVGAnimatedLength\n  open
val y2: SVGAnimatedLength\n\n  companion object {\n    val SVG_SPREADMETHOD_UNKNOWN: Short\n
    val SVG_SPREADMETHOD_PAD: Short\n    val SVG_SPREADMETHOD_REFLECT: Short\n    val
SVG_SPREADMETHOD_REPEAT: Short\n    val SVG_UNIT_TYPE_UNKNOWN: Short\n    val
SVG_UNIT_TYPE_USERSPACEONUSE: Short\n    val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the
JavaScript
[SVGRadialGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGRadialGradientElement) to
Kotlin\n
*\npublic external abstract class SVGRadialGradientElement : SVGGradientElement {\n  open val cx:
SVGAnimatedLength\n  open val cy: SVGAnimatedLength\n  open val r: SVGAnimatedLength\n  open val fx:

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SVGAnimatedLength\n  open val fy: SVGAnimatedLength\n  open val fr: SVGAnimatedLength\n\n  companion
object {\n    val SVG_SPREADMETHOD_UNKNOWN: Short\n    val SVG_SPREADMETHOD_PAD:
Short\n    val SVG_SPREADMETHOD_REFLECT: Short\n    val SVG_SPREADMETHOD_REPEAT:
Short\n    val SVG_UNIT_TYPE_UNKNOWN: Short\n    val SVG_UNIT_TYPE_USERSPACEONUSE:
Short\n    val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external abstract class
SVGMeshGradientElement : SVGGradientElement {\n  companion object {\n    val
SVG_SPREADMETHOD_UNKNOWN: Short\n    val SVG_SPREADMETHOD_PAD: Short\n    val
SVG_SPREADMETHOD_REFLECT:
Short\n    val SVG_SPREADMETHOD_REPEAT: Short\n    val SVG_UNIT_TYPE_UNKNOWN: Short\n
    val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n    val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external abstract class
SVGMeshrowElement
: SVGElement {\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external abstract class
SVGMeshpatchElement : SVGElement {\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val

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DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGStopElement](https://developer.mozilla.org/en/docs/Web/API/SVGStopElement) to Kotlin\n *\npublic external abstract class SVGStopElement : SVGElement {\n open val offset: SVGAnimatedNumber\n\ncompanion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGPatternElement](https://developer.mozilla.org/en/docs/Web/API/SVGPatternElement) to Kotlin\n *\npublic external abstract class SVGPatternElement : SVGElement, SVGFitToViewBox, SVGURIReference, SVGUnitTypes {\n open val patternUnits: SVGAnimatedEnumeration\n open val patternContentUnits: SVGAnimatedEnumeration\n open val patternTransform: SVGAnimatedTransformList\n open val x: SVGAnimatedLength\n open val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n\ncompanion object {\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class SVGHatchElement : SVGElement {\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class SVGHatchpathElement : SVGElement {\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

[SVGCursorElement](https://developer.mozilla.org/en/docs/Web/API/SVGCursorElement) to Kotlin\n */\npublic external abstract class SVGCursorElement : SVGElement, SVGURIReference {\n open val x: SVGAnimatedLength\n open val y: SVGAnimatedLength\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGScriptElement](https://developer.mozilla.org/en/docs/Web/API/SVGScriptElement) to Kotlin\n */\npublic external abstract class SVGScriptElement : SVGElement, SVGURIReference, HTMLOrSVGScriptElement {\n open var type: String\n open var crossOrigin: String?\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGAEElement](https://developer.mozilla.org/en/docs/Web/API/SVGAEElement) to Kotlin\n */\npublic external abstract class SVGAEElement : SVGGraphicsElement, SVGURIReference {\n open val target: SVGAnimatedString\n open val download: SVGAnimatedString\n open val rel: SVGAnimatedString\n open val relList: SVGAnimatedString\n open val hreflang: SVGAnimatedString\n open val type: SVGAnimatedString\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGViewElement](https://developer.mozilla.org/en/docs/Web/API/SVGViewElement) to Kotlin\n */\npublic external abstract class SVGViewElement : SVGElement, SVGFitToViewBox, SVGZoomAndPan {\n\n companion object {\n val SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val SVG_ZOOMANDPAN_MAGNIFY: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n }\n}

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val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}"/,*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.files\n\nimport
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\nimport
org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript [Blob](https://developer.mozilla.org/en/docs/Web/API/Blob) to
Kotlin\n */\npublic external open class Blob(blobParts: Array<dynamic>
= definedExternally, options: BlobPropertyBag = definedExternally) : MediaPlayer, ImageBitmapSource {\n
open val size: Number\n    open val type: String\n    open val isClosed: Boolean\n    fun slice(start: Int =
definedExternally, end: Int = definedExternally, contentType: String = definedExternally): Blob\n    fun
close()\n}\n\npublic external interface BlobPropertyBag {\n    var type: String? /* = \"\" */\n    fun
get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun BlobPropertyBag(type: String? = \"\"):
BlobPropertyBag {\n    val o = js(\"({})\")\n    o[\"type\"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[File](https://developer.mozilla.org/en/docs/Web/API/File) to Kotlin\n */\npublic external open class File(fileBits:
Array<dynamic>, fileName: String, options: FilePropertyBag = definedExternally) : Blob {\n    open val name:
String\n    open val lastModified: Int\n}\n\npublic external interface FilePropertyBag : BlobPropertyBag {\n    var
lastModified: Int?\n    fun
get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun FilePropertyBag(lastModified: Int? =
undefined, type: String? = \"\"): FilePropertyBag {\n    val o = js(\"({})\")\n    o[\"lastModified\"] = lastModified\n
o[\"type\"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[FileList](https://developer.mozilla.org/en/docs/Web/API/FileList) to Kotlin\n */\npublic external abstract class
FileList : ItemArrayLike<File> {\n    override fun item(index: Int):
File?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun FileList.get(index: Int): File?
= asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[FileReader](https://developer.mozilla.org/en/docs/Web/API/FileReader)
to Kotlin\n */\npublic external open class FileReader : EventTarget {\n    open val readyState: Short\n    open val
result: dynamic\n    open val error: dynamic\n    var onloadstart: ((ProgressEvent) -> dynamic)?\n    var onprogress:
((ProgressEvent) -> dynamic)?\n    var onload: ((Event) -> dynamic)?\n    var onabort: ((Event) -> dynamic)?\n
var onerror: ((Event) -> dynamic)?\n    var onloadend: ((Event) -> dynamic)?\n    fun readAsArrayBuffer(blob: Blob)\n
fun readAsBinaryString(blob: Blob)\n    fun readAsText(blob: Blob, label: String = definedExternally)\n    fun
readAsDataURL(blob: Blob)\n    fun abort()\n\n    companion object {\n        val EMPTY: Short\n        val
LOADING: Short\n        val DONE: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[FileReaderSync](https://developer.mozilla.org/en/docs/Web/API/FileReaderSync) to Kotlin\n */\npublic external
open class FileReaderSync {\n    fun readAsArrayBuffer(blob: Blob): ArrayBuffer\n    fun readAsBinaryString(blob:
Blob): String\n    fun readAsText(blob: Blob, label: String = definedExternally): String\n    fun
readAsDataURL(blob: Blob): String\n}\n"/,*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.notifications\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.events.*\nimport org.w3c.workers.*\n\n/**\n * Exposes the JavaScript
[Notification](https://developer.mozilla.org/en/docs/Web/API/Notification) to Kotlin\n */\npublic external open

```

```

class Notification(title: String, options: NotificationOptions = definedExternally) : EventTarget {\n  var onclick:
((MouseEvent) -> dynamic)?\n  var onerror: ((Event) -> dynamic)?\n  open val title: String\n  open val dir:
NotificationDirection\n
  open val lang: String\n  open val body: String\n  open val tag: String\n  open val image: String\n  open val
icon: String\n  open val badge: String\n  open val sound: String\n  open val vibrate: Array<out Int>\n  open val
timestamp: Number\n  open val renotify: Boolean\n  open val silent: Boolean\n  open val noscreen: Boolean\n
open val requireInteraction: Boolean\n  open val sticky: Boolean\n  open val data: Any?\n  open val actions:
Array<out NotificationAction>\n  fun close()\n\n  companion object {\n    val permission:
NotificationPermission\n    val maxActions: Int\n    fun requestPermission(deprecatedCallback:
(NotificationPermission) -> Unit = definedExternally): Promise<NotificationPermission>\n  }\n}\n\npublic
external interface NotificationOptions {\n  var dir: NotificationDirection? /* = NotificationDirection.AUTO */\n
get() = definedExternally\n  set(value) = definedExternally\n  var lang: String? /* =
"" */\n  get() = definedExternally\n  set(value) = definedExternally\n  var body: String? /* = "" */\n
get() = definedExternally\n  set(value) = definedExternally\n  var tag: String? /* = "" */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var image: String?\n  get() = definedExternally\n
set(value) = definedExternally\n  var icon: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var badge: String?\n  get() = definedExternally\n  set(value) = definedExternally\n
var sound: String?\n  get() = definedExternally\n  set(value) = definedExternally\n  var vibrate: dynamic\n
get() = definedExternally\n  set(value) = definedExternally\n  var timestamp: Number?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var renotify: Boolean? /* = false */\n  get() =
definedExternally\n  set(value)
= definedExternally\n  var silent: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var noscreen: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var requireInteraction: Boolean? /* = false */\n  get() = definedExternally\n  set(value)
= definedExternally\n  var sticky: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var data: Any? /* = null */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var actions: Array<NotificationAction>? /* = arrayOf() */\n  get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun NotificationOptions(dir:
NotificationDirection? = NotificationDirection.AUTO, lang: String? = "", body: String? = "", tag: String? = "",
image:
String? = undefined, icon: String? = undefined, badge: String? = undefined, sound: String? = undefined, vibrate:
dynamic = undefined, timestamp: Number? = undefined, renotify: Boolean? = false, silent: Boolean? = false,
noscreen: Boolean? = false, requireInteraction: Boolean? = false, sticky: Boolean? = false, data: Any? = null,
actions: Array<NotificationAction>? = arrayOf()): NotificationOptions {\n  val o = js("{}")\n  o["dir"] = dir\n
o["lang"] = lang\n  o["body"] = body\n  o["tag"] = tag\n  o["image"] = image\n  o["icon"] = icon\n
o["badge"] = badge\n  o["sound"] = sound\n  o["vibrate"] = vibrate\n  o["timestamp"] = timestamp\n
o["renotify"] = renotify\n  o["silent"] = silent\n  o["noscreen"] = noscreen\n  o["requireInteraction"] =
requireInteraction\n  o["sticky"] = sticky\n  o["data"] = data\n  o["actions"] = actions\n  return
o\n}\n\npublic external interface NotificationAction {\n  var action: String?\n
var title: String?\n  var icon: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun NotificationAction(action: String?,
title: String?, icon: String? = undefined): NotificationAction {\n  val o = js("{}")\n  o["action"] = action\n
o["title"] = title\n  o["icon"] = icon\n  return o\n}\n\npublic external interface GetNotificationOptions {\n  var
tag: String? /* = "" */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun GetNotificationOptions(tag: String? =

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\"): GetNotificationOptions {\n  val o = js("{}")\n  o["tag"] = tag\n  return o\n}\n\n/**\n * Exposes the
JavaScript [NotificationEvent](https://developer.mozilla.org/en/docs/Web/API/NotificationEvent) to Kotlin\n
*\npublic external open class NotificationEvent(type: String, eventInitDict: NotificationEventInit) :
ExtendableEvent {\n  open val notification: Notification\n  open val action: String\n\n  companion object {\n
val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface NotificationEventInit : ExtendableEventInit {\n
var notification: Notification?\n  var action: String? /* = "" *\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun NotificationEventInit(notification:
Notification?, action: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): NotificationEventInit {\n  val o = js("{}")\n  o["notification"] = notification\n  o["action"] =
action\n  o["bubbles"] = bubbles\n
    o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\n/* please, don't implement this
interface! *\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface NotificationPermission {\n  companion object\n}\n\npublic inline val
NotificationPermission.Companion.DEFAULT: NotificationPermission get() =
"default".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.DENIED: NotificationPermission get() =
"denied".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.GRANTED: NotificationPermission get() =
"granted".asDynamic().unsafeCast<NotificationPermission>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface NotificationDirection {\n  companion object\n}\n\npublic inline val
NotificationDirection.Companion.AUTO: NotificationDirection
get() = "auto".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.LTR: NotificationDirection get() =
"ltr".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.RTL: NotificationDirection get() =
"rtl".asDynamic().unsafeCast<NotificationDirection>()"/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n@n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n//
See github.com/kotlin/dukat for details\npackage org.w3c.workers\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\nimport org.w3c.fetch.*\nimport
org.w3c.notifications.*\n\n/**\n * Exposes the JavaScript
[ServiceWorker](https://developer.mozilla.org/en/docs/Web/API/ServiceWorker) to Kotlin\n *\npublic
external abstract class ServiceWorker : EventTarget, AbstractWorker, UnionMessagePortOrServiceWorker,
UnionClientOrMessagePortOrServiceWorker {\n  open val scriptURL: String\n  open val state:
ServiceWorkerState\n  open var onstatechange: ((Event) -> dynamic)?\n  fun postMessage(message: Any?,
transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerRegistration](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerRegistration) to
Kotlin\n *\npublic external abstract class ServiceWorkerRegistration : EventTarget {\n  open val installing:
ServiceWorker?\n  open val waiting: ServiceWorker?\n  open val active: ServiceWorker?\n  open val scope:
String\n  open var onupdatefound: ((Event) -> dynamic)?\n  open val APISpace: dynamic\n  fun update():
Promise<Unit>\n  fun unregister(): Promise<Boolean>\n  fun showNotification(title: String, options:
NotificationOptions = definedExternally): Promise<Unit>\n  fun getNotifications(filter:
GetNotificationOptions = definedExternally): Promise<Array<Notification>>\n  fun methodName():
Promise<dynamic>\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerContainer](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerContainer) to Kotlin\n

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*\npublic external abstract class ServiceWorkerContainer : EventTarget {\n  open val controller:
ServiceWorker?\n  open val ready: Promise<ServiceWorkerRegistration>\n  open var oncontrollerchange:
((Event) -> dynamic)?\n  open var onmessage: ((MessageEvent) -> dynamic)?\n  fun register(scriptURL: String,
options: RegistrationOptions = definedExternally): Promise<ServiceWorkerRegistration>\n  fun
getRegistration(clientURL: String = definedExternally): Promise<Any?>\n  fun getRegistrations():
Promise<Array<ServiceWorkerRegistration>>\n  fun startMessages()\n}\n\npublic external interface
RegistrationOptions {\n  var scope: String?\n  get() = definedExternally\n  set(value) = definedExternally\n
  var type: WorkerType? /* = WorkerType.CLASSIC */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun RegistrationOptions(scope: String? =
undefined, type: WorkerType? = WorkerType.CLASSIC): RegistrationOptions {\n  val o = js(\"({})\")\n
o[\"scope\"] = scope\n  o[\"type\"] = type\n  return o\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerMessageEvent) to
Kotlin\n */\n\npublic external open class ServiceWorkerMessageEvent(type: String, eventInitDict:
ServiceWorkerMessageEventInit = definedExternally) : Event {\n  open val data: Any?\n  open val origin:
String\n  open val lastEventId: String\n  open val source: UnionMessagePortOrServiceWorker?\n  open val
ports: Array<out MessagePort>?\n\n  companion object {\n    val NONE: Short\n    val
CAPTURING_PHASE:
Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
ServiceWorkerMessageEventInit : EventInit {\n  var data: Any?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var origin: String?\n  get() = definedExternally\n  set(value) = definedExternally\n
  var lastEventId: String?\n  get() = definedExternally\n  set(value) = definedExternally\n  var source:
UnionMessagePortOrServiceWorker?\n  get() = definedExternally\n  set(value) = definedExternally\n  var
ports: Array<MessagePort>?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ServiceWorkerMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>?
= undefined, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
ServiceWorkerMessageEventInit {\n  val o = js(\"({})\")\n  o[\"data\"] = data\n  o[\"origin\"] = origin\n
o[\"lastEventId\"] = lastEventId\n  o[\"source\"] = source\n  o[\"ports\"] = ports\n  o[\"bubbles\"] = bubbles\n
o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerGlobalScope) to
Kotlin\n */\n\npublic external abstract class ServiceWorkerGlobalScope : WorkerGlobalScope {\n  open val clients:
Clients\n  open val registration: ServiceWorkerRegistration\n  open var oninstall: ((Event) -> dynamic)?\n  open
var onactivate: ((Event) -> dynamic)?\n  open var onfetch: ((FetchEvent) -> dynamic)?\n  open var
onforeignfetch: ((Event) -> dynamic)?\n  open var onmessage: ((MessageEvent) -> dynamic)?\n  open
var onnotificationclick: ((NotificationEvent) -> dynamic)?\n  open var onnotificationclose: ((NotificationEvent) ->
dynamic)?\n  open var onfunctionalevent: ((Event) -> dynamic)?\n  fun skipWaiting():
Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript
[Client](https://developer.mozilla.org/en/docs/Web/API/Client) to Kotlin\n */\n\npublic external abstract class Client :
UnionClientOrMessagePortOrServiceWorker {\n  open val url: String\n  open val frameType: FrameType\n
open val id: String\n  fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n
 * Exposes the JavaScript [WindowClient](https://developer.mozilla.org/en/docs/Web/API/WindowClient) to
Kotlin\n */\n\npublic external abstract class WindowClient : Client {\n  open val visibilityState: dynamic\n  open
val focused: Boolean\n  fun focus(): Promise<WindowClient>\n  fun navigate(url: String):
Promise<WindowClient>\n}\n\n/**\n * Exposes the JavaScript
[Clients](https://developer.mozilla.org/en/docs/Web/API/Clients)

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to Kotlin\n *\npublic external abstract class Clients {\n fun get(id: String): Promise<Any?>\n fun
matchAll(options: ClientQueryOptions = definedExternally): Promise<Array<Client>>\n fun openWindow(url:
String): Promise<WindowClient?>\n fun claim(): Promise<Unit>\n}\n\npublic external interface
ClientQueryOptions {\n var includeUncontrolled: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var type: ClientType? /* = ClientType.WINDOW */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ClientQueryOptions(includeUncontrolled: Boolean? = false, type: ClientType? = ClientType.WINDOW):
ClientOptions {\n val o = js(\"({})\")\n o[\"includeUncontrolled\"] = includeUncontrolled\n o[\"type\"] =
type\n return o\n}\n\n/**\n * Exposes the
JavaScript [ExtendableEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableEvent) to Kotlin\n
*\npublic external open class ExtendableEvent(type: String, eventInitDict: ExtendableEventInit =
definedExternally) : Event {\n fun waitUntil(f: Promise<Any?>)\n\n companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE:
Short\n }\n}\n\npublic external interface ExtendableEventInit :
EventInit\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableEventInit(bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableEventInit {\n val o =
js(\"({})\")\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n
return o\n}\n\n/**\n * Exposes the JavaScript
[InstallEvent](https://developer.mozilla.org/en/docs/Web/API/InstallEvent) to Kotlin\n *\npublic
external open class InstallEvent(type: String, eventInitDict: ExtendableEventInit = definedExternally) :
ExtendableEvent {\n fun registerForeignFetch(options: ForeignFetchOptions)\n\n companion object {\n val
NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface ForeignFetchOptions {\n var scopes:
Array<String>?\n var origins: Array<String>?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchOptions(scopes:
Array<String>?, origins: Array<String>?): ForeignFetchOptions {\n val o = js(\"({})\")\n o[\"scopes\"] =
scopes\n o[\"origins\"] = origins\n return o\n}\n\n/**\n * Exposes the JavaScript
[FetchEvent](https://developer.mozilla.org/en/docs/Web/API/FetchEvent) to Kotlin\n *\npublic external open class
FetchEvent(type: String, eventInitDict: FetchEventInit) : ExtendableEvent {\n open val
request: Request\n open val clientId: String?\n open val isReload: Boolean\n fun respondWith(r:
Promise<Response>)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n
val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
FetchEventInit : ExtendableEventInit {\n var request: Request?\n var clientId: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var isReload: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun FetchEventInit(request: Request?,
clientId: String? = null, isReload: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): FetchEventInit {\n val o = js(\"({})\")\n o[\"request\"] = request\n o[\"clientId\"]
= clientId\n
o[\"isReload\"] = isReload\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return o\n}\n\npublic external open class ForeignFetchEvent(type: String, eventInitDict:
ForeignFetchEventInit) : ExtendableEvent {\n open val request: Request\n open val origin: String\n fun
respondWith(r: Promise<ForeignFetchResponse>)\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface ForeignFetchEventInit : ExtendableEventInit {\n var request: Request?\n var
origin: String? /* = \"null\" */\n get() = definedExternally\n set(value) =

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definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchEventInit(request:
Request?, origin: String? = \"null\", bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): ForeignFetchEventInit {\n val o = js(\"({})\")\n o[\"request\"] = request\n
o[\"origin\"] = origin\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return o\n}\n\npublic external interface ForeignFetchResponse {\n var response: Response?\n var
origin: String?\n get() = definedExternally\n set(value) = definedExternally\n var headers:
Array<String>?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchResponse(response:
Response?, origin: String? = undefined, headers: Array<String>? = undefined): ForeignFetchResponse {\n val o =
js(\"({})\")\n o[\"response\"] = response\n o[\"origin\"] = origin\n o[\"headers\"] = headers\n return
o\n}\n\n/**\n * Exposes the JavaScript
[ExtendableMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableMessageEvent)
to Kotlin\n *\npublic external open class ExtendableMessageEvent(type: String, eventInitDict:
ExtendableMessageEventInit = definedExternally) : ExtendableEvent {\n open val data: Any?\n open val origin:
String\n open val lastEventId: String\n open val source: UnionClientOrMessagePortOrServiceWorker?\n open
val ports: Array<out MessagePort>?\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface ExtendableMessageEventInit : ExtendableEventInit {\n var data: Any?\n
get() = definedExternally\n set(value) = definedExternally\n var origin: String?\n get() =
definedExternally\n set(value) = definedExternally\n var lastEventId: String?\n get() =
definedExternally\n set(value) = definedExternally\n var source:
UnionClientOrMessagePortOrServiceWorker?\n
get() = definedExternally\n set(value) = definedExternally\n var ports: Array<MessagePort>?\n get()
= definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionClientOrMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableMessageEventInit {\n
val o = js(\"({})\")\n o[\"data\"] = data\n o[\"origin\"] = origin\n o[\"lastEventId\"] = lastEventId\n
o[\"source\"] = source\n o[\"ports\"] = ports\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n
o[\"composed\"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Cache](https://developer.mozilla.org/en/docs/Web/API/Cache)
to Kotlin\n *\npublic external abstract class Cache {\n fun match(request: dynamic, options: CacheQueryOptions
= definedExternally): Promise<Any?>\n fun matchAll(request: dynamic = definedExternally, options:
CacheQueryOptions = definedExternally): Promise<Array<Response>>\n fun add(request: dynamic):
Promise<Unit>\n fun addAll(requests: Array<dynamic>): Promise<Unit>\n fun put(request: dynamic, response:
Response): Promise<Unit>\n fun delete(request: dynamic, options: CacheQueryOptions = definedExternally):
Promise<Boolean>\n fun keys(request: dynamic = definedExternally, options: CacheQueryOptions =
definedExternally): Promise<Array<Request>>\n}\n\npublic external interface CacheQueryOptions {\n var
ignoreSearch: Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var
ignoreMethod: Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var
ignoreVary:
Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var cacheName:
String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun CacheQueryOptions(ignoreSearch:

```

```

Boolean? = false, ignoreMethod: Boolean? = false, ignoreVary: Boolean? = false, cacheName: String? = undefined):
CacheQueryOptions {\n  val o = js("{}")\n  o["ignoreSearch"] = ignoreSearch\n  o["ignoreMethod"] =
ignoreMethod\n  o["ignoreVary"] = ignoreVary\n  o["cacheName"] = cacheName\n  return o\n}\n\npublic
external interface CacheBatchOperation {\n  var type: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var request: Request?\n  get() = definedExternally\n  set(value) = definedExternally\n
var response: Response?\n  get() = definedExternally\n
  set(value) = definedExternally\n  var options: CacheQueryOptions?\n  get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CacheBatchOperation(type: String? =
undefined, request: Request? = undefined, response: Response? = undefined, options: CacheQueryOptions? =
undefined): CacheBatchOperation {\n  val o = js("{}")\n  o["type"] = type\n  o["request"] = request\n
o["response"] = response\n  o["options"] = options\n  return o\n}\n\n/**\n * Exposes the JavaScript
[CacheStorage](https://developer.mozilla.org/en/docs/Web/API/CacheStorage) to Kotlin\n *\npublic external
abstract class CacheStorage {\n  fun match(request: dynamic, options: CacheQueryOptions = definedExternally):
Promise<Any?>\n  fun has(cacheName: String): Promise<Boolean>\n  fun open(cacheName: String):
Promise<Cache>\n  fun delete(cacheName: String): Promise<Boolean>\n
  fun keys(): Promise<Array<String>>\n}\n\npublic external open class FunctionalEvent : ExtendableEvent {\n
companion object {\n  val NONE: Short\n  val CAPTURING_PHASE: Short\n  val AT_TARGET:
Short\n  val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
UnionMessagePortOrServiceWorker\n\npublic external interface
UnionClientOrMessagePortOrServiceWorker\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface ServiceWorkerState {\n  companion object\n}\n\npublic inline val
ServiceWorkerState.Companion.INSTALLING: ServiceWorkerState get() =
"installing".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.INSTALLED: ServiceWorkerState get() =
"installed".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.ACTIVATING: ServiceWorkerState get() =
"activating".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic
inline val ServiceWorkerState.Companion.ACTIVATED: ServiceWorkerState get() =
"activated".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.REDUNDANT: ServiceWorkerState get() =
"redundant".asDynamic().unsafeCast<ServiceWorkerState>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface FrameType {\n  companion object\n}\n\npublic inline val FrameType.Companion.AUXILIARY:
FrameType get() = "auxiliary".asDynamic().unsafeCast<FrameType>()\n\npublic inline val
FrameType.Companion.TOP_LEVEL: FrameType get() = "top-
level".asDynamic().unsafeCast<FrameType>()\n\npublic inline val FrameType.Companion.NESTED: FrameType
get() = "nested".asDynamic().unsafeCast<FrameType>()\n\npublic inline val FrameType.Companion.NONE:
FrameType get() = "none".asDynamic().unsafeCast<FrameType>()\n\n/* please,
don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface ClientType {\n  companion object\n}\n\npublic inline val ClientType.Companion.WINDOW: ClientType
get() = "window".asDynamic().unsafeCast<ClientType>()\n\npublic inline val ClientType.Companion.WORKER:
ClientType get() = "worker".asDynamic().unsafeCast<ClientType>()\n\npublic inline val
ClientType.Companion.SHAREDWORKER: ClientType get() =
"sharedworker".asDynamic().unsafeCast<ClientType>()\n\npublic inline val ClientType.Companion.ALL:
ClientType get() = "all".asDynamic().unsafeCast<ClientType>()", /*\n * Copyright 2010-2021 JetBrains s.r.o. and

```

Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.xhr\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\nimport org.w3c.files.*\n\n/**\n * Exposes the JavaScript [XMLHttpRequestEventTarget](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequestEventTarget) to Kotlin\n */\n\npublic external abstract class XMLHttpRequestEventTarget : EventTarget {\n open var onloadstart: ((ProgressEvent) -> dynamic)?\n open var onprogress: ((ProgressEvent) -> dynamic)?\n open var onabort: ((Event) -> dynamic)?\n open var onerror: ((Event) -> dynamic)?\n open var onload: ((Event) -> dynamic)?\n open var ontimeout: ((Event) -> dynamic)?\n open var onloadend: ((Event) -> dynamic)?\n}\n\npublic external abstract class XMLHttpRequestUpload : XMLHttpRequestEventTarget\n\n/**\n * Exposes the JavaScript [XMLHttpRequest](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequest) to Kotlin\n */\n\npublic external open class XMLHttpRequest : XMLHttpRequestEventTarget {\n var onreadystatechange: ((Event) -> dynamic)?\n\n open val readyState: Short\n var timeout: Int\n var withCredentials: Boolean\n open val upload: XMLHttpRequestUpload\n open val responseURL: String\n open val status: Short\n open val statusText: String\n var responseType: XMLHttpRequestResponseType\n open val response: Any?\n open val responseText: String\n open val responseXML: Document?\n fun open(method: String, url: String)\n fun open(method: String, url: String, async: Boolean, username: String? = definedExternally, password: String? = definedExternally)\n fun setRequestHeader(name: String, value: String)\n fun send(body: dynamic = definedExternally)\n fun abort()\n fun getResponseHeader(name: String): String?\n fun getAllResponseHeaders(): String\n fun overrideMimeType(mime: String)\n\n companion object {\n val UNSENT: Short\n val OPENED: Short\n val HEADERS_RECEIVED: Short\n val LOADING: Short\n val DONE: Short\n }\n}\n\n/**\n * Exposes the JavaScript [FormData](https://developer.mozilla.org/en/docs/Web/API/FormData) to Kotlin\n */\n\npublic external open class FormData(form: HTMLFormElement = definedExternally) {\n fun append(name: String, value: String)\n fun append(name: String, value: Blob, filename: String = definedExternally)\n fun delete(name: String)\n fun get(name: String): dynamic\n fun getAll(name: String): Array<dynamic>\n fun has(name: String): Boolean\n fun set(name: String, value: String)\n fun set(name: String, value: Blob, filename: String = definedExternally)\n}\n\n/**\n * Exposes the JavaScript [ProgressEvent](https://developer.mozilla.org/en/docs/Web/API/ProgressEvent) to Kotlin\n */\n\npublic external open class ProgressEvent(type: String, eventInitDict: ProgressEventInit = definedExternally) : Event {\n open val lengthComputable: Boolean\n open val loaded: Number\n open val total: Number\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface ProgressEventInit : EventInit {\n var lengthComputable: Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var loaded: Number? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var total: Number? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ProgressEventInit(lengthComputable: Boolean? = false, loaded: Number? = 0, total: Number? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ProgressEventInit {\n val o = js(\"({})\")\n o[\"lengthComputable\"] = lengthComputable\n o[\"loaded\"] = loaded\n o[\"total\"] = total\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n return o\n}\n\n/* please, don't implement this interface!\n */\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external interface XMLHttpRequestResponseType {\n companion object\n}\n\npublic inline val XMLHttpRequestResponseType.Companion.EMPTY: XMLHttpRequestResponseType get() =

```

"\.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.ARRAYBUFFER: XMLHttpRequestResponseType get() =
"arraybuffer".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.BLOB: XMLHttpRequestResponseType get() =
"blob".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.DOCUMENT: XMLHttpRequestResponseType get() =
"document".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.JSON: XMLHttpRequestResponseType
get() = "json".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.TEXT: XMLHttpRequestResponseType get() =
"text".asDynamic().unsafeCast<XMLHttpRequestResponseType>()", /*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.annotation.AnnotationRetention.BINARY\n\nimport kotlin.annotation.AnnotationRetention.SOURCE\n\nimport
kotlin.annotation.AnnotationTarget.*\n\nimport kotlin.internal.RequireKotlin\n\nimport
kotlin.internal.RequireKotlinVersionKind\n\nimport kotlin.reflect.KClass\n\n\n/**\n * Signals that the annotated
annotation class is a marker of an experimental API.\n *\n * Any declaration annotated with that marker is
considered an experimental declaration\n * and its call sites should accept the experimental aspect of it either
by using [UseExperimental],\n * or by being annotated with that marker themselves, effectively causing further
propagation of that experimental aspect.\n *\n * This class is deprecated in favor of a more general approach
provided by [RequiresOptIn]/[OptIn].\n
*/\n\n@Target(ANNOTATION_CLASS)\n@Retention(BINARY)\n@SinceKotlin("1.2")\n@RequireKotlin("1.2.50
", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\n@DeprecatedSinceKotlin(warningSince =
"1.4", errorSince = "1.6")\n@Deprecated("Please use RequiresOptIn instead.")\n\npublic annotation class
Experimental(val level: Level = Level.ERROR) {\n    /**\n     * Severity of the diagnostic that should be reported on
usages of experimental API which did not explicitly accept the experimental aspect\n     * of that API either by using
[UseExperimental] or by being annotated with the corresponding marker annotation.\n     */\n    public enum class
Level {\n        /** Specifies that a warning should be reported on incorrect usages
of this experimental API. */\n        WARNING,\n        /** Specifies that an error should be reported on incorrect
usages of this experimental API. */\n        ERROR,\n    }\n}\n\n\n/**\n * Allows to use experimental API denoted by
the given markers in the annotated file, declaration, or expression.\n *\n * If a declaration is annotated with
[UseExperimental], its usages are **not** required to opt-in to that experimental API.\n *\n * This class is
deprecated in favor of a more general approach provided by [RequiresOptIn]/[OptIn].\n */\n\n@Target(\n    CLASS,
PROPERTY, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION,
PROPERTY_GETTER, PROPERTY_SETTER, EXPRESSION, FILE,
TYPEALIAS\n)\n@Retention(SOURCE)\n@SinceKotlin("1.2")\n@RequireKotlin("1.2.50", versionKind =
RequireKotlinVersionKind.COMPILER_VERSION)\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.6")\n@Deprecated("Please use OptIn instead.", ReplaceWith("OptIn(*markerClass)",
"kotlin.OptIn"))\n\npublic annotation
class UseExperimental(\n    vararg val markerClass: KClass<out Annotation>\n)\n\n\n@Target(CLASS,
PROPERTY, CONSTRUCTOR, FUNCTION, TYPEALIAS)\n@Retention(BINARY)\n\ninternal annotation class
WasExperimental(\n    vararg val markerClass: KClass<out Annotation>\n)\n\n", package kotlin\n\nimport
kotlin.annotation.AnnotationTarget.*\n\n\n/**\n * This annotation marks the standard library API that is considered
experimental and is not subject to the\n * [general compatibility
guarantees](https://kotlinlang.org/docs/reference/evolution/components-stability.html) given for the standard
library:\n * the behavior of such API may be changed or the API may be removed completely in any further
release.\n *\n * > Beware using the annotated API especially if you're developing a library, since your library might
become binary incompatible\n * with the future versions of the standard library.\n *\n * Any usage of a declaration

```

annotated with `@ExperimentalStdlibApi` must be accepted either by

- annotating that usage with the `[OptIn]` annotation, e.g. `@OptIn(ExperimentalStdlibApi::class)`, or by using the compiler argument `-opt-in=kotlin.ExperimentalStdlibApi`.
- using the `@RequiresOptIn(level = RequiresOptIn.Level.ERROR)` annotation.

`@Retention(AnnotationRetention.BINARY)`

`@Target(CLASS, ANNOTATION_CLASS, PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, TYPEALIAS)`

`@MustBeDocumented`

`@SinceKotlin("1.3")` public annotation class `ExperimentalStdlibApi`

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`@package kotlin`

`import kotlin.annotation.AnnotationTarget`

`import kotlin.experimental.ExperimentalTypeInference`

`/**` Allows to infer generic type arguments of a function from the calls in the annotated function parameter of that function.

`*/` When this annotation is placed on a generic function parameter of a function, it enables to infer the type arguments of that generic function from the lambda body passed to that parameter.

The calls that affect inference are either members of the receiver type of an annotated function parameter or extensions for that type. The extensions must be themselves annotated with `@BuilderInference`.

Example: we declare

```
fun <T> sequence(@BuilderInference block: suspend SequenceScope<T>(). -> Unit): Sequence<T>
```

and use it like

```
val result = sequence { yield("result") }
```

Here the type argument of the resulting sequence is inferred to `String` from the argument of the `[SequenceScope.yield]` function, that is called inside the lambda passed to `[sequence]`.

Note: this annotation is experimental, see `[ExperimentalTypeInference]` on how to opt-in for it.

`@Target(VALUE_PARAMETER, FUNCTION, PROPERTY)`

`@Retention(AnnotationRetention.BINARY)`

`@SinceKotlin("1.3")`

`@ExperimentalTypeInference` public annotation class `BuilderInference`

Enables overload selection based on the type of the value returned from lambda argument.

When two or more function overloads have otherwise the same parameter lists that differ only in the return type of a functional parameter, this annotation enables overload selection by the type of the value returned from the lambda function passed to this functional parameter.

Example:

```
@OverloadResolutionByLambdaReturnType
fun create(intProducer: () -> Int): Int
fun create(doubleProducer: () -> Double): Double
```

`val newValue = create { 3.14 }`

The annotation being applied to one of overloads allows to resolve this ambiguity by analyzing what value is returned from the lambda function.

This annotation is also used to discriminate the annotated overloads in case if overload selection still cannot choose one of them even taking in account the result of lambda parameter analysis. In that case a warning is reported.

Note: this annotation is experimental, see `[ExperimentalTypeInference]` on how to opt-in for it.

`@Target(FUNCTION)`

`@Retention(AnnotationRetention.BINARY)`

`@SinceKotlin("1.4")`

`@ExperimentalTypeInference` public annotation class `OverloadResolutionByLambdaReturnType`

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`@package kotlin`

`import kotlin.annotation.AnnotationTarget`

`import kotlin.internal.RequireKotlin`

`import kotlin.internal.RequireKotlinVersionKind`

`/**` The experimental multiplatform support API marker.

`*/` Any usage of a declaration annotated with `@ExperimentalMultiplatform` must be accepted either by

- annotating that usage with the `[OptIn]` annotation, e.g. `@OptIn(ExperimentalMultiplatform::class)`, or by using the compiler argument `-opt-in=kotlin.ExperimentalMultiplatform`.

`@RequiresOptIn`

`@MustBeDocumented`

`@Target(CLASS, ANNOTATION_CLASS, PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, TYPEALIAS)`

`@Retention(AnnotationRetention.BINARY)`

`@RequireKotlin("1.2.50", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)` public annotation class `ExperimentalMultiplatform`

* Marks an expected annotation class that it isn't required to have actual counterparts in all platforms. * This annotation is only applicable to `expect` annotation classes in multi-platform projects and marks that class as `optional`. * Optional expected class is allowed to have no corresponding actual class on the platform. Optional annotations can only be used to annotate something, not as types in signatures. If an optional annotation has no corresponding actual class on a platform, the annotation entries where it's used are simply erased when compiling code on that platform. * Note: this annotation is experimental, see [ExperimentalMultiplatform] on how to opt-in for it.

```

*\/n@Target(ANNOTATION_CLASS)\n@Retention(AnnotationRetention.BINARY)\n@ExperimentalMultiplatform\n@RequireKotlin("1.2.50", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\npublic annotation class OptionalExpectation\n"/n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport kotlin.annotation.AnnotationRetention.BINARY\nimport kotlin.annotation.AnnotationRetention.SOURCE\nimport kotlin.annotation.AnnotationTarget.*\nimport kotlin.internal.RequireKotlin\nimport kotlin.internal.RequireKotlinVersionKind\nimport kotlin.reflect.KClass\n\n/**\n * Signals that the annotated annotation class is a marker of an API that requires an explicit opt-in.\n * Call sites of any declaration annotated with that marker should opt in to the API either by using [OptIn],\n * or by being annotated with that marker themselves, effectively causing further propagation of the opt-in requirement.\n * This class requires opt-in itself and can only be used with the compiler argument `~opt-in=kotlin.RequiresOptIn`.\n * @property message message to be reported on usages of API without an explicit opt-in, or empty string for the default message.\n * The default message is: `This declaration is experimental and its usage should be marked with 'Marker'` or `@OptIn(Marker::class)`, where `Marker` is the opt-in requirement marker.\n * @property level specifies how usages of API without an explicit opt-in are reported in code.\n */\n\n@Target(ANNOTATION_CLASS)\n@Retention(BINARY)\n@SinceKotlin("1.3")\n@RequireKotlin("1.3.70",\n    versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\npublic annotation class RequiresOptIn(\n    val message: String = "",\n    val level: Level = Level.ERROR)\n{\n    /**\n     * Severity of the diagnostic that should be reported on usages which did not explicitly opt into the API either by using [OptIn] or by being annotated with the corresponding marker annotation.\n     */\n    public enum class Level {\n        /** Specifies that a warning should be reported on incorrect usages of this API. */\n        WARNING,\n        /** Specifies that an error should be reported on incorrect usages of this API. */\n        ERROR,\n    }\n}\n\n/**\n * Allows to use the API denoted by the given markers in the annotated file, declaration, or expression.\n * If a declaration is annotated with [OptIn], its usages are **not** required to opt in to that API.\n * This class requires opt-in itself and can only be used with the compiler argument `~opt-in=kotlin.RequiresOptIn`.\n */\n\n@Target(\n    CLASS,\n    PROPERTY,\n    LOCAL_VARIABLE,\n    VALUE_PARAMETER,\n    CONSTRUCTOR,\n    FUNCTION,\n    PROPERTY_GETTER,\n    PROPERTY_SETTER,\n    EXPRESSION,\n    FILE,\n    TYPEALIAS)\n@Retention(SOURCE)\n@SinceKotlin("1.3")\n@RequireKotlin("1.3.70", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\npublic annotation class OptIn(\n    vararg val markerClass: KClass<out Annotation>)\n"/n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\nimport kotlin.js.JsName\n\n/**\n * Provides a skeletal implementation of the read-only [Collection] interface.\n * @param E the type of elements contained in the collection. The collection is covariant in its element type.\n */\n\n@SinceKotlin("1.1")\npublic abstract class AbstractCollection<out E>\nprotected constructor() : Collection<E> {\n    abstract override val size: Int\n    abstract override fun iterator(): Iterator<E>\n\n    override fun contains(element: @UnsafeVariance E): Boolean = any { it == element }\n\n    override fun containsAll(elements: Collection<@UnsafeVariance E>): Boolean =\n        elements.all { contains(it) }

```

```

// use when js will support bound refs: elements.all(this::contains)\n\n override fun isEmpty(): Boolean = size ==
0\n\n override fun toString(): String = joinToString(", ", "[", "]") {\n if (it === this) \"(this Collection)\"
else it.toString()\n }\n\n /**\n * Returns new array of type `Array<Any?>` with the elements of this
collection.\n */\n @JsName(\"toArray\")\n protected open fun toArray(): Array<Any?> =
copyToArrayImpl(this)\n\n /**\n * Fills the provided [array] or creates new array of the same type\n * and
fills it with the elements of this collection.\n */\n protected open fun <T>
toArray(array: Array<T>): Array<T> = copyToArrayImpl(this, array)\n}\n\n\", \"/*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\nprivate enum class
State {\n Ready,\n NotReady,\n Done,\n Failed\n}\n\n/**\n * A base class to simplify implementing iterators
so that implementations only have to implement [computeNext]\n * to implement the iterator, calling [done] when
the iteration is complete.\n */\npublic abstract class AbstractIterator<T> : Iterator<T> {\n private var state =
State.NotReady\n private var nextValue: T? = null\n\n override fun hasNext(): Boolean {\n require(state !=
State.Failed)\n return when (state) {\n State.Done -> false\n State.Ready -> true\n else ->
tryToComputeNext()\n }\n }\n\n override fun next():
T {\n if (!hasNext()) throw NoSuchElementException()\n state = State.NotReady\n
@Suppress(\"UNCHECKED_CAST\")\n return nextValue as T\n }\n\n private fun tryToComputeNext():
Boolean {\n state = State.Failed\n computeNext()\n return state == State.Ready\n }\n\n /**\n *
Computes the next item in the iterator.\n */\n * This callback method should call one of these two methods:\n
*\n * * [setNext] with the next value of the iteration\n * * [done] to indicate there are no more elements\n
*\n * Failure to call either method will result in the iteration terminating with a failed state\n */\n abstract
protected fun computeNext(): Unit\n\n /**\n * Sets the next value in the iteration, called from the
[computeNext] function\n */\n protected fun setNext(value: T): Unit {\n nextValue = value\n state =
State.Ready\n }\n\n /**\n * Sets the state to done so that
the iteration terminates.\n */\n protected fun done() {\n state = State.Done\n }\n}\n\n\", \"/*\n *
Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n/*\n * Based on GWT
AbstractList\n * Copyright 2007 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * Provides a skeletal
implementation of the read-only [List] interface.\n */\n * This class is intended to help implementing read-only lists
so it doesn't support concurrent modification tracking.\n */\n * @param E the type of elements contained in the list.
The list is covariant in its element type.\n */\n@SinceKotlin(\"1.1\")\npublic abstract class AbstractList<out E>
protected constructor() : AbstractCollection<E>(), List<E> {\n abstract override val size: Int\n abstract override
fun get(index: Int): E\n\n override fun iterator(): Iterator<E> = IteratorImpl()\n\n
override fun indexOf(element: @UnsafeVariance E): Int = indexOfFirst { it == element }\n\n override fun
lastIndexOf(element: @UnsafeVariance E): Int = indexOfLast { it == element }\n\n override fun listIterator():
ListIterator<E> = ListIteratorImpl(0)\n\n override fun listIterator(index: Int): ListIterator<E> =
ListIteratorImpl(index)\n\n override fun subList(fromIndex: Int, toIndex: Int): List<E> = SubList(this, fromIndex,
toIndex)\n\n private class SubList<out E>(private val list: AbstractList<E>, private val fromIndex: Int, toIndex:
Int) : AbstractList<E>(), RandomAccess {\n private var _size: Int = 0\n\n init {\n
checkRangeIndexes(fromIndex, toIndex, list.size)\n this._size = toIndex - fromIndex\n }\n\n
override fun get(index: Int): E {\n checkElementIndex(index, _size)\n return list[fromIndex +
index]\n }\n\n override val size: Int get() = _size\n }\n\n /**\n
* Compares this list with other list instance with the ordered structural equality.\n */\n * @return true, if
[other] instance is a [List] of the same size, which contains the same elements in the same order.\n */\n override
fun equals(other: Any?): Boolean {\n if (other === this) return true\n if (other !is List<*>) return false\n\n
return orderedEquals(this, other)\n }\n\n /**\n * Returns the hash code value for this list.\n */\n override
fun hashCode(): Int = orderedHashCode(this)\n\n private open inner class IteratorImpl : Iterator<E> {\n /**
the index of the item that will be returned on the next call to [next]`() `*\n protected var index = 0\n

```



```

override fun hasNext(): Boolean = index < size\n\n    override fun next(): E {\n        if (!hasNext()) throw\n        NoSuchElementException()\n        return get(index++)\n    }\n}\n\n/**\n * Implementation of\n [ListIterator] for abstract\n lists.\n */\n private open inner class ListIteratorImpl(index: Int) : IteratorImpl(), ListIterator<E> {\n    init\n    {\n        checkPositionIndex(index, this@AbstractList.size)\n        this.index = index\n    }\n    override\n    fun hasNext(): Boolean = index > 0\n    override fun nextIndex(): Int = index\n    override fun\n    previous(): E {\n        if (!hasPrevious()) throw NoSuchElementException()\n        return get(--index)\n    }\n    override fun previousIndex(): Int = index - 1\n    }\n\n    internal companion object {\n        internal fun\n        checkElementIndex(index: Int, size: Int) {\n            if (index < 0 || index >= size) {\n                throw\n                IndexOutOfBoundsException("index: $index, size: $size")\n            }\n        }\n\n        internal fun\n        checkPositionIndex(index: Int, size: Int) {\n            if (index < 0 || index > size) {\n                throw\n                IndexOutOfBoundsException("index: $index, size: $size")\n            }\n        }\n\n        internal fun checkRangeIndexes(fromIndex: Int, toIndex: Int, size: Int) {\n            if\n            (fromIndex < 0 || toIndex > size) {\n                throw IndexOutOfBoundsException("fromIndex: $fromIndex,\n                toIndex: $toIndex, size: $size")\n            }\n            if (fromIndex > toIndex) {\n                throw\n                IllegalArgumentException("fromIndex: $fromIndex > toIndex: $toIndex")\n            }\n        }\n\n        internal fun\n        checkBoundsIndexes(startIndex: Int, endIndex: Int, size: Int) {\n            if (startIndex < 0 || endIndex > size) {\n                throw IndexOutOfBoundsException("startIndex: $startIndex, endIndex: $endIndex, size: $size")\n            }\n            if (startIndex > endIndex) {\n                throw IllegalArgumentException("startIndex: $startIndex > endIndex:\n                $endIndex")\n            }\n        }\n\n        internal fun orderedHashCode(c: Collection<*>): Int {\n            var\n            hashCode = 1\n            for\n            (e in c) {\n                hashCode = 31 * hashCode + (e?.hashCode() ?: 0)\n            }\n            return hashCode\n        }\n\n        internal fun orderedEquals(c: Collection<*>, other: Collection<*>): Boolean {\n            if (c.size !=\n            other.size) return false\n            val otherIterator = other.iterator()\n            for (elem in c) {\n                val\n                elemOther = otherIterator.next()\n                if (elem != elemOther) {\n                    return false\n                }\n            }\n            return true\n        }\n    }\n}\n\n/**\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming\n Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the\n license/LICENSE.txt file.\n */\n\n/**\n * Based on GWT AbstractMap\n * Copyright 2007 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the read-only [Map] interface.\n */\n\n/**\n * The implementor is required to\n implement [entries] property, which should return read-only set of map entries.\n */\n\n/**\n * @param K the type of map\n keys. The map is invariant in its key type.\n */\n\n/**\n * @param V the type of map values. The map is covariant in its value\n type.\n */\n\n@SinceKotlin("1.1")\npublic abstract class AbstractMap<K, out V> protected constructor() : Map<K,\n V> {\n    override fun containsKey(key: K): Boolean {\n        return implFindEntry(key) != null\n    }\n\n    override fun containsValue(value: @UnsafeVariance V): Boolean = entries.any { it.value == value }\n\n    internal\n    fun containsEntry(entry: Map.Entry<*, *>): Boolean {\n        // since entry comes from @UnsafeVariance\n        parameters it can be virtually anything\n        if (entry !is Map.Entry<*, *>) return false\n        val key = entry.key\n        val value = entry.value\n        val ourValue = get(key)\n        if (value != ourValue) {\n            return false\n        }\n        // Perhaps it was null and we don't contain the key?\n        if (ourValue == null && !containsKey(key)) {\n            return false\n        }\n        return true\n    }\n}\n\n/**\n * Compares this map with other instance with the ordered structural equality.\n */\n\n/**\n * @return true, if\n [other] instance is a [Map] of the same size, all entries of which are contained in the [entries] set of this map.\n */\n\noverride fun equals(other: Any?): Boolean {\n    if (other === this) return true\n    if (other !is Map<*,\n *>) return false\n    if (size != other.size) return false\n    return other.entries.all { containsEntry(it) }\n}\n\noverride operator fun get(key: K): V? = implFindEntry(key)?.value\n\n/**\n * Returns the hash code value\n for this map.\n */\n\n/**\n * It is the same as the hashCode of [entries] set.\n */\n\noverride fun hashCode(): Int =\n entries.hashCode()\n\noverride fun isEmpty(): Boolean = size == 0\n\noverride val size: Int get() =\n entries.size\n\n/**\n
```

```

    * Returns a read-only [Set] of all keys in this map.\n
    * Accessing this property first time creates a keys view from [entries].\n
    * All subsequent accesses just return the created instance.\n
    override val keys: Set<K>\n
    get() {\n
        if (_keys == null) {\n
            _keys = object : AbstractSet<K>() {\n
                override operator fun contains(element: K): Boolean = containsKey(element)\n
                override operator fun iterator(): Iterator<K> {\n
                    val entryIterator = entries.iterator()\n
                    return object : Iterator<K> {\n
                        override fun hasNext(): Boolean = entryIterator.hasNext()\n
                        override fun next(): K = entryIterator.next().key\n
                    }\n
                }\n
                override val size: Int get() = this@AbstractMap.size\n
            }\n
            return _keys!!\n
        }\n
        @kotlin.jvm.Volatile\n
        private var _keys: Set<K>? = null\n
        override fun toString(): String = entries.joinToString(", ", "\n", "\n") { toString(it) }\n
        private fun toString(entry: Map.Entry<K, V>): String = toString(entry.key) + "=" + toString(entry.value)\n
        private fun toString(o: Any?): String = if (o === this) "(this Map)" else o.toString()\n
    }

    /**\n
     * Returns a read-only [Collection] of all values in this map.\n
     * Accessing this property first time creates a values view from [entries].\n
     * All subsequent accesses just return the created instance.\n
     * override val values: Collection<V>\n
     get() {\n
        if (_values == null) {\n
            _values = object : AbstractCollection<V>() {\n
                override operator fun contains(element: @UnsafeVariance V): Boolean = containsValue(element)\n
                override operator fun iterator(): Iterator<V> {\n
                    val entryIterator = entries.iterator()\n
                    return object : Iterator<V> {\n
                        override fun hasNext(): Boolean = entryIterator.hasNext()\n
                        override fun next(): V = entryIterator.next().value\n
                    }\n
                }\n
                override val size: Int get() = this@AbstractMap.size\n
            }\n
            return _values!!\n
        }\n
        @kotlin.jvm.Volatile\n
        private var _values: Collection<V>? = null\n
        private fun implFindEntry(key: K): Map.Entry<K, V>? = entries.firstOrNull { it.key == key }\n
        internal companion object {\n
            internal fun entryHashCode(e: Map.Entry<*, *>): Int = with(e) { (key?.hashCode() ?: 0) xor (value?.hashCode() ?: 0) }\n
            internal fun entryToString(e: Map.Entry<*, *>): String = with(e) { "$key=$value" }\n
            internal fun entryEquals(e: Map.Entry<*, *>, other: Any?): Boolean {\n
                if (other !is Map.Entry<*, *>)\n
                    return false\n
                return e.key == other.key && e.value == other.value\n
            }\n
        }\n
    }

    /**\n
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     * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
     */\n
}

package kotlin.collections

/**\n
 * Provides a skeletal implementation of the read-only [Set] interface.\n
 * This class is intended to help implementing read-only sets so it doesn't support concurrent modification tracking.\n
 * @param E the type of elements contained in the set. The set is covariant in its element type.\n
 */\n
@SinceKotlin("1.1")\n
public abstract class AbstractSet<out E> protected constructor() : AbstractCollection<E>(), Set<E> {\n
    /**\n
     * Compares this set with other set instance with the unordered structural equality.\n
     * @return true, if [other] instance is a [Set] of the same size, all elements of which are contained in this set.\n
     * override fun equals(other: Any?): Boolean {\n
         if (other === this) return true\n
         if (other !is Set<*>) return false\n
         return setEquals(this, other)\n
     }\n
    /**\n
     * Returns the hash code value for this set.\n
     * override fun hashCode(): Int = unorderedHashCode(this)\n
     internal companion object {\n
         internal fun unorderedHashCode(c: Collection<*>): Int {\n
             var hashCode = 0\n
             for (element in c) {\n
                 hashCode += (element?.hashCode() ?: 0)\n
             }\n
             return hashCode\n
         }\n
         internal fun setEquals(c: Set<*>, other: Set<*>): Boolean {\n
             if (c.size != other.size) return false\n
             return c.containsAll(other)\n
         }\n
     }\n
}

/**\n
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
 */\n
package kotlin.collections

/**\n
 * Resizable-array implementation of the deque data structure.\n
 * The name deque is short for "double ended queue" and is usually pronounced "deck".\n
 * The collection provide methods for convenient access to the both ends.\n
 * It also implements [MutableList] interface and supports

```

efficient get/set operations by index.\n

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*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic class ArrayDeque<E> :  
AbstractMutableList<E> {\n    private var head: Int = 0\n    private var elementData: Array<Any?>\n\n    override  
var size: Int = 0\n    private set\n    /**\n     * Constructs an empty deque with specified [initialCapacity], or  
throws [IllegalArgumentException] if [initialCapacity] is negative.\n     */\n    public constructor(initialCapacity:  
Int) {\n        elementData = when {\n            initialCapacity == 0 -> emptyElementData\n            initialCapacity > 0 -  
> arrayOfNulls(initialCapacity)\n        }\n        else -> throw IllegalArgumentException("\nIllegal Capacity: $initialCapacity")\n    }\n\n    /**\n     * Constructs an empty deque.\n     */\n    public constructor() {\n        elementData = emptyElementData\n    }\n\n    /**\n     * Constructs a deque that contains the same elements as the specified [elements] collection in the same  
order.\n     */\n    public constructor(elements: Collection<E>) {\n        elementData = elements.toArray()\n        size = elementData.size\n        if (elementData.isEmpty()) elementData = emptyElementData\n    }\n\n    /**\n     * Ensures that the capacity of this deque is at least equal to the specified [minCapacity].\n     * If the current  
capacity is less than the [minCapacity], a new backing storage is allocated with greater capacity.\n     * Otherwise,  
this method takes no action and simply returns.\n     */\n    private fun ensureCapacity(minCapacity: Int) {\n        if  
(minCapacity < 0) throw IllegalStateException("\nDeque  
is too big.") // overflow\n        if (minCapacity <= elementData.size) return\n        if (elementData ===  
emptyElementData) {\n            elementData = arrayOfNulls(minCapacity.coerceAtLeast(defaultMinCapacity))\n            return\n        }\n        val newCapacity = newCapacity(elementData.size, minCapacity)\n        copyElements(newCapacity)\n    }\n\n    /**\n     * Creates a new array with the specified [newCapacity] size and  
copies elements in the [elementData] array to it.\n     */\n    private fun copyElements(newCapacity: Int) {\n        val  
newElements = arrayOfNulls<Any?>(newCapacity)\n        elementData.copyInto(newElements, 0, head,  
elementData.size)\n        elementData.copyInto(newElements, elementData.size - head, 0, head)\n        head = 0\n        elementData = newElements\n    }\n\n    @kotlin.internal.InlineOnly\n    private inline fun  
internalGet(internalIndex: Int): E {\n        @Suppress("UNCHECKED_CAST")\n        return  
elementData[internalIndex]  
as E\n    }\n\n    private fun positiveMod(index: Int): Int = if (index >= elementData.size) index - elementData.size  
else index\n\n    private fun negativeMod(index: Int): Int = if (index < 0) index + elementData.size else index\n\n    @kotlin.internal.InlineOnly\n    private inline fun internalIndex(index: Int): Int = positiveMod(head + index)\n\n    private fun incremented(index: Int): Int = if (index == elementData.lastIndex) 0 else index + 1\n\n    private fun  
decremented(index: Int): Int = if (index == 0) elementData.lastIndex else index - 1\n\n    override fun isEmpty():  
Boolean = size == 0\n\n    /**\n     * Returns the first element, or throws [NoSuchElementException] if this deque is  
empty.\n     */\n    public fun first(): E = if (isEmpty()) throw NoSuchElementException("\nArrayDeque is empty.")  
else internalGet(head)\n\n    /**\n     * Returns the first element, or `null` if this deque is empty.\n     */\n    public  
fun firstOrNull(): E? = if (isEmpty()) null  
else internalGet(head)\n\n    /**\n     * Returns the last element, or throws [NoSuchElementException] if this deque  
is empty.\n     */\n    public fun last(): E = if (isEmpty()) throw NoSuchElementException("\nArrayDeque is empty.")  
else internalGet(internalIndex(lastIndex))\n\n    /**\n     * Returns the last element, or `null` if this deque is empty.\n     */\n    *\n    public fun lastOrNull(): E? = if (isEmpty()) null else internalGet(internalIndex(lastIndex))\n\n    /**\n     * Prepends the specified [element] to this deque.\n     */\n    public fun addFirst(element: E) {\n        ensureCapacity(size + 1)\n        head = decremented(head)\n        elementData[head] = element\n        size += 1\n    }\n\n    /**\n     * Appends the specified [element] to this deque.\n     */\n    public fun addLast(element: E) {\n        ensureCapacity(size + 1)\n        elementData[internalIndex(size)] = element\n        size += 1\n    }\n\n    /**\n     * Removes the first element from this deque  
and returns that removed element, or throws [NoSuchElementException] if this deque is empty.\n     */\n    public  
fun removeFirst(): E {\n        if (isEmpty()) throw NoSuchElementException("\nArrayDeque is empty.")\n        val  
element = internalGet(head)\n        elementData[head] = null\n        head = incremented(head)\n        size -= 1\n        return element\n    }\n\n    /**\n     * Removes the first element from this deque and returns that removed element, or
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returns `null` if this deque is empty.\n    */\n    public fun removeFirstOrNull(): E? = if (isEmpty()) null else
removeFirst()\n\n    /**\n     * Removes the last element from this deque and returns that removed element, or
throws [NoSuchElementException] if this deque is empty.\n    */\n    public fun removeLast(): E {\n        if
(isEmpty()) throw NoSuchElementException("ArrayDeque is empty.")\n\n        val internalLastIndex =
internalIndex(lastIndex)\n        val element = internalGet(internalLastIndex)\n
        elementData[internalLastIndex] = null\n        size -= 1\n        return element\n    }\n\n    /**\n     * Removes the
last element from this deque and returns that removed element, or returns `null` if this deque is empty.\n    */\n
public fun removeLastOrNull(): E? = if (isEmpty()) null else removeLast()\n\n    // MutableList,
MutableCollection\n    public override fun add(element: E): Boolean {\n        addLast(element)\n        return true\n
    }\n\n    public override fun add(index: Int, element: E) {\n        AbstractList.checkPositionIndex(index, size)\n\n
if (index == size) {\n            addLast(element)\n            return\n        } else if (index == 0) {\n
            addFirst(element)\n            return\n        }\n\n        ensureCapacity(size + 1)\n\n        // Elements in circular array lay
in 2 ways:\n        // 1. `head` is less than `tail`:    [#, #, e1, e2, e3, #]\n        // 2. `head` is greater than `tail`:    [e3,
#, #, #, e1, e2]\n\n        //
        where head is the index of the first element in the circular array,\n        // and tail is the index following the last
element.\n        //\n        // At this point the insertion index is not equal to head or tail.\n        // Also the circular array
can store at least one more element.\n        //\n        // Depending on where the given element must be inserted the
preceding or the succeeding\n        // elements will be shifted to make room for the element to be inserted.\n        //\n
        // In case the preceding elements are shifted:\n        // * if the insertion index is greater than the head (regardless
of circular array form)\n        // -> shift the preceding elements\n        // * otherwise, the circular array has (2)
form and the insertion index is less than tail\n        // -> shift all elements in the back of the array\n        // ->
shift preceding elements in the front of the array\n        // In case the succeeding elements are shifted:\n        //
        // * if the insertion index is less than the tail (regardless of circular array form)\n        // -> shift the succeeding
elements\n        // * otherwise, the circular array has (2) form and the insertion index is greater than head\n        //
-> shift all elements in the front of the array\n        // -> shift succeeding elements in the back of the array\n\n
        val internalIndex = internalIndex(index)\n        if (index < (size + 1) shr 1) {\n            // closer to the first element -
> shift preceding elements\n            val decrementedInternalIndex = decremented(internalIndex)\n            val
decrementedHead = decremented(head)\n            if (decrementedInternalIndex >= head) {\n
                elementData[decrementedHead] = elementData[head] // head can be zero\n
                elementData.copyInto(elementData, head, head + 1, decrementedInternalIndex + 1)\n            } else { // head > tail\n
                    elementData.copyInto(elementData, head
- 1, head, elementData.size) // head can't be zero\n                    elementData[elementData.size - 1] = elementData[0]\n
                    elementData.copyInto(elementData, 0, 1, decrementedInternalIndex + 1)\n                }\n\n
                elementData[decrementedInternalIndex] = element\n                head = decrementedHead\n            } else {\n
                // closer to the last element -> shift succeeding elements\n                val tail = internalIndex(size)\n                if
(internalIndex < tail) {\n                    elementData.copyInto(elementData, internalIndex + 1, internalIndex, tail)\n
                } else { // head > tail\n                    elementData.copyInto(elementData, 1, 0, tail)\n                    elementData[0] =
elementData[elementData.size - 1]\n                    elementData.copyInto(elementData, internalIndex + 1, internalIndex,
elementData.size - 1)\n                }\n                elementData[internalIndex] = element\n            }\n            size += 1\n        }\n\n
        private fun copyCollectionElements(internalIndex:
Int, elements: Collection<E>) {\n            val iterator = elements.iterator()\n            for (index in internalIndex until
elementData.size) {\n                if (!iterator.hasNext()) break\n                elementData[index] = iterator.next()\n            }\n
            for (index in 0 until head) {\n                if (!iterator.hasNext()) break\n                elementData[index] = iterator.next()\n
            }\n            size += elements.size\n        }\n\n        public override fun addAll(elements: Collection<E>): Boolean {\n
            if (elements.isEmpty()) return false\n            ensureCapacity(this.size + elements.size)\n
            copyCollectionElements(internalIndex(size), elements)\n            return true\n        }\n\n        public override fun
addAll(index: Int, elements: Collection<E>): Boolean {\n            AbstractList.checkPositionIndex(index, size)\n\n
            if (elements.isEmpty()) {\n                return false\n            } else if (index == size) {\n                return addAll(elements)\n
            }

```

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}\n\n
    ensureCapacity(this.size + elements.size)\n\n    val tail = internalIndex(size)\n    val internalIndex =
internalIndex(index)\n    val elementsSize = elements.size\n\n    if (index < (size + 1) shr 1) {\n        // closer
to the first element -> shift preceding elements\n\n        var shiftedHead = head - elementsSize\n\n        if
(internalIndex >= head) {\n            if (shiftedHead >= 0) {\n                elementData.copyInto(elementData,
shiftedHead, head, internalIndex)\n            } else { // head < tail, insertion leads to head >= tail\n
shiftedHead += elementData.size\n                val elementsToShift = internalIndex - head\n                val
shiftToBack = elementData.size - shiftedHead\n                if (shiftToBack >= elementsToShift) {\n
                    elementData.copyInto(elementData, shiftedHead, head, internalIndex)\n                } else {\n
                    elementData.copyInto(elementData,
                    shiftedHead, head, head + shiftToBack)\n                    elementData.copyInto(elementData, 0, head +
                    shiftToBack, internalIndex)\n                }\n            } else { // head > tail, internalIndex < tail\n
                elementData.copyInto(elementData, shiftedHead, head, elementData.size)\n                if (elementsSize >=
                internalIndex) {\n                    elementData.copyInto(elementData, elementData.size - elementsSize, 0,
                internalIndex)\n                } else {\n                    elementData.copyInto(elementData, elementData.size -
                elementsSize, 0, elementsSize)\n                    elementData.copyInto(elementData, 0, elementsSize, internalIndex)\n
                }\n            }\n            head = shiftedHead\n            copyCollectionElements(negativeMod(internalIndex -
elementsSize), elements)\n        } else {\n            // closer to the last element -> shift succeeding elements\n\n
            val
            shiftedInternalIndex = internalIndex + elementsSize\n\n            if (internalIndex < tail) {\n                if (tail +
elementsSize <= elementData.size) {\n                    elementData.copyInto(elementData, shiftedInternalIndex,
internalIndex, tail)\n                } else { // head < tail, insertion leads to head >= tail\n                    if
(shiftedInternalIndex >= elementData.size) {\n                        elementData.copyInto(elementData,
shiftedInternalIndex - elementData.size, internalIndex, tail)\n                    } else {\n                        val shiftToFront =
tail + elementsSize - elementData.size\n                        elementData.copyInto(elementData, 0, tail - shiftToFront,
tail)\n                    }\n                    elementData.copyInto(elementData, shiftedInternalIndex, internalIndex, tail - shiftToFront)\n
                }\n            } else { // head > tail, internalIndex > head\n
                elementData.copyInto(elementData, elementsSize,
                0, tail)\n                if (shiftedInternalIndex >= elementData.size) {\n                    elementData.copyInto(elementData,
shiftedInternalIndex - elementData.size, internalIndex, elementData.size)\n                } else {\n
                    elementData.copyInto(elementData, 0, elementData.size - elementsSize, elementData.size)\n
                    elementData.copyInto(elementData, shiftedInternalIndex, internalIndex, elementData.size - elementsSize)\n
                }\n            }\n            copyCollectionElements(internalIndex, elements)\n        }\n\n        return true\n    }\n\n    public
override fun get(index: Int): E {\n        AbstractList.checkElementIndex(index, size)\n\n        return
internalGet(internalIndex(index))\n    }\n\n    public override fun set(index: Int, element: E): E {\n        AbstractList.checkElementIndex(index, size)\n\n        val internalIndex = internalIndex(index)\n        val oldElement
= internalGet(internalIndex)\n        elementData[internalIndex]
= element\n\n        return oldElement\n    }\n\n    public override fun contains(element: E): Boolean =
indexOf(element) != -1\n\n    public override fun indexOf(element: E): Int {\n        val tail = internalIndex(size)\n\n        if (head < tail) {\n            for (index in head until tail) {\n                if (element == elementData[index]) return
index - head\n            }\n        } else if (head >= tail) {\n            for (index in head until elementData.size) {\n                if
(element == elementData[index]) return index - head\n            }\n            for (index in 0 until tail) {\n                if
(element == elementData[index]) return index + elementData.size - head\n            }\n        }\n\n        return -1\n    }\n\n    public override fun lastIndexOf(element: E): Int {\n        val tail = internalIndex(size)\n\n        if (head < tail)
{\n            for (index in tail - 1 downTo head) {\n                if (element == elementData[index])
return index - head\n            }\n        } else if (head > tail) {\n            for (index in tail - 1 downTo 0) {\n                if
(element == elementData[index]) return index + elementData.size - head\n            }\n            for (index in
elementData.lastIndex downTo head) {\n                if (element == elementData[index]) return index - head\n

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}\n    }\n\n    return -1\n    }\n\n    public override fun remove(element: E): Boolean {\n        val index =
indexOf(element)\n        if (index == -1) return false\n        removeAt(index)\n        return true\n    }\n\n    public
override fun removeAt(index: Int): E {\n        AbstractList.checkNotNull(index, size)\n\n        if (index ==
lastIndex) {\n            return removeLast()\n        } else if (index == 0) {\n            return removeFirst()\n        }\n\n        val internalIndex = internalIndex(index)\n        val element = internalGet(internalIndex)\n\n        if (index < size shr
1) {\n
            // closer to the first element -> shift preceding elements\n            if (internalIndex >= head) {\n
                elementData.copyInto(elementData, head + 1, head, internalIndex)\n            } else { // head > tail, internalIndex <
head\n                elementData.copyInto(elementData, 1, 0, internalIndex)\n                elementData[0] =
elementData[elementData.size - 1]\n                elementData.copyInto(elementData, head + 1, head, elementData.size
- 1)\n            }\n            elementData[head] = null\n            head = incremented(head)\n        } else {\n            //
            // closer to the last element -> shift succeeding elements\n            val internalLastIndex = internalIndex(lastIndex)\n\n
            if (internalIndex <= internalLastIndex) {\n                elementData.copyInto(elementData, internalIndex,
internalIndex + 1, internalLastIndex + 1)\n            } else { // head > tail, internalIndex > head\n
                elementData.copyInto(elementData,
                internalIndex, internalIndex + 1, elementData.size)\n                elementData[elementData.size - 1] =
elementData[0]\n                elementData.copyInto(elementData, 0, 1, internalLastIndex + 1)\n            }\n\n
            elementData[internalLastIndex] = null\n        }\n        size -= 1\n        return element\n    }\n\n    public override fun
removeAll(elements: Collection<E>): Boolean = filterInPlace { !elements.contains(it) }\n\n    public override fun
retainAll(elements: Collection<E>): Boolean = filterInPlace { elements.contains(it) }\n\n    private inline fun
filterInPlace(predicate: (E) -> Boolean): Boolean {\n        if (this.isEmpty() || elementData.isEmpty())\n            return
false\n\n        val tail = internalIndex(size)\n        var newTail = head\n        var modified = false\n\n        if (head <
tail) {\n            for (index in head until tail) {\n                val element = elementData[index]\n\n
                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E))\n                    elementData[newTail++] = element\n                else\n
                modified = true\n            }\n\n            elementData.fill(null, newTail, tail)\n        } else {\n            for (index in head
until elementData.size) {\n                val element = elementData[index]\n                elementData[index] = null\n\n
                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E))\n                    elementData[newTail++] = element\n                else\n
                modified = true\n            }\n\n            newTail =
            positiveMod(newTail)\n            for (index in 0 until tail) {\n                val element = elementData[index]\n
                elementData[index] = null\n\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as
E)) {\n                    elementData[newTail] = element\n                    newTail = incremented(newTail)\n                }
                } else {\n                    modified = true\n                }\n            }\n\n            if (modified)\n                size =
                negativeMod(newTail - head)\n            return modified\n        }\n\n        public override fun clear() {\n            val tail =
            internalIndex(size)\n            if (head < tail) {\n                elementData.fill(null, head, tail)\n            } else if (isNotEmpty())\n
            {\n                elementData.fill(null, head, elementData.size)\n                elementData.fill(null, 0, tail)\n            }\n            head =
            0\n            size = 0\n        }\n\n        @Suppress("NOTHING_TO_OVERRIDE")\n        override fun <T> toArray(array:
Array<T>): Array<T> {\n            @Suppress("UNCHECKED_CAST")\n            val dest = (if (array.size >= size) array
else arrayOfNulls(array, size)) as Array<Any?>\n\n            val tail = internalIndex(size)\n            if (head < tail) {\n
                elementData.copyInto(dest, startIndex = head, endIndex = tail)\n            } else if (isNotEmpty()) {\n
                elementData.copyInto(dest,
                destinationOffset = 0, startIndex = head, endIndex = elementData.size)\n                elementData.copyInto(dest,
                destinationOffset = elementData.size - head, startIndex = 0, endIndex = tail)\n            }\n            if (dest.size > size) {\n
                dest[size] = null // null-terminate\n            }\n\n            @Suppress("UNCHECKED_CAST")\n            return dest as
Array<T>\n        }\n\n        @Suppress("NOTHING_TO_OVERRIDE")\n        override fun toArray(): Array<Any?> {\n
            return toArray(arrayOfNulls<Any?>(size))\n        }\n\n        // for testing\n        internal fun <T> testToArray(array:
Array<T>): Array<T> = toArray(array)\n        internal fun testToArray(): Array<Any?> = toArray()\n\n        internal
companion object {\n            private val emptyElementData = emptyArray<Any?>()\n            private const val

```

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maxArraySize = Int.MAX_VALUE - 8\n    private const val defaultMinCapacity = 10\n\n    internal fun
newCapacity(oldCapacity: Int, minCapacity: Int): Int {\n        // overflow-conscious\n
        var newCapacity = oldCapacity + (oldCapacity shr 1)\n            if (newCapacity - minCapacity < 0)\n
newCapacity = minCapacity\n            if (newCapacity - maxArraySize > 0)\n                newCapacity = if
(minCapacity > maxArraySize) Int.MAX_VALUE else maxArraySize\n            return newCapacity\n        }\n
}\n\n    // For testing only\n    internal fun internalStructure(structure: (head: Int, elements: Array<Any?>) -> Unit)
{\n        val tail = internalIndex(size)\n        val head = if (isEmpty() || head < tail) head else head -
elementData.size\n        structure(head, toArray())\n    }\n}\n\n    /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n
*/\n\n    @file:kotlin.jvm.JvmMultifileClass\n    @file:kotlin.jvm.JvmName("ArraysKt")\n\n    @package
kotlin.collections\n\n    @nimport kotlin.contracts.*\n\n    /**\n
 * Returns a single list of all elements from all arrays in the given array.\n
 * @sample
samples.collections.Arrays.Transformations.flattenArray\n
 * @npublic fun <T> Array<out Array<out T>>.flatten():
List<T> {\n    val result = ArrayList<T>(sumOf { it.size })\n    for (element in this) {\n        result.addAll(element)\n
    }\n    return result\n}\n\n    /**\n
 * Returns a pair of lists, where\n
 * *first* list is built from the first values of each
pair from this array,\n
 * *second* list is built from the second values of each pair from this array.\n
 * @sample
samples.collections.Arrays.Transformations.unzipArray\n
 * @npublic fun <T, R> Array<out Pair<T, R>>.unzip():
Pair<List<T>, List<R>> {\n    val listT = ArrayList<T>(size)\n    val listR = ArrayList<R>(size)\n    for (pair in
this) {\n        listT.add(pair.first)\n        listR.add(pair.second)\n    }\n    return listT to listR\n}\n\n    /**\n
 * Returns
`true` if this nullable array is either null or empty.\n
 * @sample
samples.collections.Arrays.Usage.arrayIsNullOrEmpty\n
 * @n@SinceKotlin("1.3")\n    @kotlin.internal.InlineOnly\n    @npublic inline fun Array<*>?.isNullOrEmpty(): Boolean
{\n    contract {\n        returns(false) implies (this@isNullOrEmpty != null)\n    }\n\n    return this == null ||
this.isEmpty()\n}\n\n    /**\n
 * Returns this array if it's not empty\n
 * or the result of calling [defaultValue] function if
the array is empty.\n
 * @sample
samples.collections.Arrays.Usage.arrayIfEmpty\n
 * @n@SinceKotlin("1.3")\n    @kotlin.internal.InlineOnly\n    @Suppress("UPPER_BOUND_CANNOT_BE_ARRAY")\n    @npublic inline fun <C, R> C.ifEmpty(defaultValue: () -> R): R where C : Array<*>, C : R =\n    if (isEmpty())
defaultValue() else
this\n\n    @OptIn(ExperimentalUnsignedTypes::class)\n    @SinceKotlin("1.3")\n    @PublishedApi\n    @kotlin.jvm.Jvm
Name("contentDeepEquals")\n    @kotlin.js.JsName("contentDeepEqualsImpl")\n    @ninternal fun <T> Array<out
T>?.contentDeepEqualsImpl(other: Array<out T>?): Boolean {\n    if (this === other)
return true\n    if (this == null || other == null || this.size != other.size) return false\n\n    for (i in indices) {\n        val
v1 = this[i]\n        val v2 = other[i]\n\n        if (v1 === v2) {\n            continue\n        } else if (v1 == null || v2 ==
null) {\n            return false\n        }\n\n        when {\n            v1 is Array<*> && v2 is Array<*> -> if
(!v1.contentDeepEquals(v2)) return false\n            v1 is ByteArray && v2 is ByteArray -> if
(!v1.contentEquals(v2)) return false\n            v1 is ShortArray && v2 is ShortArray -> if (!v1.contentEquals(v2))
return false\n            v1 is IntArray && v2 is IntArray -> if (!v1.contentEquals(v2)) return false\n            v1 is
LongArray && v2 is LongArray -> if (!v1.contentEquals(v2)) return false\n            v1 is FloatArray && v2 is
FloatArray -> if (!v1.contentEquals(v2)) return false\n            v1 is DoubleArray && v2 is DoubleArray -> if
(!v1.contentEquals(v2)) return
false\n            v1 is CharArray && v2 is CharArray -> if (!v1.contentEquals(v2)) return false\n            v1 is
BooleanArray && v2 is BooleanArray -> if (!v1.contentEquals(v2)) return false\n            v1 is UByteArray &&
v2 is UByteArray -> if (!v1.contentEquals(v2)) return false\n            v1 is UShortArray && v2 is UShortArray ->
if (!v1.contentEquals(v2)) return false\n            v1 is UIntArray && v2 is UIntArray -> if
(!v1.contentEquals(v2)) return false\n            v1 is ULongArray && v2 is ULongArray -> if
(!v1.contentEquals(v2)) return false\n            v1 is ULongArray && v2 is ULongArray -> if
(!v1.contentEquals(v2)) return false\n            else -> if (v1 != v2) return false\n        }\n    }\n\n    return
true\n}\n\n    @SinceKotlin("1.3")\n    @PublishedApi\n    @kotlin.jvm.JvmName("contentDeepToString")\n    @kotlin.js.

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JsName("contentDeepToStringImpl")\ninternal fun <T> Array<out T>?.contentDeepToStringImpl(): String {\n
if (this == null) return "null"\n    val length = size.coerceAtMost((Int.MAX_VALUE - 2) / 5) * 5 + 2 // in
order not to overflow Int.MAX_VALUE\n    return buildString(length) {\n        contentDeepToStringInternal(this,
mutableListOf())\n    }\n}\n\n@OptIn(ExperimentalUnsignedTypes::class)\nprivate fun <T> Array<out
T>.contentDeepToStringInternal(result: StringBuilder, processed: MutableList<Array<*>>) {\n    if (this in
processed) {\n        result.append("[...]")\n        return\n    }\n    processed.add(this)\n    result.append('[')\n    for (i
in indices) {\n        if (i != 0) {\n            result.append(", ")\n        }\n        val element = this[i]\n        when
(element) {\n            null -> result.append("null")\n            is Array<*> ->
element.contentDeepToStringInternal(result, processed)\n            is ByteArray ->
result.append(element.contentToString())\n            is ShortArray -> result.append(element.contentToString())\n
            is IntArray -> result.append(element.contentToString())\n            is LongArray ->
result.append(element.contentToString())\n            is FloatArray -> result.append(element.contentToString())\n
            is DoubleArray -> result.append(element.contentToString())\n            is CharArray -> result.append(element.contentToString())\n
            is BooleanArray -> result.append(element.contentToString())\n            is UByteArray ->
result.append(element.contentToString())\n            is UShortArray -> result.append(element.contentToString())\n
            is UIntArray -> result.append(element.contentToString())\n            is ULongArray ->
result.append(element.contentToString())\n            else -> result.append(element.toString())\n        }\n    }\n    result.append('']\n    processed.removeAt(processed.lastIndex)\n}"/**\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/**\n * Returns true if the brittle contains optimization is enabled. See KT-45438. *\n */\ninternal expect fun
brittleContainsOptimizationEnabled(): Boolean\n\n/**\n * Returns true if [brittleContainsOptimizationEnabled] is
true\n * and it's safe to convert this collection to a set without changing contains method behavior.\n */\nprivate fun
<T> Collection<T>.safeToConvertToSet() = brittleContainsOptimizationEnabled() && size > 2 && this is
ArrayList\n\n/**\n * When [brittleContainsOptimizationEnabled] is true:\n * - Converts this [Iterable] to a set if it is
not a [Collection].\n * - Converts this [Collection] to a set, when it's worth so and it doesn't change contains method
behavior.\n * - Otherwise returns this.\n * When [brittleContainsOptimizationEnabled] is false:\n * - Converts this
[Iterable] to a list if it is not a [Collection].\n * - Otherwise returns this.\n */\ninternal fun <T>
Iterable<T>.convertToSetForSetOperationWith(source: Iterable<T>): Collection<T>
=\n    when (this) {\n        is Set -> this\n        is Collection -> when {\n            source is Collection &&
source.size < 2 -> this\n            else -> if (this.safeToConvertToSet()) toHashSet() else this\n        }\n    }\n    else -
> if (brittleContainsOptimizationEnabled()) toHashSet() else toList()\n}\n\n/**\n * When
[brittleContainsOptimizationEnabled] is true:\n * - Converts this [Iterable] to a set if it is not a [Collection].\n * -
Converts this [Collection] to a set, when it's worth so and it doesn't change contains method behavior.\n * -
Otherwise returns this.\n * When [brittleContainsOptimizationEnabled] is false:\n * - Converts this [Iterable] to a
list if it is not a [Collection].\n * - Otherwise returns this.\n */\ninternal fun <T>
Iterable<T>.convertToSetForSetOperation(): Collection<T> =\n    when (this) {\n        is Set -> this\n        is
Collection -> if (this.safeToConvertToSet()) toHashSet() else this\n    }\n    else -> if
(brittleContainsOptimizationEnabled())
toHashSet() else toList()\n}\n\n/**\n * Converts this sequence to a set if [brittleContainsOptimizationEnabled] is
true,\n * otherwise converts it to a list.\n */\ninternal fun <T> Sequence<T>.convertToSetForSetOperation():
Collection<T> =\n    if (brittleContainsOptimizationEnabled()) toHashSet() else toList()\n\n/**\n * Converts this
array to a set if [brittleContainsOptimizationEnabled] is true,\n * otherwise converts it to a list.\n */\ninternal fun
<T> Array<T>.convertToSetForSetOperation(): Collection<T> =\n    if (brittleContainsOptimizationEnabled())
toHashSet() else asList()"/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/**\n * Data class representing a value from a

```


collection or sequence, along with its index in that collection or sequence.

* @property value the underlying value.
 * @property index the index of the value in the collection or sequence.

public data class IndexedValue<out T>(public val index: Int, public val value: T)

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```

@file:kotlin.jvm.JvmName("MapAccessorsKt")
package kotlin.collections
import kotlin.reflect.KProperty
import kotlin.internal.Exact

* Returns the value of the property for the given object from this read-only map.
* @param thisRef the object for which the value is requested (not used).
* @param property the metadata for the property, used to get the name of property and lookup the value corresponding to this name in the map.
* @return the property value.
* @throws NoSuchElementException when the map doesn't contain value for the property name and doesn't provide an implicit default (see [withDefault]).
*/
@kotlin.internal.InlineOnly
public inline operator fun <V, V1 : V> Map<in String, @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =
  @Suppress("UNCHECKED_CAST") (getOrNull(thisRef, property.name) as V1)

* Returns the value of the property for the given object from this mutable map.
* @param thisRef the object for which the value is requested (not used).
* @param property the metadata for the property, used to get the name of property and lookup the value corresponding to this name in the map.
* @return the property value.
* @throws NoSuchElementException when the map doesn't contain value for the property name and doesn't provide an implicit default (see [withDefault]).
*/
@kotlin.jvm.JvmName("getVar")
@kotlin.internal.InlineOnly
public inline operator fun <V, V1 : V> MutableMap<in String, out @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =
  @Suppress("UNCHECKED_CAST") (getOrNull(thisRef, property.name) as V1)

* Stores the value of the property for the given object in this mutable map.
* @param thisRef the object for which the value is requested (not used).
* @param property the metadata for the property, used to get the name of property and store the value associated with that name in the map.
* @param value the value to set.
*/
@kotlin.internal.InlineOnly
public inline operator fun <V> MutableMap<in String, in V>.setValue(thisRef: Any?, property: KProperty<*>, value: V) {
  this.put(property.name, value)
}

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*/
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("MapsKt")
package kotlin.collections

* Returns the value for the given key, or the implicit default value for this map.
* By default no implicit value is provided for maps and a [NoSuchElementException] is thrown.
* To create a map with implicit default value use [withDefault] method.
* @throws NoSuchElementException when the map doesn't contain a value for the specified key and no implicit default was provided for that map.
*/
@kotlin.jvm.JvmName("getOrNull")
@PublishedApi
internal fun <K, V> Map<K, V>.getOrNull(key: K): V {
  if (this is MapWithDefault) return this.getOrNull(key)
  return getOrElse(key, { throw NoSuchElementException("Key $key is missing in the map.") })
}

* Returns a wrapper of this read-only map, having the implicit default value provided with the specified function [defaultValue].
* This implicit default value is used when the original map doesn't contain a value for the key specified and a value is obtained with [Map.getValue] function, for example when properties are delegated to the map.
* When this map already has an implicit default value provided with a former call to [withDefault], it is being replaced by this call.
*/
public fun <K, V> Map<K, V>.withDefault(defaultValue: (key: K) -> V): Map<K, V> =
  when (this) {
    is MapWithDefault -> this.withDefault(defaultValue)
    else -> MapWithDefaultImpl(this, defaultValue)
  }

* Returns a wrapper of this mutable map, having the implicit default value provided with the specified function [defaultValue].
* This implicit default value is used when the original map doesn't contain a value for the key specified and a value is obtained with [Map.getValue] function, for example when properties are delegated to the map.
* When this map already has an implicit

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default value provided with a former call to [withDefault], it is being replaced by this call.\n
*\n@kotlin.jvm.JvmName("\nwithDefaultMutable")\npublic fun <K, V> MutableMap<K,\n
V>.withDefault(defaultValue:\n
(key: K) -> V): MutableMap<K, V> =\n
when (this) {\n
is MutableMapWithDefault ->\n
this.map.withDefault(defaultValue)\n
else -> MutableMapWithDefaultImpl(this, defaultValue)\n
}\n\nprivate interface MapWithDefault<K, out V> : Map<K, V> {\n
public val map: Map<K, V>\n
public fun\n
getOrImplicitDefault(key: K): V\n\nprivate interface MutableMapWithDefault<K, V> : MutableMap<K, V>,\n
MapWithDefault<K, V> {\n
public override val map: MutableMap<K, V>\n\n\nprivate class\n
MapWithDefaultImpl<K, out V>(public override val map: Map<K, V>, private val default: (key: K) -> V) :\n
MapWithDefault<K, V> {\n
override fun equals(other: Any?): Boolean = map.equals(other)\n
override fun\n
hashCode(): Int = map.hashCode()\n
override fun toString(): String = map.toString()\n
override val size: Int get()\n
= map.size\n
override fun isEmpty(): Boolean = map.isEmpty()\n
override fun containsKey(key: K): Boolean =\n
map.containsKey(key)\n
override fun\n
containsValue(value: @UnsafeVariance V): Boolean = map.containsValue(value)\n
override fun get(key: K): V?\n
= map.get(key)\n
override val keys: Set<K> get() = map.keys\n
override val values: Collection<V> get() =\n
map.values\n
override val entries: Set<Map.Entry<K, V>> get() = map.entries\n\n
override fun\n
getOrImplicitDefault(key: K): V = map.getOrNull(key, { default(key) })\n\n\nprivate class\n
MutableMapWithDefaultImpl<K, V>(public override val map: MutableMap<K, V>, private val default: (key: K) ->\n
V) : MutableMapWithDefault<K, V> {\n
override fun equals(other: Any?): Boolean = map.equals(other)\n
override fun\n
hashCode(): Int = map.hashCode()\n
override fun toString(): String = map.toString()\n
override val\n
size: Int get() = map.size\n
override fun isEmpty(): Boolean = map.isEmpty()\n
override fun containsKey(key:\n
K): Boolean = map.containsKey(key)\n
override fun containsValue(value: @UnsafeVariance V): Boolean =\n
map.containsValue(value)\n\n
override fun get(key: K): V? = map.get(key)\n
override val keys: MutableSet<K> get() = map.keys\n
override\n
val values: MutableCollection<V> get() = map.values\n
override val entries:\n
MutableSet<MutableMap.MutableEntry<K, V>> get() = map.entries\n\n
override fun put(key: K, value: V): V? =\n
map.put(key, value)\n
override fun remove(key: K): V? = map.remove(key)\n
override fun putAll(from:\n
Map<out K, V>) = map.putAll(from)\n
override fun clear() = map.clear()\n\n
override fun\n
getOrImplicitDefault(key: K): V = map.getOrNull(key, { default(key) })\n\n\n"/*\n
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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n\n@file:kotlin.jvm.JvmMultifileClass\n\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage\n
kotlin.collections\n\nimport kotlin.random.Random\n\n/**\n
 * Removes a single instance of the specified\n
element from this\n
 * collection, if it is present.\n
 * Allows to overcome type-safety restriction of `remove` that\n
requires to pass an element of type `E`.\n
 * @return `true` if the element has been successfully removed; `false`\n
if it was not present in the collection.\n
 */\n\n@kotlin.internal.InlineOnly\n\npublic inline fun\n
<@kotlin.internal.OnlyInputTypes T> MutableCollection<out T>.remove(element: T): Boolean =\n
@Suppress("UNCHECKED_CAST") (this as MutableCollection<T>).remove(element)\n\n/**\n
 * Removes all of\n
this collection's elements that are also contained in the specified collection.\n
 * Allows to overcome type-safety\n
restriction of `removeAll` that requires to pass a collection of type `Collection<E>`.\n
 * @return `true` if any of\n
the specified elements was removed from the collection, `false` if the collection was not modified.\n
 */\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <@kotlin.internal.OnlyInputTypes T> MutableCollection<out\n
T>.removeAll(elements:\n
Collection<T>): Boolean =\n
@Suppress("UNCHECKED_CAST") (this as\n
MutableCollection<T>).removeAll(elements)\n\n/**\n
 * Retains only the elements in this collection that are\n
contained in the specified collection.\n
 * Allows to overcome type-safety restriction of `retainAll` that requires\n
to pass a collection of type `Collection<E>`.\n
 * @return `true` if any element was removed from the collection,\n
`false` if the collection was not modified.\n
 */\n\n@kotlin.internal.InlineOnly\n\npublic inline fun

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<@kotlin.internal.OnlyInputTypes T> MutableCollection<out T>.retainAll(elements: Collection<T>): Boolean =\n
@Suppress(\\"UNCHECKED_CAST\\") (this as MutableCollection<T>).retainAll(elements)\n\n/**\n * Adds the\n specified [element] to this mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>\nMutableCollection<in T>.plusAssign(element: T) {\n    this.add(element)\n}\n\n/**\n * Adds all elements of the\n given [elements] collection to this mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in T>.plusAssign(elements:\nIterable<T>) {\n    this.addAll(elements)\n}\n\n/**\n * Adds all elements of the given [elements] array to this\n mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in\nT>.plusAssign(elements: Array<T>) {\n    this.addAll(elements)\n}\n\n/**\n * Adds all elements of the given\n [elements] sequence to this mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>\nMutableCollection<in T>.plusAssign(elements: Sequence<T>) {\n    this.addAll(elements)\n}\n\n/**\n * Removes a\n single instance of the specified [element] from this mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic\ninline operator fun <T> MutableCollection<in T>.minusAssign(element: T) {\n    this.remove(element)\n}\n\n/**\n * Removes all elements contained in the given [elements] collection from this mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic\ninline operator fun <T> MutableCollection<in T>.minusAssign(elements: Iterable<T>) {\n    this.removeAll(elements)\n}\n\n/**\n * Removes all elements contained in the given [elements] array from this\n mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in\nT>.minusAssign(elements: Array<T>) {\n    this.removeAll(elements)\n}\n\n/**\n * Removes all elements\n contained in the given [elements] sequence from this mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic\ninline operator fun <T> MutableCollection<in T>.minusAssign(elements: Sequence<T>) {\n    this.removeAll(elements)\n}\n\n/**\n * Adds all elements of the given [elements] collection to this\n [MutableCollection].\n */\npublic fun <T> MutableCollection<in T>.addAll(elements: Iterable<T>): Boolean {\n    when (elements) {\n        is Collection -> return addAll(elements)\n        else -> {\n            var result: Boolean =\n                false\n                for (item in elements)\n                    if (add(item)) result = true\n                return result\n            }\n    }\n}\n\n/**\n * Adds all elements of the given [elements] sequence to this [MutableCollection].\n */\npublic fun <T>\nMutableCollection<in T>.addAll(elements: Sequence<T>): Boolean {\n    var result: Boolean = false\n    for (item\nin elements) {\n        if (add(item)) result = true\n    }\n    return result\n}\n\n/**\n * Adds all elements of the given\n [elements] array to this [MutableCollection].\n */\npublic fun <T> MutableCollection<in T>.addAll(elements:\nArray<out T>): Boolean {\n    return addAll(elements.asList())\n}\n\n/**\n * Removes all elements from this\n [MutableCollection] that are also contained in the given [elements] collection.\n */\npublic fun <T>\nMutableCollection<in T>.removeAll(elements: Iterable<T>): Boolean {\n    return\nremoveAll(elements.convertToSetForSetOperationWith(this))\n}\n\n/**\n * Removes all elements from this\n [MutableCollection] that are\n also contained in the given [elements] sequence.\n */\npublic fun <T> MutableCollection<in\nT>.removeAll(elements: Sequence<T>): Boolean {\n    val set = elements.convertToSetForSetOperation()\n    return\nset.isNotEmpty() && removeAll(set)\n}\n\n/**\n * Removes all elements from this [MutableCollection] that are\n also contained in the given [elements] array.\n */\npublic fun <T> MutableCollection<in T>.removeAll(elements:\nArray<out T>): Boolean {\n    return elements.isNotEmpty() &&\nremoveAll(elements.convertToSetForSetOperation())\n}\n\n/**\n * Retains only elements of this\n [MutableCollection] that are contained in the given [elements] collection.\n */\npublic fun <T>\nMutableCollection<in T>.retainAll(elements: Iterable<T>): Boolean {\n    return\nretainAll(elements.convertToSetForSetOperationWith(this))\n}\n\n/**\n * Retains only elements of this\n [MutableCollection] that are contained in the given [elements] array.\n */\npublic fun <T> MutableCollection<in\nT>.retainAll(elements: Array<out\nT>): Boolean {\n    if (elements.isNotEmpty())\n        return retainAll(elements.convertToSetForSetOperation())\n    else\n        return retainNothing()\n}\n\n/**\n * Retains only elements of this [MutableCollection] that are contained

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in the given [elements] sequence.\n *\npublic fun <T> MutableCollection<in T>.retainAll(elements:
Sequence<T>): Boolean {\n    val set = elements.convertToSetForSetOperation()\n    if (set.isNotEmpty())\n    return retainAll(set)\n    else\n        return retainNothing()\n}\n\nprivate fun MutableCollection<*>.retainNothing():
Boolean {\n    val result = isEmpty()\n    clear()\n    return result\n}\n\n/**\n * Removes all elements from this
[MutableIterable] that match the given [predicate].\n *\n * @return `true` if any element was removed from this
collection, or `false` when no elements were removed and collection was not modified.\n *\npublic fun <T>
MutableIterable<T>.removeAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate,
true)\n\n/**\n * Retains only elements of this [MutableIterable] that match the given [predicate].\n *\n * @return
`true` if any element was removed from this collection, or `false` when all elements were retained and collection was
not modified.\n *\npublic fun <T> MutableIterable<T>.retainAll(predicate: (T) -> Boolean): Boolean =
filterInPlace(predicate, false)\n\nprivate fun <T> MutableIterable<T>.filterInPlace(predicate: (T) -> Boolean,
predicateResultToRemove: Boolean): Boolean {\n    var result = false\n    with(iterator()) {\n        while
(hasNext())\n            if (predicate(next()) == predicateResultToRemove) {\n                remove()\n                result =
true\n            }\n    }\n    return result\n}\n\n/**\n * Removes the element at the specified [index] from this list.\n *\nIn Kotlin one should use the [MutableList.removeAt] function instead.\n *\n@Deprecated("Use removeAt(index)
instead.", ReplaceWith("removeAt(index)"), level =
DeprecationLevel.ERROR)\n@kotlin.internal.InlineOnly\npublic
inline fun <T> MutableList<T>.remove(index: Int): T = removeAt(index)\n\n/**\n * Removes the first element
from this mutable list and returns that removed element, or throws [NoSuchElementException] if this list is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T>
MutableList<T>.removeFirst(): T = if (isEmpty()) throw NoSuchElementException("List is empty.") else
removeAt(0)\n\n/**\n * Removes the first element from this mutable list and returns that removed element, or
returns `null` if this list is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T>
MutableList<T>.removeFirstOrNull(): T? = if (isEmpty()) null else removeAt(0)\n\n/**\n * Removes the last
element from this mutable list and returns that removed element, or throws [NoSuchElementException] if this list is
empty.\n\n*\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun <T> MutableList<T>.removeLast(): T = if (isEmpty()) throw NoSuchElementException("List is empty.") else
removeAt(lastIndex)\n\n/**\n * Removes the last element from this mutable list and returns that removed element,
or returns `null` if this list is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T>
MutableList<T>.removeLastOrNull(): T? = if (isEmpty()) null else removeAt(lastIndex)\n\n/**\n * Removes all
elements from this [MutableList] that match the given [predicate].\n *\n * @return `true` if any element was
removed from this collection, or `false` when no elements were removed and collection was not modified.\n\n*\n*\npublic fun <T> MutableList<T>.removeAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate,
true)\n\n/**\n * Retains only elements of this [MutableList] that match the given [predicate].\n *\n * @return `true`
if any element was removed from this collection, or `false` when all elements were retained
and collection was not modified.\n\n*\n*\npublic fun <T> MutableList<T>.retainAll(predicate: (T) -> Boolean):
Boolean = filterInPlace(predicate, false)\n\nprivate fun <T> MutableList<T>.filterInPlace(predicate: (T) ->
Boolean, predicateResultToRemove: Boolean): Boolean {\n    if (this !is RandomAccess)\n        return (this as
MutableIterable<T>).filterInPlace(predicate, predicateResultToRemove)\n\n    var writeIndex: Int = 0\n    for
(readIndex in 0..lastIndex) {\n        val element = this[readIndex]\n        if (predicate(element) ==
predicateResultToRemove)\n            continue\n\n        if (writeIndex != readIndex)\n            this[writeIndex] =
element\n\n        writeIndex++\n    }\n    if (writeIndex < size) {\n        for (removeIndex in lastIndex downTo
writeIndex)\n            removeAt(removeIndex)\n\n        return true\n    } else {\n        return false\n    }\n}\n\n", "/*\n *
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this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n*\n*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage

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kotlin.collections\n\nprivate open class ReversedListReadOnly<out T>(private val delegate: List<T>) :
AbstractList<T>() {\n  override val size: Int get() = delegate.size\n  override fun get(index: Int): T =
delegate[reverseElementIndex(index)]\n}\n\nprivate class ReversedList<T>(private val delegate: MutableList<T>) :
AbstractMutableList<T>() {\n  override val size: Int get() = delegate.size\n  override fun get(index: Int): T =
delegate[reverseElementIndex(index)]\n  override fun clear() = delegate.clear()\n  override fun removeAt(index:
Int): T = delegate.removeAt(reverseElementIndex(index))\n  override fun set(index: Int, element: T): T =
delegate.set(reverseElementIndex(index), element)\n  override fun add(index: Int, element: T) {\n
delegate.add(reversePositionIndex(index),
element)\n  }\n}\n\nprivate fun List<*>.reverseElementIndex(index: Int) =\n  if (index in 0..lastIndex) lastIndex -
index else throw IndexOutOfBoundsException("\u0022Element index $index must be in range
[${0..lastIndex}].\u0022)\n\nprivate fun List<*>.reversePositionIndex(index: Int) =\n  if (index in 0..size) size - index
else throw IndexOutOfBoundsException("\u0022Position index $index must be in range [${0..size}].\u0022)\n\n/**\n *
Returns a reversed read-only view of the original List.\n * All changes made in the original list will be reflected in
the reversed one.\n * @sample samples.collections.ReversedViews.asReversedList\n */\n\npublic fun <T>
List<T>.asReversed(): List<T> = ReversedListReadOnly(this)\n\n/**\n * Returns a reversed mutable view of the
original mutable List.\n * All changes made in the original list will be reflected in the reversed one and vice versa.\n
* @sample samples.collections.ReversedViews.asReversedMutableList\n
*/\n\n@kotlin.jvm.JvmName("\u0022asReversedMutable\u0022")\n\npublic
fun <T> MutableList<T>.asReversed(): MutableList<T> = ReversedList(this)\n\n"/\n * Copyright 2010-2018
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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("\u0022SequencesKt\u0022")\n@file:OptIn(Experimenta
lTypeInference::class)\n\npackage kotlin.sequences\n\nimport kotlin.coroutines.*\nimport
kotlin.coroutines.intrinsics.*\nimport kotlin.experimental.ExperimentalTypeInference\n\n/**\n * Builds a
[Sequence] lazily yielding values one by one.\n * @see kotlin.sequences.generateSequence\n * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n */\n\n@SinceKotlin("1.3")\n\npublic fun <T>
sequence(@BuilderInference block: suspend SequenceScope<T>().() -> Unit): Sequence<T> = Sequence {
iterator(block)
}\n\n/**\n * Builds an [Iterator] lazily yielding values one by one.\n * @sample
samples.collections.Sequences.Building.buildIterator\n * @sample samples.collections.Iterables.Building.iterable\n
*/\n\n@SinceKotlin("1.3")\n\npublic fun <T> iterator(@BuilderInference block: suspend SequenceScope<T>().() ->
Unit): Iterator<T> {\n  val iterator = SequenceBuilderIterator<T>()\n  iterator.nextStep =
block.createCoroutineUnintercepted(receiver = iterator, completion = iterator)\n  return iterator\n}\n\n/**\n * The
scope for yielding values of a [Sequence] or an [Iterator], provides [yield] and [yieldAll] suspension functions.\n *
@see sequence\n * @see iterator\n */\n\n * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n
*/\n\n@RestrictsSuspension\n@SinceKotlin("1.3")\n\npublic abstract class SequenceScope<in T> internal
constructor() {\n  /**\n   * Yields a value to the [Iterator]
being built and suspends\n   * until the next value is requested.\n   */\n   * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n   * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n   */\n   public abstract suspend fun yield(value:
T)\n\n  /**\n   * Yields all values from the `iterator` to the [Iterator] being built\n   * and suspends until all these
values are iterated and the next one is requested.\n   */\n   * The sequence of values returned by the given iterator
can be potentially infinite.\n   */\n   * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n
*/\n   public abstract suspend fun yieldAll(iterator: Iterator<T>)\n\n  /**\n   * Yields a collections of values to
the [Iterator] being built\n   * and suspends until all these values are iterated and the next one is requested.\n   */
}

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* @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n    */\n    public
suspend fun yieldAll(elements: Iterable<T>) {\n        if (elements is Collection && elements.isEmpty()) return\n
return yieldAll(elements.iterator())\n    }\n\n    /**\n     * Yields potentially infinite sequence of values to the
[Iterator] being built\n     * and suspends until all these values are iterated and the next one is requested.\n     */\n     *
The sequence can be potentially infinite.\n     */\n     * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n    */\n    public suspend fun yieldAll(sequence:
Sequence<T>) = yieldAll(sequence.iterator())\n\nprivate typealias State = Int\nprivate const val
State_NotReady: State = 0\nprivate const val State_ManyNotReady: State = 1\nprivate const val State_ManyReady:
State = 2\nprivate const val State_Ready: State = 3\nprivate const val State_Done: State = 4\nprivate const val
State_Failed: State = 5\nprivate class SequenceBuilderIterator<T> : SequenceScope<T>(), Iterator<T>,
Continuation<Unit> {\n
    private var state = State_NotReady\n    private var nextValue: T? = null\n    private var nextIterator: Iterator<T>?
= null\n    var nextStep: Continuation<Unit>? = null\n\n    override fun hasNext(): Boolean {\n        while (true) {\n
            when (state) {\n                State_NotReady -> {}\n                State_ManyNotReady ->\n                    if
(nextIterator!!.hasNext()) {\n                        state = State_ManyReady\n                        return true\n                    }
                else {\n                    nextIterator = null\n                    }\n                State_Done -> return false\n
                State_Ready, State_ManyReady -> return true\n                else -> throw exceptionalState()\n            }\n\n            state
= State_Failed\n            val step = nextStep!\n            nextStep = null\n            step.resume(Unit)\n        }\n    }\n\n    override fun next(): T {\n        when (state) {\n            State_NotReady, State_ManyNotReady
-> return nextNotReady()\n            State_ManyReady -> {\n                state = State_ManyNotReady\n
                return nextIterator!!.next()\n            }\n            State_Ready -> {\n                state = State_NotReady\n
                @Suppress("\\UNCHECKED_CAST")\n                val result = nextValue as T\n                nextValue = null\n
                return result\n            }\n            else -> throw exceptionalState()\n        }\n    }\n\n    private fun nextNotReady(): T
{\n        if (!hasNext()) throw NoSuchElementException() else return next()\n    }\n\n    private fun
exceptionalState(): Throwable = when (state) {\n        State_Done -> NoSuchElementException()\n        State_Failed
-> IllegalStateException("\\Iterator has failed.")\n        else -> IllegalStateException("\\Unexpected state of the
iterator: $state")\n    }\n\n    override suspend fun yield(value: T) {\n        nextValue = value\n        state =
State_Ready\n        return suspendCoroutineUninterceptedOrReturn
        {\n            c ->\n                nextStep = c\n                COROUTINE_SUSPENDED\n            }\n        }\n\n        override suspend fun
yieldAll(iterator: Iterator<T>) {\n            if (!iterator.hasNext()) return\n            nextIterator = iterator\n            state =
State_ManyReady\n            return suspendCoroutineUninterceptedOrReturn {\n                c ->\n                    nextStep = c\n
                    COROUTINE_SUSPENDED\n                }\n            }\n\n            // Completion continuation implementation\n            override fun
resumeWith(result: Result<Unit>) {\n                result.getOrThrow() // just rethrow exception if it is there\n                state =
State_Done\n            }\n\n            override val context: CoroutineContext\n                get() = EmptyCoroutineContext\n        }\n\n        /*\n     * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n     * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n     */\n\npackage
kotlin.collections\n\ninternal fun checkWindowSizeStep(size:
Int, step: Int) {\n    require(size > 0 && step > 0) {\n        if (size != step)\n            "\\Both size $size and step $step
must be greater than zero."
        else\n            "\\size $size must be greater than zero."
    }\n}\n\ninternal fun <T>
Sequence<T>.windowedSequence(size: Int, step: Int, partialWindows: Boolean, reuseBuffer: Boolean):
Sequence<List<T>> {\n    checkWindowSizeStep(size, step)\n    return Sequence { windowedIterator(iterator(),
size, step, partialWindows, reuseBuffer) }\n}\n\ninternal fun <T> windowedIterator(iterator: Iterator<T>, size: Int,
step: Int, partialWindows: Boolean, reuseBuffer: Boolean): Iterator<List<T>> {\n    if (!iterator.hasNext()) return
EmptyIterator\n    return iterator<List<T>> {\n        val bufferInitialCapacity = size.coerceAtMost(1024)\n        val
gap = step - size\n        if (gap >= 0) {\n            var buffer = ArrayList<T>(bufferInitialCapacity)\n            var skip =
0\n            for (e in iterator) {\n
                if (skip > 0) { skip -= 1; continue }\n                buffer.add(e)\n                if (buffer.size == size) {\n
                    yield(buffer)\n                    if (reuseBuffer) buffer.clear() else buffer = ArrayList(size)\n                    skip = gap\n
                }\n            }\n        }\n    }\n}\n

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        }
    }
    if (buffer.isNotEmpty()) {
        if (partialWindows || buffer.size == size)
            yield(buffer)
        } else {
            var buffer = RingBuffer<T>(bufferInitialCapacity)
            for (e in iterator) {
                buffer.add(e)
                if (buffer.isFull()) {
                    if (buffer.size < size) {
                        buffer = buffer.expanded(maxCapacity = size);
                        continue
                    }
                    yield(if (reuseBuffer) buffer else ArrayList(buffer))
                }
                buffer.removeFirst(step)
            }
            if (partialWindows) {
                while (buffer.size > step) {
                    yield(if (reuseBuffer) buffer else ArrayList(buffer))
                }
                buffer.removeFirst(step)
            }
            if (buffer.isNotEmpty()) yield(buffer)
        }
    }
}

internal class MovingSubList<out E>(private val list: List<E>) : AbstractList<E>(), RandomAccess {
    private var fromIndex: Int = 0
    private var _size: Int = 0
    fun move(fromIndex: Int, toIndex: Int) {
        checkRangeIndexes(fromIndex, toIndex, list.size)
        this.fromIndex = fromIndex
        this._size = toIndex - fromIndex
    }
    override fun get(index: Int): E {
        checkElementIndex(index, _size)
        return list[fromIndex + index]
    }
    override val size: Int get() = _size
}

/**
 * Provides ring buffer implementation.
 * Buffer overflow is not allowed so [add] doesn't overwrite tail but raises an exception.
 */
private class RingBuffer<T>(private val buffer: Array<Any?>, filledSize: Int) : AbstractList<T>(), RandomAccess {
    init {
        require(filledSize >= 0) { "\"ring buffer filled size should not be negative but it is $filledSize\""}
        require(filledSize <= buffer.size) { "\"ring buffer filled size: $filledSize cannot be larger than the buffer size: ${buffer.size}\""}
    }
    constructor(capacity: Int) : this(arrayOfNulls<Any?>(capacity), 0)
    private val capacity = buffer.size
    private var startIndex: Int = 0
    override var size: Int = filledSize
    private set
    override fun get(index: Int): T {
        checkElementIndex(index, size)
        @SuppressWarnings("UNCHECKED_CAST")
        return buffer[startIndex.forward(index)] as T
    }
    fun isFull() = size == capacity
    override fun iterator(): Iterator<T> = object : AbstractIterator<T>() {
        private var count = size
        private var index = startIndex
        override fun computeNext() {
            if (count == 0) {
                done()
            } else {
                @SuppressWarnings("UNCHECKED_CAST")
                setNext(buffer[index] as T)
                index = index.forward(1)
                count--
            }
        }
    }
    @SuppressWarnings("UNCHECKED_CAST")
    override fun <T> toArray(array: Array<T>): Array<T> {
        val result: Array<T?> = if (array.size < this.size) array.copyOf(this.size) else array as Array<T?>
        val size = this.size
        var widx = 0
        var idx = startIndex
        while (widx < size && idx < capacity) {
            result[widx] = buffer[idx] as T
            widx++
            idx++
        }
        idx = 0
        while (widx < size) {
            result[widx] = buffer[idx] as T
            widx++
            idx++
        }
        if (result.size > this.size) result[this.size] = null
        return result as Array<T>
    }
    override fun toArray(): Array<Any?> {
        return toArray(arrayOfNulls(size))
    }
    /**
     * Creates a new ring buffer with the capacity equal to the minimum of [maxCapacity] and 1.5 * [capacity].
     * The returned ring buffer contains the same elements as this ring buffer.
     */
    fun expanded(maxCapacity: Int): RingBuffer<T> {
        val newCapacity = (capacity + (capacity shr 1) + 1).coerceAtMost(maxCapacity)
        val newBuffer = if (startIndex == 0) buffer.copyOf(newCapacity) else toArray(arrayOfNulls(newCapacity))
        return RingBuffer(newBuffer, size)
    }
    /**
     * Add [element] to the buffer or fail with [IllegalStateException] if no free space available in the buffer
     */
    fun add(element: T) {
        if (isFull()) {
            throw IllegalStateException("\"ring buffer is full\"")
        }
        buffer[startIndex.forward(size)] = element
        size++
    }
    /**
     * Removes [n] first elements from the buffer or fails with [IllegalArgumentException] if not enough elements in the buffer to remove
     */
    fun removeFirst(n: Int) {
        require(n >= 0) { "\"n shouldn't be negative but it is $n\""}
        require(n <= size) { "\"n shouldn't be greater than the buffer size: n = $n, size = $size\""}
        if (n > 0) {
            val start = startIndex
            val end = start.forward(n)
            if (start > end) {
                buffer.fill(null, start, capacity)
            }
            buffer.fill(null, 0, end)
        } else {
            buffer.fill(null, start, end)
        }
        startIndex = end
        size -= n
    }
}

@Suppress("NOTHING_TO_INLINE")
private inline fun Int.forward(n: Int): Int = (this + n) % capacity

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 */

```

found in the license/LICENSE.txt file.\n *\n\npackage kotlin.collections\n\n// UByteArray

```
=====\n@Exp  
perimentalUnsignedTypes\nprivate  
fun partition(\n array: UByteArray, left: Int, right: Int): Int {\n var i = left\n var j = right\n val pivot =  
array[(left + right) / 2]\n while (i <= j) {\n while (array[i] < pivot)\n i++\n while (array[j] >  
pivot)\n j--\n if (i <= j) {\n val tmp = array[i]\n array[i] = array[j]\n array[j] = tmp\n i++\n j--\n }\n }\n return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n array: UByteArray, left: Int, right: Int) {\n val index = partition(array, left, right)\n if (left < index - 1)\n quickSort(array, left, index - 1)\n if (index < right)\n quickSort(array, index, right)\n}\n\n// UShortArray  
=====\n@Exp
```

```
perimentalUnsignedTypes\nprivate fun partition(\n array: UShortArray, left: Int,  
right: Int): Int {\n var i = left\n var j = right\n val pivot = array[(left + right) / 2]\n while (i <= j) {\n while (array[i] < pivot)\n i++\n while (array[j] > pivot)\n j--\n if (i <= j) {\n val tmp =  
array[i]\n array[i] = array[j]\n array[j] = tmp\n i++\n j--\n }\n }\n return  
i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n array: UShortArray, left: Int, right: Int) {\n val  
index = partition(array, left, right)\n if (left < index - 1)\n quickSort(array, left, index - 1)\n if (index <  
right)\n quickSort(array, index, right)\n}\n\n// UIntArray  
=====\n@Exp
```

```
perimentalUnsignedTypes\nprivate fun partition(\n array: UIntArray, left: Int, right: Int): Int {\n var i = left\n var j = right\n val pivot = array[(left + right) / 2]\n while (i <= j)  
{\n while (array[i] < pivot)\n i++\n while (array[j] > pivot)\n j--\n if (i <= j) {\n  
val tmp = array[i]\n array[i] = array[j]\n array[j] = tmp\n i++\n j--\n }\n }\n return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n array: UIntArray, left: Int, right: Int) {\n val  
index = partition(array, left, right)\n if (left < index - 1)\n quickSort(array, left, index - 1)\n if (index <  
right)\n quickSort(array, index, right)\n}\n\n// ULongArray  
=====\n@Exp
```

```
perimentalUnsignedTypes\nprivate fun partition(\n array: ULongArray, left: Int, right: Int): Int {\n var i = left\n var j = right\n val pivot = array[(left + right) / 2]\n while (i <= j) {\n while (array[i] < pivot)\n i++\n while (array[j] > pivot)\n j--\n if (i  
<= j) {\n val tmp = array[i]\n array[i] = array[j]\n array[j] = tmp\n i++\n j--\n  
}\n }\n return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n array: ULongArray, left: Int,  
right: Int) {\n val index = partition(array, left, right)\n if (left < index - 1)\n quickSort(array, left, index - 1)\n if (index < right)\n quickSort(array, index, right)\n}\n\n// Interfaces  
=====\n@Exp
```

```
=====\n@Exp  
* Sorts the given array using qsort algorithm.\n *\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:  
UByteArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex -  
1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UShortArray, fromIndex: Int, toIndex: Int) =  
quickSort(array, fromIndex, toIndex - 1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UIntArray,  
fromIndex: Int, toIndex:
```

```
Int) = quickSort(array, fromIndex, toIndex - 1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:  
ULongArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex - 1), "/*\n * Copyright 2010-  
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the  
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin\n\nimport  
kotlin.internal.InlineOnly\n\n/*\n * Compares this object with the specified object for order. Returns zero if this  
object is equal\n * to the specified [other] object, a negative number if it's less than [other], or a positive number\n * if it's greater than [other].\n *\n * This function delegates to [Comparable.compareTo] and allows to call it in infix  
form.\n *\n@InlineOnly\n@SinceKotlin("1.6")\npublic inline infix fun <T> Comparable<T>.compareTo(other:  
T): Int =\n this.compareTo(other)\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and
```


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```

package kotlin.contracts
import
kotlin.internal.ContractsDsl
import kotlin.internal.InlineOnly

```

* This marker distinguishes the experimental contract declaration API and is used to opt-in for that feature when declaring contracts of user functions.

* Any usage of a declaration annotated with `@ExperimentalContracts` must be accepted either by annotating that usage with the `[OptIn]` annotation, e.g. `@OptIn(ExperimentalContracts::class)`, or by using the compiler argument `-opt-in=kotlin.contracts.ExperimentalContracts`.

```

@Retention(AnnotationRetention.BINARY)
@SinceKotlin("1.3")
@RequiresOptIn
@MustBeDocumente
d
public annotation class ExperimentalContracts

```

* Provides a scope, where the functions of the contract DSL, such as `[returns]`, `[callsInPlace]`, etc., can be used to describe the contract of a function.

* This type is used as a receiver type of the lambda function passed to the `[contract]` function.

```

@see contract

```

```

@ContractsDsl
@ExperimentalContracts
@SinceKotlin("1.3")
public interface ContractBuilder {
    /**
     * Describes a situation when a function returns normally, without any exceptions thrown.
     * Use [SimpleEffect.implies] function to describe a conditional effect that happens in such case.
     */
    // @sample samples.contracts.returnsContract
    @ContractsDsl public fun returns(): Returns
    /**
     * Describes a situation when a function returns normally with the specified return [value].
     * The possible values of [value] are limited to `true`, `false` or `null`.
     * Use [SimpleEffect.implies] function to describe a conditional effect that happens in such case.
     */
    // @sample samples.contracts.returnsTrueContract
    // @sample samples.contracts.returnsFalseContract
    // @sample samples.contracts.returnsNullContract
    @ContractsDsl public fun returns(value: Any?): Returns
    /**
     * Describes a situation when a function returns normally with any value that is not `null`.
     * Use [SimpleEffect.implies] function to describe a conditional effect that happens in such case.
     */
    // @sample samples.contracts.returnsNotNullContract
    @ContractsDsl public fun returnsNotNull(): ReturnsNotNull
    /**
     * Specifies that the function parameter [lambda] is invoked in place.
     * This contract specifies that:
     * 1. the function [lambda] can only be invoked during the call of the owner function,
     * and it won't be invoked after that owner function call is completed;
     * 2. _(optionally)_ the function [lambda] is invoked the amount of times specified by the [kind] parameter,
     * see the [InvocationKind] enum for possible values.
     */
    A function declaring the `callsInPlace` effect must be _inline_.
    // @sample
    samples.contracts.callsInPlaceAtMostOnceContract
    // @sample
    samples.contracts.callsInPlaceAtLeastOnceContract
    // @sample
    samples.contracts.callsInPlaceExactlyOnceContract
    // @sample
    samples.contracts.callsInPlaceUnknownContract
    // @ContractsDsl public fun <R> callsInPlace(lambda: Function<R>, kind: InvocationKind = InvocationKind.UNKNOWN): CallsInPlace
    /**
     * Specifies how many times a function invokes its function parameter in place.
     * See [ContractBuilder.callsInPlace] for the details of the call-in-place function contract.
     */
    // @ContractsDsl
    // @ExperimentalContracts
    // @SinceKotlin("1.3")
    public enum class InvocationKind {
        /**
         * A function parameter will be invoked one time or not invoked at all.
         */
        // @sample
        samples.contracts.callsInPlaceAtMostOnceContract
        @ContractsDsl AT_MOST_ONCE,
        /**
         * A function parameter will be invoked one or more times.
         */
        // @sample
        samples.contracts.callsInPlaceAtLeastOnceContract
        @ContractsDsl AT_LEAST_ONCE,
        /**
         * A function parameter will be invoked exactly one time.
         */
        // @sample
        samples.contracts.callsInPlaceExactlyOnceContract
        @ContractsDsl EXACTLY_ONCE,
        /**
         * A function parameter is called in place, but it's unknown how many times it can be called.
         */
        // @sample
        samples.contracts.callsInPlaceUnknownContract
        @ContractsDsl UNKNOWN
    }
    /**
     * Specifies the contract of a function.
     * The contract description must be at the beginning of a function and have at least one
    
```



```

coroutine. It is an indexed set of [Element] instances.\n * An indexed set is a mix between a set and a map.\n *
Every element in this set has a unique [Key].\n *@\n@SinceKotlin("1.3")\npublic interface CoroutineContext {\n
/**\n * Returns the element with the given [key] from this context or `null`.\n *@\n public operator fun <E :
Element> get(key: Key<E>): E?\n\n /**\n * Accumulates entries
of this context starting with [initial] value and applying [operation]\n * from left to right to current accumulator
value and each element of this context.\n *@\n public fun <R> fold(initial: R, operation: (R, Element) -> R):
R\n\n /**\n * Returns a context containing elements from this context and elements from other [context].\n *
The elements from this context with the same key as in the other one are dropped.\n *@\n public operator fun
plus(context: CoroutineContext): CoroutineContext =\n    if (context === EmptyCoroutineContext) this else // fast
path -- avoid lambda creation\n        context.fold(this) { acc, element ->\n            val removed =
acc.minusKey(element.key)\n            if (removed === EmptyCoroutineContext) element else {\n                //
make sure interceptor is always last in the context (and thus is fast to get when present)\n                val interceptor
= removed[ContinuationInterceptor]\n                if (interceptor == null) CombinedContext(removed, element) else {\n
                    val left =
removed.minusKey(ContinuationInterceptor)\n                    if (left === EmptyCoroutineContext)
CombinedContext(element, interceptor) else\n                        CombinedContext(CombinedContext(left, element),
interceptor)\n                }\n            }\n\n /**\n * Returns a context containing elements from this
context, but without an element with\n * the specified [key].\n *@\n public fun minusKey(key: Key<*>):
CoroutineContext\n\n /**\n * Key for the elements of [CoroutineContext]. [E] is a type of element with this
key.\n *@\n public interface Key<E : Element>{\n\n /**\n * An element of the [CoroutineContext]. An
element of the coroutine context is a singleton context by itself.\n *@\n public interface Element :
CoroutineContext {\n\n /**\n * A key of this coroutine context element.\n\n *@\n public val key: Key<*>\n\n public override operator fun <E : Element> get(key: Key<E>): E?
=\n    @Suppress("UNCHECKED_CAST")\n    if (this.key == key) this as E else null\n\n public
override fun <R> fold(initial: R, operation: (R, Element) -> R): R =\n    operation(initial, this)\n\n public
override fun minusKey(key: Key<*>): CoroutineContext =\n    if (this.key == key) EmptyCoroutineContext
else this\n }\n}\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n *\n */\npackage kotlin.coroutines\nimport kotlin.coroutines.CoroutineContext.Element\nimport
kotlin.coroutines.CoroutineContext.Key\n\n/**\n * Base class for [CoroutineContext.Element] implementations.\n
*\n */\n@SinceKotlin("1.3")\npublic abstract class AbstractCoroutineContextElement(public
override val key: Key<*>) : Element\n\n/**\n * Base class for [CoroutineContext.Key] associated with
polymorphic [CoroutineContext.Element] implementation.\n * Polymorphic element implementation implies
delegating its [get][Element.get] and [minusKey][Element.minusKey]\n * to [getPolymorphicElement] and
[minusPolymorphicKey] respectively.\n * Polymorphic elements can be extracted from the coroutine context
using both element key and its supertype key.\n * Example of polymorphic elements:\n * ```\n * open class
BaseElement : CoroutineContext.Element {\n *     companion object Key : CoroutineContext.Key<BaseElement>\n *
override val key: CoroutineContext.Key<*> get() = Key\n *     // It is important to use getPolymorphicKey and
minusPolymorphicKey\n *     override fun <E : CoroutineContext.Element> get(key: CoroutineContext.Key<E>):
E? = getPolymorphicElement(key)\n *     override fun minusKey(key: CoroutineContext.Key<*>):
CoroutineContext = minusPolymorphicKey(key)\n * }\n
*\n * class DerivedElement : BaseElement() {\n *     companion object Key :
AbstractCoroutineContextKey<BaseElement, DerivedElement>(BaseElement, { it as? DerivedElement })\n * }\n *
// Now it is possible to query both `BaseElement` and `DerivedElement`\n * someContext[BaseElement] // Returns
BaseElement?, non-null both for BaseElement and DerivedElement instances\n * someContext[DerivedElement] //
Returns DerivedElement?, non-null only for DerivedElement instance\n * ```\n * @param B base class of a
polymorphic element\n * @param baseKey an instance of base key\n * @param E element type associated with the
current key\n * @param safeCast a function that can safely cast abstract [CoroutineContext.Element] to the concrete

```

```

[E] type\n *          and return the element if it is a subtype of [E] or `null` otherwise.\n
*\n@SinceKotlin("1.3")\n@ExperimentalStdlibApi\npublic abstract class AbstractCoroutineContextKey<B :
Element, E : B>(\n    baseKey: Key<B>,\n    private val safeCast:
    (element: Element) -> E?)\n): Key<E> {\n    private val topmostKey: Key<*> = if (baseKey is
AbstractCoroutineContextKey<*, *>) baseKey.topmostKey else baseKey\n\n    internal fun tryCast(element:
Element): E? = safeCast(element)\n    internal fun isSubKey(key: Key<*>): Boolean = key === this || topmostKey
=== key\n}\n\n/**\n * Returns the current element if it is associated with the given [key] in a polymorphic manner
or `null` otherwise.\n * This method returns non-null value if either [Element.key] is equal to the given [key] or if
the [key] is associated\n * with [Element.key] via [AbstractCoroutineContextKey].\n * See
[AbstractCoroutineContextKey] for the example of usage.\n
*\n@SinceKotlin("1.3")\n@ExperimentalStdlibApi\npublic fun <E : Element>
Element.getPolymorphicElement(key: Key<E>): E? {\n    if (key is AbstractCoroutineContextKey<*, *>) {\n
@Suppress("UNCHECKED_CAST")\n        return if (key.isSubKey(this.key)) key.tryCast(this) as? E else null\n
}\n    @Suppress("UNCHECKED_CAST")\n
    return if (this.key === key) this as E else null\n}\n\n/**\n * Returns empty coroutine context if the element is
associated with the given [key] in a polymorphic manner\n * or `null` otherwise.\n * This method returns empty
context if either [Element.key] is equal to the given [key] or if the [key] is associated\n * with [Element.key] via
[AbstractCoroutineContextKey].\n * See [AbstractCoroutineContextKey] for the example of usage.\n
*\n@SinceKotlin("1.3")\n@ExperimentalStdlibApi\npublic fun Element.minusPolymorphicKey(key: Key<*>):
CoroutineContext {\n    if (key is AbstractCoroutineContextKey<*, *>) {\n        return if (key.isSubKey(this.key)
&& key.tryCast(this) != null) EmptyCoroutineContext else this\n    }\n    return if (this.key === key)
EmptyCoroutineContext else this\n}\n\n/**\n * An empty coroutine context.\n */\n@SinceKotlin("1.3")\npublic
object EmptyCoroutineContext : CoroutineContext, Serializable {\n    private const val serialVersionUID:
Long = 0\n    private fun readResolve(): Any = EmptyCoroutineContext\n\n    public override fun <E : Element>
get(key: Key<E>): E? = null\n    public override fun <R> fold(initial: R, operation: (R, Element) -> R): R = initial\n
public override fun plus(context: CoroutineContext): CoroutineContext = context\n    public override fun
minusKey(key: Key<*>): CoroutineContext = this\n    public override fun hashCode(): Int = 0\n    public override
fun toString(): String = "EmptyCoroutineContext"\n}\n\n//----- internal impl -----
\n\n// this class is not exposed, but is hidden inside implementations\n// this is a left-biased list, so that `plus` works
naturally\n@SinceKotlin("1.3")\ninternal class CombinedContext(\n    private val left: CoroutineContext,\n
private val element: Element)\n): CoroutineContext, Serializable {\n\n    override fun <E : Element> get(key:
Key<E>): E? {\n        var cur = this\n        while (true) {\n            cur.element[key]?.let
{ return it }\n            val next = cur.left\n            if (next is CombinedContext) {\n                cur = next\n            }
else {\n                return next[key]\n            }\n        }\n    }\n\n    public override fun <R> fold(initial: R, operation:
(R, Element) -> R): R =\n        operation(left.fold(initial, operation), element)\n\n    public override fun
minusKey(key: Key<*>): CoroutineContext {\n        element[key]?.let { return left }\n        val newLeft =
left.minusKey(key)\n        return when {\n            newLeft === left -> this\n            newLeft ===
EmptyCoroutineContext -> element\n            else -> CombinedContext(newLeft, element)\n        }\n    }\n\n    private fun size(): Int {\n        var cur = this\n        var size = 2\n        while (true) {\n            cur = cur.left as?
CombinedContext ?: return size\n            size++\n        }\n    }\n\n    private fun contains(element: Element): Boolean =\n        get(element.key)
=== element\n\n    private fun containsAll(context: CombinedContext): Boolean {\n        var cur = context\n        while (true) {\n            if (!contains(cur.element)) return false\n            val next = cur.left\n            if (next is
CombinedContext) {\n                cur = next\n            } else {\n                return contains(next as Element)\n            }\n        }\n    }\n\n    override fun equals(other: Any?): Boolean =\n        this === other || other is CombinedContext
&& other.size() == size() && other.containsAll(this)\n\n    override fun hashCode(): Int = left.hashCode() +
element.hashCode()\n\n    override fun toString(): String =\n        "[" + fold("") { acc, element ->\n            if
(acc.isEmpty()) element.toString() else "$acc, $element"\n        } + "]\n\n    private fun writeReplace(): Any {\n

```

```

    val n = size()\n    val elements = arrayOfNulls<CoroutineContext>(n)\n    var index = 0\n    fold(Unit) { _,
element -> elements[index++]
    = element }\n    check(index == n)\n    @Suppress("UNCHECKED_CAST")\n    return
Serialized(elements as Array<CoroutineContext>)\n    }\n\n    private class Serialized(val elements:
Array<CoroutineContext>) : Serializable {\n    companion object {\n    private const val serialVersionUID:
Long = 0L\n    }\n\n    private fun readResolve(): Any = elements.fold(EmptyCoroutineContext,
CoroutineContext::plus)\n    }\n}\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("IntrinsicsKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage
kotlin.coroutines.intrinsics\n\nimport kotlin.contracts.*\nimport kotlin.coroutines.*\nimport
kotlin.internal.InlineOnly\n\n/**\n * Obtains the current continuation instance inside suspend functions and either
suspends\n * currently running
coroutine or returns result immediately without suspension.\n * If the [block] returns the special
[CoroutineContext.SUSPENDED] value, it means that suspend function did suspend the execution and will\n * not
return any result immediately. In this case, the [Continuation] provided to the [block] shall be\n * resumed by
invoking [Continuation.resumeWith] at some moment in the\n * future when the result becomes available to resume
the computation.\n * Otherwise, the return value of the [block] must have a type assignable to [T] and represents
the result of this suspend function.\n * It means that the execution was not suspended and the [Continuation]
provided to the [block] shall not be invoked.\n * As the result type of the [block] is declared as `Any?` and cannot be
correctly type-checked,\n * its proper return type remains on the conscience of the suspend function's author.\n * Invocation of [Continuation.resumeWith] resumes coroutine directly in the invoker's thread without
going through the\n * [ContinuationInterceptor] that might be present in the coroutine's [CoroutineContext].\n * It
is the invoker's responsibility to ensure that a proper invocation context is established.\n * [Continuation.intercepted]
can be used to acquire the intercepted continuation.\n * Note that it is not recommended to call either
[Continuation.resume] nor [Continuation.resumeWithException] functions synchronously\n * in the same
stackframe where suspension function is run. Use [suspendCoroutine] as a safer way to obtain current\n *
continuation instance.\n */\n@SinceKotlin("1.3")\n@InlineOnly\n@Suppress("UNUSED_PARAMETER",
"RedundantSuspendModifier")\npublic suspend inline fun <T>
suspendCoroutineUninterceptedOrReturn(crossinline block: (Continuation<T>) -> Any?): T {\n    contract {
callsInPlace(block, InvocationKind.EXACTLY_ONCE) }\n    throw NotImplementedError("Implementation of
suspendCoroutineUninterceptedOrReturn is intrinsic")\n}\n\n/**\n * This value is
used as a return value of [suspendCoroutineUninterceptedOrReturn] `block` argument to state that\n * the execution
was suspended and will not return any result immediately.\n * Note: this value should not be used in general
code.** Using it outside of the context of\n * `suspendCoroutineUninterceptedOrReturn` function return value
(including, but not limited to,\n * storing this value in other properties, returning it from other functions, etc)\n * can
lead to unspecified behavior of the code.\n */\n// It is implemented as property with getter to avoid ProGuard
<clinit> problem with multifile IntrinsicsKt class\n@SinceKotlin("1.3")\npublic val COROUTINE_SUSPENDED:
Any get() = CoroutineSingletons.COROUTINE_SUSPENDED\n\n// Using enum here ensures two important
properties:\n// 1. It makes SafeContinuation serializable with all kinds of serialization frameworks (since all of them
natively support enums)\n// 2. It improves debugging experience, since you clearly see toString()
value of those objects and what package they come from\n@SinceKotlin("1.3")\n@PublishedApi // This class is
Published API via serialized representation of SafeContinuation, don't rename/move\n\ninternal enum class
CoroutineSingletons { COROUTINE_SUSPENDED, UNDECIDED, RESUMED }\n"/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.experimental\n\n/**
Performs a bitwise AND operation between the two values.
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.and(other: Byte): Byte =

```

(this.toInt() and other.toInt()).toByte()\n\n** Performs a bitwise OR operation between the two values.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.or(other: Byte): Byte =
```

(this.toInt() or other.toInt()).toByte()\n\n** Performs a bitwise XOR operation between the two values.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.xor(other: Byte): Byte =
```

(this.toInt() xor other.toInt()).toByte()\n\n** Inverts the bits in this value.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Byte.inv(): Byte =
```

(this.toInt().inv()).toByte()\n\n** Performs a bitwise AND operation between the two values.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.and(other: Short): Short =
```

(this.toInt() and other.toInt()).toShort()\n\n** Performs a bitwise OR operation between the two values.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.or(other: Short): Short =
```

(this.toInt() or other.toInt()).toShort()\n\n** Performs a bitwise XOR operation between the two values.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.xor(other: Short): Short =
```

(this.toInt() xor other.toInt()).toShort()\n\n** Inverts the bits in this value.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Short.inv(): Short =
```

(this.toInt().inv()).toShort()\n\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.experimental\n\n**\n * The experimental marker for type inference augmenting annotations.\n * Any usage of a declaration annotated with `@ExperimentalTypeInference` must be accepted either by\n * annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalTypeInference::class)`,\n * or by using the compiler argument `-opt-in=kotlin.experimental.ExperimentalTypeInference`.\n *\n@RequiresOptIn(level = RequiresOptIn.Level.ERROR)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.ANNOTATION_CLASS)\n@SinceKotlin("1.3")\npublic annotation class ExperimentalTypeInference\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.internal\n\n**\n * Specifies that the corresponding type should be ignored during type inference.\n *\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class NoInfer\n\n**\n * Specifies that the constraint built for the type during type inference should be an equality one.\n *\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class Exact\n\n**\n * Specifies that a corresponding member has the lowest priority in overload resolution.\n *\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class LowPriorityInOverloadResolution\n\n**\n * Specifies that the corresponding member has the highest priority in overload resolution. Effectively this means that\n * an extension annotated with this annotation will win in overload resolution over a member with the same signature.\n *\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class HidesMembers\n\n**\n * The value of this type parameter should be mentioned in input types (argument types, receiver type or expected type).\n *\n@Target(AnnotationTarget.TYPE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class OnlyInputTypes\n\n**\n * Specifies that this function should not be called directly without inlining\n *\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.PROPERTY_GETTER, AnnotationTarget.PROPERTY_SETTER)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class InlineOnly\n\n**\n * Specifies that this declaration can have dynamic receiver type.\n *\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class

DynamicExtension\n\n/**\n * The value of this parameter should be a property reference expression (`this::foo`), referencing a `lateinit` property,\n * the backing field of which is accessible at the point where the corresponding argument is passed.\n

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*\n@Target(AnnotationTarget.VALUE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.2")\ninternal annotation class AccessibleLateinitPropertyLiteral\n\n/**\n * Specifies that this declaration is only completely supported since the specified version.\n * The Kotlin compiler of an earlier version is going to report a diagnostic on usages of this declaration.\n * The diagnostic message can be specified with [message], or via [errorCode] (takes less space, but might not be immediately clear\n * to the user). The diagnostic severity can be specified with [level]: WARNING/ERROR

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mean that either a warning or an error\n * is going to be reported, HIDDEN means that the declaration is going to be removed from resolution completely.\n * [versionKind] specifies which version should be compared with the [version] value, when compiling the usage of the annotated declaration.\n * Note that prior to 1.2, only [RequireKotlinVersionKind.LANGUAGE_VERSION] was supported, so the Kotlin compiler before 1.2 is going to\n * treat any [RequireKotlin] as if it requires the language version. Since 1.2, the Kotlin compiler supports\n * [RequireKotlinVersionKind.LANGUAGE_VERSION], [RequireKotlinVersionKind.COMPILER_VERSION] and [RequireKotlinVersionKind.API_VERSION].\n * If the actual value of [versionKind] is something different (e.g. a new version kind, added in future versions of Kotlin),\n * Kotlin 1.2 is going to ignore this [RequireKotlin] altogether, where as Kotlin before 1.2 is going to treat this as a requirement\n * on the language version.\n *\n * This annotation is erased at compile time; its arguments are stored in a more compact form in the Kotlin metadata.\n

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*\n@Target(AnnotationTarget.CLASS, AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR, AnnotationTarget.TYPEALIAS)\n@Retention(AnnotationRetention.SOURCE)\n@Repeatable\n@SinceKotlin("1.2")\ninternal annotation class RequireKotlin(\n    val version: String,\n    val message: String = "",\n    val level: DeprecationLevel = DeprecationLevel.ERROR,\n    val versionKind: RequireKotlinVersionKind = RequireKotlinVersionKind.LANGUAGE_VERSION,\n    val errorCode: Int = -1)\n\n/**\n * The kind of the version that is required by [RequireKotlin].\n *\n@SinceKotlin("1.2")\ninternal enum class RequireKotlinVersionKind {\n    LANGUAGE_VERSION,\n    COMPILER_VERSION,\n    API_VERSION,\n}\n\n/**\n * Specifies that this declaration is a part of special DSL, used for constructing function's contract.\n *\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.2")\ninternal annotation class ContractsDsl\n"/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.properties\n\nimport kotlin.reflect.KProperty\n\n/**\n * Standard property delegates.\n *\npublic object Delegates {\n    /**\n     * Returns a property delegate for a read/write property with a non-`null` value that is initialized not during\n     * object construction time but at a later time. Trying to read the property before the initial value has been\n     * assigned results in an exception.\n     *\n     * @sample samples.properties.Delegates.notNullDelegate\n     *\n     * public fun <T : Any> notNull(): ReadWriteProperty<Any?, T> = NotNullVar()\n     *\n     * Returns a property delegate for a read/write property that calls a specified callback function when changed.\n     * @param initialValue the initial value of the property.\n     * @param onChange the callback which is called after the change of the property is made. The value of the property\n     * has already been changed when this callback is invoked.\n     *\n     * @sample samples.properties.Delegates.observableDelegate\n     *\n     * public inline fun <T> observable(initialValue: T, crossinline onChange: (property: KProperty<*>, oldValue: T, newValue: T) -> Unit):\n     *     ReadWriteProperty<Any?, T> =\n     *         object : ObservableProperty<T>(initialValue) {\n     *             override fun afterChange(property: KProperty<*>, oldValue: T, newValue: T) = onChange(property, oldValue, newValue)\n     *         }\n     *\n     * Returns a property delegate for a read/write property that calls a specified callback function when changed,\n     * allowing the callback to veto the modification.\n     * @param initialValue the initial value of the property.\n     * @param onChange the callback which is called before a change to the property

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value is attempted.\n * The value of the property hasn't been changed yet, when this callback is invoked.\n *
If the callback returns `true` the value of the property is being set to the new value,\n * and if the callback returns
`false` the new value is discarded and the property remains its old value.\n * \n * @sample
samples.properties.Delegates.vetoableDelegate\n * @sample
samples.properties.Delegates.throwVetoableDelegate\n * \n public inline fun <T> vetoable(initialValue: T,
crossinline onChange: (property: KProperty<*>, oldValue: T, newValue: T) -> Boolean):\n
ReadWriteProperty<Any?, T> =\n object : ObservableProperty<T>(initialValue) {\n override fun
beforeChange(property: KProperty<*>, oldValue: T, newValue: T): Boolean = onChange(property, oldValue,
newValue)\n }\n}\n\nprivate class NotNullVar<T : Any>() : ReadWriteProperty<Any?, T> {\n private var
value: T? = null\n public override fun getValue(thisRef:
Any?, property: KProperty<*>): T {\n return value ?: throw IllegalStateException("\Property
${property.name} should be initialized before get.")\n }\n public override fun setValue(thisRef: Any?,
property: KProperty<*>, value: T) {\n this.value = value\n }\n}\n\n"/*\n * Copyright 2010-2020 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.properties\n\nimport
kotlin.reflect.KProperty\n\n/**\n * Base interface that can be used for implementing property delegates of read-only
properties.\n * This is provided only for convenience; you don't have to extend this interface\n * as long as your
property delegate has methods with the same signatures.\n * \n * @param T the type of object which owns the
delegated property.\n * @param V the type of the property value.\n */\n\npublic fun interface ReadOnlyProperty<in
T, out V> {\n /**\n * Returns the value of the property for the given object.\n * @param thisRef the object
for which the value is requested.\n * @param property the metadata for the property.\n * @return the property
value.\n */\n public operator fun getValue(thisRef: T, property: KProperty<*>): V\n}\n\n/**\n * Base interface
that can be used for implementing property delegates of read-write properties.\n * This is provided only for
convenience; you don't have to extend this interface\n * as long as your property delegate has methods with the
same signatures.\n * \n * @param T the type of object which owns the delegated property.\n * @param V the type of
the property value.\n */\n\npublic interface ReadWriteProperty<in T, V> : ReadOnlyProperty<T, V> {\n /**\n *
Returns the value of the property for the given object.\n * @param thisRef the object for which the value is
requested.\n * @param property the metadata for the property.\n
* @return the property value.\n */\n public override operator fun getValue(thisRef: T, property:
KProperty<*>): V\n\n /**\n * Sets the value of the property for the given object.\n * @param thisRef the
object for which the value is requested.\n * @param property the metadata for the property.\n * @param value
the value to set.\n */\n public operator fun setValue(thisRef: T, property: KProperty<*>, value: V)\n}\n\n/**\n *
Base interface that can be used for implementing property delegate providers.\n * This is provided only for
convenience; you don't have to extend this interface\n * as long as your delegate provider has a method with the
same signature.\n * \n * @param T the type of object which owns the delegated property.\n * @param D the type of
property delegates this provider provides.\n */\n\n@SinceKotlin("1.4")\n\npublic fun interface
PropertyDelegateProvider<in T, out D> {\n /**\n * Returns the delegate of the property for the given object.\n
*\n * This function can be used to extend the logic of creating the object (e.g. perform validation checks)\n *
to which the property implementation is delegated.\n * \n * @param thisRef the object for which property
delegate is requested.\n * @param property the metadata for the property.\n * @return the property delegate.\n
*/\n public operator fun provideDelegate(thisRef: T, property: KProperty<*>): D\n}\n\n"/*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.properties\n\nimport
kotlin.reflect.KProperty\n\n/**\n * Implements the core logic of a property delegate for a read/write property that
calls callback functions when changed.\n * @param initialValue the initial value of the property.\n */\n\npublic
abstract class ObservableProperty<V>(initialValue: V) : ReadWriteProperty<Any?,
V> {\n private var value = initialValue\n\n /**\n * The callback which is called before a change to the
property value is attempted.\n * The value of the property hasn't been changed yet, when this callback is

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invoked.\n * If the callback returns `true` the value of the property is being set to the new value,\n * and if the
callback returns `false` the new value is discarded and the property remains its old value.\n */\n protected open
fun beforeChange(property: KProperty<*>, oldValue: V, newValue: V): Boolean = true\n\n /**\n * The
callback which is called after the change of the property is made. The value of the property\n * has already been
changed when this callback is invoked.\n */\n protected open fun afterChange(property: KProperty<*>,
oldValue: V, newValue: V): Unit {} \n\n public override fun getValue(thisRef: Any?, property: KProperty<*>): V
{\n     return value\n } \n\n public override fun setValue(thisRef:
Any?, property: KProperty<*>, value: V) {\n     val oldValue = this.value\n     if (!beforeChange(property,
oldValue, value)) {\n         return\n     }\n     this.value = value\n     afterChange(property, oldValue, value)\n
}\n }", "/**\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this
source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n @file:Suppress("PackageDirectoryMismatch")\n\n package kotlin\n\n import kotlin.reflect.*\n\n /**\n * An
extension operator that allows delegating a read-only property of type [V]\n * to a property reference to a property
of type [V] or its subtype.\n * @receiver A property reference to a read-only or mutable property of type [V] or
its subtype.\n * The reference is without a receiver, i.e. it either references a top-level property or\n * has the
receiver bound to it.\n * Example:\n * ```\n * class Login(val
username: String)\n * val defaultLogin = Login("Admin")\n * val defaultUsername by defaultLogin::username\n *
// equivalent to\n * val defaultUserName get() = defaultLogin.username\n * ```\n
*/\n\n @SinceKotlin("1.4")\n\n @kotlin.internal.InlineOnly\n\n public inline operator fun <V>
KProperty0<V>.getValue(thisRef: Any?, property: KProperty<*>): V {\n     return get()\n } \n\n /**\n * An extension
operator that allows delegating a mutable property of type [V]\n * to a property reference to a mutable property of
the same type [V].\n * @receiver A property reference to a mutable property of type [V].\n * The reference is
without a receiver, i.e. it either references a top-level property or\n * has the receiver bound to it.\n * Example:\n
*/\n * ```\n * class Login(val username: String, var incorrectAttemptCounter: Int = 0)\n * val defaultLogin =
Login("Admin")\n * var defaultLoginAttempts by defaultLogin::incorrectAttemptCounter\n * // equivalent to\n *
var defaultLoginAttempts: Int\n *
get() = defaultLogin.incorrectAttemptCounter\n * set(value) { defaultLogin.incorrectAttemptCounter = value
}\n * ```\n
*/\n\n @SinceKotlin("1.4")\n\n @kotlin.internal.InlineOnly\n\n public inline operator fun <V>
KMutableProperty0<V>.setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n     set(value)\n } \n\n /**\n
* An extension operator that allows delegating a read-only member or extension property of type [V]\n * to a
property reference to a member or extension property of type [V] or its subtype.\n * @receiver A property
reference to a read-only or mutable property of type [V] or its subtype.\n * The reference has an unbound receiver of
type [T].\n * Example:\n * ```\n * class Login(val username: String)\n * val Login.user by
Login::username\n * // equivalent to\n * val Login.user get() = this.username\n * ```\n
*/\n\n @SinceKotlin("1.4")\n\n @kotlin.internal.InlineOnly\n\n public inline operator fun <T, V> KProperty1<T,
V>.getValue(thisRef: T, property: KProperty<*>):
V {\n     return get(thisRef)\n } \n\n /**\n * An extension operator that allows delegating a mutable member or
extension property of type [V]\n * to a property reference to a member or extension mutable property of the same
type [V].\n * @receiver A property reference to a read-only or mutable property of type [V] or its subtype.\n *
The reference has an unbound receiver of type [T].\n * Example:\n * ```\n * class Login(val username:
String, var incorrectAttemptCounter: Int)\n * var Login.attempts by Login::incorrectAttemptCounter\n * //
equivalent to\n * var Login.attempts: Int\n * get() = this.incorrectAttemptCounter\n * set(value) {\n
this.incorrectAttemptCounter = value\n } \n * ```\n
*/\n\n @SinceKotlin("1.4")\n\n @kotlin.internal.InlineOnly\n\n public inline operator fun <T, V> KMutableProperty1<T,
V>.setValue(thisRef: T, property: KProperty<*>, value: V) {\n
set(thisRef, value)\n }", "/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n package kotlin.random\n\n import kotlin.math.nextDown\n\n /**\n * An abstract class that is implemented by

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random number generator algorithms.

* The companion object [Random.Default] is the default instance of [Random].

* To get a seeded instance of random generator use [Random] function.

@sample

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samples.random.Randoms.defaultRandom
*/
@SinceKotlin("1.3")
public abstract class Random {
    /**
     * Gets the next random [bitCount] number of bits.
     * Generates an `Int` whose lower [bitCount] bits are
     * filled with random values and the remaining upper bits are zero.
     * @param bitCount number of bits to
     * generate, must be in range 0..32, otherwise the behavior is unspecified.
     * @sample
     samples.random.Randoms.nextBits
     */
    public abstract fun nextBits(bitCount: Int): Int
    /**
     * Gets the next random `Int` from the random number generator.
     * Generates an `Int` random value
     * uniformly distributed between `Int.MIN_VALUE` and `Int.MAX_VALUE` (inclusive).
     * @sample
     samples.random.Randoms.nextInt
     */
    public open fun nextInt(): Int = nextBits(32)
    /**
     * Gets the
     * next random non-negative `Int` from the random number generator less than the specified [until] bound.
     * Generates an `Int` random value uniformly distributed between `0` (inclusive) and the specified [until] bound
     * (exclusive).
     * @param until must be positive.
     * @throws IllegalArgumentException if [until]
     * is negative or zero.
     * @sample samples.random.Randoms.nextIntFromUntil
     */
    public open fun
    nextInt(until: Int): Int = nextInt(0, until)
    /**
     * Gets the next random `Int` from the random number
     * generator in the specified range.
     * Generates an `Int` random value uniformly
     * distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.
     * @throws
     * IllegalArgumentException if [from] is greater than or equal to [until].
     * @sample
     samples.random.Randoms.nextIntFromUntil
     */
    public open fun nextInt(from: Int, until: Int): Int {
        checkRangeBounds(from, until)
        val n = until - from
        if (n > 0 || n == Int.MIN_VALUE) {
            val
            rnd = if (n and -n == n) {
                val bitCount = fastLog2(n)
                nextBits(bitCount)
            } else {
                var v: Int
                do {
                    val bits = nextInt().ushr(1)
                    v = bits % n
                }
                while (bits - v + (n - 1) < 0)
                v
            }
            return from + rnd
        } else {
            while (true) {
                val rnd = nextInt()
                if (rnd in from until until) return rnd
            }
        }
    }
    /**
     * Gets the next random `Long` from the random number generator.
     * Generates a `Long`
     * random value uniformly distributed between `Long.MIN_VALUE` and `Long.MAX_VALUE` (inclusive).
     * @sample samples.random.Randoms.nextLong
     */
    public open fun nextLong(): Long =
    nextInt().toLong().shl(32) + nextInt()
    /**
     * Gets the next random non-negative `Long` from the random
     * number generator less than the specified [until] bound.
     * Generates a `Long` random value uniformly
     * distributed between `0` (inclusive) and the specified [until] bound (exclusive).
     * @param until must be
     * positive.
     * @throws IllegalArgumentException if [until] is negative or zero.
     * @sample
     samples.random.Randoms.nextLongFromUntil
     */
    public open fun nextLong(until: Long): Long =
    nextLong(0, until)
    /**
     * Gets the next random `Long` from the random number generator in the specified
     * range.
     * Generates a `Long` random value uniformly distributed between the specified [from] (inclusive) and
     * [until] (exclusive) bounds.
     * @throws IllegalArgumentException if [from] is greater than or equal to
     * [until].
     * @sample samples.random.Randoms.nextLongFromUntil
     */
    public open fun
    nextLong(from: Long, until: Long): Long {
        checkRangeBounds(from, until)
        val n = until - from
        if (n > 0) {
            val rnd: Long
            if (n and -n == n) {
                val nLow = n.toInt()
                val nHigh
                = (n ushr 32).toInt()
                rnd = when {
                    nLow != 0 -> {
                        val bitCount =
                        fastLog2(nLow)
                        // toUInt().toLong()
                        nextBits(bitCount).toLong() and
                        0xFFFF_FFFF
                    }
                    nHigh == 1 -> {
                        // toUInt().toLong()
                        nextInt().toLong() and
                        0xFFFF_FFFF
                    }
                    else -> {
                        val bitCount = fastLog2(nHigh)
                        nextBits(bitCount).toLong().shl(32) + (nextInt().toLong() and 0xFFFF_FFFF)
                    }
                }
            } else {
                var v: Long
                do {
                    val bits = nextLong().ushr(1)
                    v = bits %
                    n
                } while (bits - v + (n - 1) < 0)
                rnd = v
            }
            return from + rnd
        } else {
            while (true) {
                val rnd = nextLong()
                if (rnd in from until until) return rnd
            }
        }
    }
}

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}\n }\n\n /**\n * Gets the next random [Boolean] value.\n * \n * @sample
samples.random.Randoms.nextBoolean\n *^\n public open fun nextBoolean(): Boolean = nextBits(1) != 0\n\n
/**\n * Gets the next random [Double] value uniformly distributed between 0 (inclusive) and 1 (exclusive).\n
*\n * @sample samples.random.Randoms.nextDouble\n *^\n public open fun nextDouble(): Double =
doubleFromParts(nextBits(26), nextBits(27))\n\n /**\n * Gets the next random non-negative `Double` from the
random number generator less than the specified [until] bound.\n * \n * Generates a `Double` random value
uniformly distributed between 0 (inclusive) and [until] (exclusive).\n * \n * @throws IllegalArgumentException
if [until] is negative or zero.\n * \n * @sample samples.random.Randoms.nextDoubleFromUntil\n *^\n
public open fun nextDouble(until: Double): Double = nextDouble(0.0, until)\n\n /**\n * Gets the next random
`Double` from the random number generator in the specified range.\n * \n * Generates a `Double` random value
uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n * \n * [from]
and [until] must be finite otherwise the behavior is unspecified.\n * \n
* @throws IllegalArgumentException if [from] is greater than or equal to [until].\n * \n * @sample
samples.random.Randoms.nextDoubleFromUntil\n *^\n public open fun nextDouble(from: Double, until:
Double): Double {\n    checkRangeBounds(from, until)\n    val size = until - from\n    val r = if
(size.isInfinite() && from.isFinite() && until.isFinite()) {\n        val r1 = nextDouble() * (until / 2 - from / 2)\n
    from + r1 + r1\n    } else {\n        from + nextDouble() * size\n    }\n    return if (r >= until)
until.nextDown() else r\n }\n\n /**\n * Gets the next random [Float] value uniformly distributed between 0
(inclusive) and 1 (exclusive).\n * \n * @sample samples.random.Randoms.nextFloat\n *^\n public open fun
nextFloat(): Float = nextBits(24) / (1 shl 24).toFloat()\n\n /**\n * Fills a subrange of the specified byte [array]
starting from [fromIndex] inclusive and ending [toIndex] exclusive\n
* with random bytes.\n * \n * @return [array] with the subrange filled with random bytes.\n * \n *
@sample samples.random.Randoms.nextBytes\n *^\n public open fun nextBytes(array: ByteArray, fromIndex:
Int = 0, toIndex: Int = array.size): ByteArray {\n    require(fromIndex in 0..array.size && toIndex in 0..array.size)
{\n        \"fromIndex ($fromIndex) or toIndex ($toIndex) are out of range: 0..${array.size}.\" }\n    require(fromIndex <=
toIndex) {\n        \"fromIndex ($fromIndex) must be not greater than toIndex ($toIndex).\" }\n\n    val steps = (toIndex -
fromIndex) / 4\n    var position = fromIndex\n    repeat(steps) {\n        val v = nextInt()\n
array[position] = v.toByte()\n        array[position + 1] = v.ushr(8).toByte()\n        array[position + 2] =
v.ushr(16).toByte()\n        array[position + 3] = v.ushr(24).toByte()\n        position += 4\n    }\n\n    val
remainder = toIndex - position\n    val vr =
nextBits(remainder * 8)\n    for (i in 0 until remainder) {\n        array[position + i] = vr.ushr(i * 8).toByte()\n
    }\n\n    return array\n }\n\n /**\n * Fills the specified byte [array] with random bytes and returns it.\n
*\n * @return [array] filled with random bytes.\n * \n * @sample samples.random.Randoms.nextBytes\n
*\n *^\n public open fun nextBytes(array: ByteArray): ByteArray = nextBytes(array, 0, array.size)\n\n /**\n *
Creates a byte array of the specified [size], filled with random bytes.\n * \n * @sample
samples.random.Randoms.nextBytes\n *^\n public open fun nextBytes(size: Int): ByteArray =
nextBytes(ByteArray(size))\n\n\n /**\n * The default random number generator.\n * \n * On JVM this
generator is thread-safe, its methods can be invoked from multiple threads.\n * \n * @sample
samples.random.Randoms.defaultRandom\n *^\n companion object Default : Random(), Serializable {\n
    private val defaultRandom: Random = defaultPlatformRandom()\n    private object Serialized : Serializable
{\n        private const val serialVersionUID = 0L\n        private fun readResolve(): Any = Random\n    }\n\n    private fun writeReplace(): Any = Serialized\n    override fun nextBits(bitCount: Int): Int =
defaultRandom.nextBits(bitCount)\n    override fun nextInt(): Int = defaultRandom.nextInt()\n    override fun
nextInt(until: Int): Int = defaultRandom.nextInt(until)\n    override fun nextInt(from: Int, until: Int): Int =
defaultRandom.nextInt(from, until)\n    override fun nextLong(): Long = defaultRandom.nextLong()\n
    override fun nextLong(until: Long): Long = defaultRandom.nextLong(until)\n    override fun nextLong(from:
Long, until: Long): Long = defaultRandom.nextLong(from, until)\n    override fun nextBoolean(): Boolean =
defaultRandom.nextBoolean()\n    override fun nextDouble(): Double = defaultRandom.nextDouble()\n
}

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    override fun nextDouble(until: Double): Double = defaultRandom.nextDouble(until)\n    override fun
nextDouble(from: Double, until: Double): Double = defaultRandom.nextDouble(from, until)\n\n    override fun
nextFloat(): Float = defaultRandom.nextFloat()\n\n    override fun nextBytes(array: ByteArray): ByteArray =
defaultRandom.nextBytes(array)\n    override fun nextBytes(size: Int): ByteArray =
defaultRandom.nextBytes(size)\n    override fun nextBytes(array: ByteArray, fromIndex: Int, toIndex: Int):
ByteArray =\n        defaultRandom.nextBytes(array, fromIndex, toIndex)\n    } \n} \n\n/**\n * Returns a repeatable
random number generator seeded with the given [seed] `Int` value.\n * \n * Two generators with the same seed
produce the same sequence of values within the same version of Kotlin runtime.\n * \n * *Note:* Future versions of
Kotlin may change the algorithm of this seeded number generator so that it will return\n * a sequence of values
different from the current one for a given seed.\n * \n * On JVM the returned generator is NOT thread-safe. Do not
invoke it from multiple threads without proper synchronization.\n * \n * @sample
samples.random.Randoms.seededRandom\n * \n * @SinceKotlin("1.3")\n\npublic fun Random(seed: Int): Random =
XorWowRandom(seed, seed.shr(31))\n\n/**\n * Returns a repeatable random number generator seeded with the
given [seed] `Long` value.\n * \n * Two generators with the same seed produce the same sequence of values within
the same version of Kotlin runtime.\n * \n * *Note:* Future versions of Kotlin may change the algorithm of this
seeded number generator so that it will return\n * a sequence of values different from the current one for a given
seed.\n * \n * On JVM the returned generator is NOT thread-safe. Do not invoke it from multiple threads without
proper synchronization.\n * \n * @sample samples.random.Randoms.seededRandom\n
* \n * @SinceKotlin("1.3")\n\npublic fun Random(seed: Long): Random
= XorWowRandom(seed.toInt(), seed.shr(32).toInt())\n\n/**\n * Gets the next random `Int` from the random
number generator in the specified [range].\n * \n * Generates an `Int` random value uniformly distributed in the
specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n * \n * @throws
IllegalArgumentException if [range] is empty.\n * \n * @SinceKotlin("1.3")\n\npublic fun Random.nextInt(range:
IntRange): Int = when {\n    range.isEmpty() -> throw IllegalArgumentException("Cannot get random in empty
range: $range")\n    range.last < Int.MAX_VALUE -> nextInt(range.first, range.last + 1)\n    range.first >
Int.MIN_VALUE -> nextInt(range.first - 1, range.last) + 1\n    else -> nextInt()\n} \n\n/**\n * Gets the next random
`Long` from the random number generator in the specified [range].\n * \n * Generates a `Long` random value
uniformly distributed in the specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n
* \n * @throws
IllegalArgumentException if [range] is empty.\n * \n * @SinceKotlin("1.3")\n\npublic fun Random.nextLong(range:
LongRange): Long = when {\n    range.isEmpty() -> throw IllegalArgumentException("Cannot get random in
empty range: $range")\n    range.last < Long.MAX_VALUE -> nextLong(range.first, range.last + 1)\n    range.first
> Long.MIN_VALUE -> nextLong(range.first - 1, range.last) + 1\n    else -> nextLong()\n} \n\n\ninternal expect fun
defaultPlatformRandom(): Random\n\ninternal expect fun doubleFromParts(hi26: Int, low27: Int): Double\n\ninternal
fun fastLog2(value: Int): Int = 31 - value.countLeadingZeroBits()\n\n/**\n * Takes upper [bitCount] bits (0..32) from
this number.\n * \n * @internal fun Int.takeUpperBits(bitCount: Int): Int =\n    this.ushr(32 - bitCount) and (-
bitCount).shr(31)\n\ninternal fun checkRangeBounds(from: Int, until: Int) = require(until > from) {\n
    boundsErrorMessage(from, until) }\n\ninternal fun checkRangeBounds(from: Long, until: Long) = require(until >
from) {\n    boundsErrorMessage(from,
until) }\n\ninternal fun checkRangeBounds(from: Double, until: Double) = require(until > from) {\n
    boundsErrorMessage(from, until) }\n\ninternal fun boundsErrorMessage(from: Any, until: Any) = "Random range
is empty: [$from, $until]."\n\n"/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n * \n * @package kotlin.random\n\n\n/**\n * Gets the next random [UInt] from the
random number generator.\n * \n * Generates a [UInt] random value uniformly distributed between [UInt.MIN_VALUE]
and [UInt.MAX_VALUE] (inclusive).\n
* \n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalUnsignedTypes::class)\n\npublic fun
Random.nextUInt(): UInt = nextInt().toUInt()\n\n/**\n * Gets the next random [UInt] from the random number

```

generator less than the specified [until] bound.\n *\n * Generates a [UInt] random value uniformly distributed between

`0` (inclusive) and the specified [until] bound (exclusive).\n *\n * @throws IllegalArgumentException if [until] is zero.\n *\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun

Random.nextUInt(until: UInt): UInt = nextUInt(0u, until)\n\n**\n * Gets the next random [UInt] from the random number generator in the specified range.\n *\n * Generates a [UInt] random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n *\n * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n

*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun

Random.nextUInt(from: UInt, until: UInt): UInt {\n checkUIntRangeBounds(from, until)\n val signedFrom = from.toInt() xor Int.MIN_VALUE\n val signedUntil = until.toInt() xor Int.MIN_VALUE\n val signedResult = nextInt(signedFrom, signedUntil) xor Int.MIN_VALUE\n return signedResult.toUInt()\n}\n\n**\n

* Gets the next random [UInt] from the random number generator in the specified [range].\n *\n * Generates a [UInt] random value uniformly distributed in the specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n *\n * @throws IllegalArgumentException if [range] is empty.\n

*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun

Random.nextUInt(range: UIntRange): UInt = when {\n range.isEmpty() -> throw

IllegalArgumentException("Cannot get random in empty range: \$range")\n range.last < UInt.MAX_VALUE ->

nextUInt(range.first, range.last + 1u)\n range.first > UInt.MIN_VALUE -> nextUInt(range.first - 1u, range.last) +

1u\n else -> nextUInt()\n}\n\n**\n * Gets the next random [ULong] from the random number generator.\n *\n * Generates a [ULong] random value uniformly distributed between [ULong.MIN_VALUE] and [ULong.MAX_VALUE] (inclusive).\n

*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public

fun Random.nextULong(): ULong = nextLong().toULong()\n\n**\n * Gets the next random [ULong] from the random number generator less than the specified [until] bound.\n *\n * Generates a [ULong] random value uniformly distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n *\n * @throws

IllegalArgumentException if [until] is zero.\n

*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun

Random.nextULong(until: ULong): ULong = nextLong(0uL, until)\n\n**\n * Gets the next random [ULong] from the random number generator in the specified range.\n *\n * Generates a [ULong] random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n *\n * @throws

IllegalArgumentException if [from] is greater than or equal to [until].\n

*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun

Random.nextULong(from: ULong, until: ULong): ULong

{\n checkULongRangeBounds(from, until)\n val signedFrom = from.toLong() xor Long.MIN_VALUE\n val signedUntil = until.toLong() xor Long.MIN_VALUE\n val signedResult = nextLong(signedFrom, signedUntil) xor Long.MIN_VALUE\n return signedResult.toULong()\n}\n\n**\n * Gets the next random [ULong] from the random number generator in the specified [range].\n *\n * Generates a [ULong] random value uniformly distributed in the specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n

*\n * @throws IllegalArgumentException if [range] is empty.\n

*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun

Random.nextULong(range: ULongRange): ULong = when {\n range.isEmpty() -> throw

IllegalArgumentException("Cannot get random in empty range: \$range")\n range.last < ULong.MAX_VALUE -

> nextULong(range.first, range.last + 1u)\n range.first > ULong.MIN_VALUE -> nextULong(range.first - 1u, range.last) + 1u\n

else -> nextULong()\n}\n\n**\n * Fills the specified unsigned byte [array] with random bytes and returns it.\n *\n * @return [array] filled with random bytes.\n *\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n public fun

Random.nextUBytes(array: UByteArray): UByteArray {\n nextBytes(array.asByteArray())\n return

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array\n}\n\n/**\n * Creates an unsigned byte array of the specified [size], filled with random bytes.\n
*\n@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Random.nextUBytes(size: Int): UByteArray
= nextBytes(size).asUByteArray()\n\n/**\n * Fills a subrange of the specified `UByte` [array] starting from
[fromIndex] inclusive and ending [toIndex] exclusive with random UBytes.\n *\n * @return [array] with the
subrange filled with random bytes.\n *\n@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Random.nextUBytes(array: UByteArray, fromIndex: Int = 0, toIndex: Int = array.size): UByteArray {\n
nextBytes(array.asByteArray(), fromIndex,
toIndex)\n return array\n}\n\n\ninternal fun checkUIntRangeBounds(from: UInt, until: UInt) = require(until >
from) { boundsErrorMessage(from, until) }\ninternal fun checkULongRangeBounds(from: ULong, until: ULong) =
require(until > from) { boundsErrorMessage(from, until) }\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.random\n\n/**\n * Random number generator,
using Marsaglia's "xorwow" algorithm\n *\n * Cycles after 2^192 - 2^32 repetitions.\n *\n * For more details, see
Marsaglia, George (July 2003). "Xorshift RNGs". Journal of Statistical Software. 8 (14).
doi:10.18637/jss.v008.i14\n *\n * Available at https://www.jstatsoft.org/v08/i14/paper\n *\n *\n\ninternal class
XorWowRandom internal constructor(\n private var x: Int,\n private var y: Int,\n private var z: Int,\n private
var
w: Int,\n private var v: Int,\n private var addend: Int\n) : Random(), Serializable {\n\n internal
constructor(seed1: Int, seed2: Int) :\n this(seed1, seed2, 0, 0, seed1.inv(), (seed1 shl 10) xor (seed2 ushr
4))\n\n init {\n require((x or y or z or w or v) != 0) { "Initial state must have at least one non-zero element.\n"
}\n\n // some trivial seeds can produce several values with zeroes in upper bits, so we discard first 64\n
repeat(64) { nextInt() }\n }\n\n override fun nextInt(): Int {\n // Equivalent to the xorwow algorithm\n //
From Marsaglia, G. 2003. Xorshift RNGs. J. Statis. Soft. 8, 14, p. 5\n var t = x\n t = t xor (t ushr 2)\n x
= y\n y = z\n z = w\n val v0 = v\n w = v0\n t = (t xor (t shl 1)) xor v0 xor (v0 shl 4)\n v =
t\n addend += 362437\n return t + addend\n }\n\n override fun nextBits(bitCount: Int): Int =\n
nextInt().takeUpperBits(bitCount)\n\n private companion object {\n private const val serialVersionUID: Long = 0L\n }\n\n"/*\n * Copyright
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by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@\n@file:kotlin.jvm.JvmMultifileClass\n@\n@file:kotlin.jvm.JvmName("RangesKt")\n\npackage
kotlin.ranges\n\n/**\n * Represents a range of [Comparable] values.\n *\n\nprivate open class ComparableRange<T> :
Comparable<T>>(\n override val start: T,\n override val endInclusive: T\n) : ClosedRange<T> {\n\n override
fun equals(other: Any?): Boolean {\n return other is ComparableRange<*> && (isEmpty() && other.isEmpty())
||\n start == other.start && endInclusive == other.endInclusive\n }\n\n override fun hashCode(): Int
{\n return if (isEmpty()) -1 else 31 * start.hashCode() + endInclusive.hashCode()\n }\n\n override
fun toString(): String = "$start..$endInclusive"\n}\n\n"/*\n * Creates a range from this [Comparable] value to the
specified [that] value.\n *\n * This value needs to be smaller than or equal to [that] value, otherwise the returned
range will be empty.\n *\n * @sample samples.ranges.Ranges.rangeFromComparable\n *\n\npublic operator fun <T> :
Comparable<T>> T.rangeTo(that: T): ClosedRange<T> = ComparableRange(this, that)\n\n\n/**\n * Represents a
range of floating point numbers.\n *\n * Extends [ClosedRange] interface providing custom operation
[lessThanOrEquals] for comparing values of range domain type.\n *\n * This interface is implemented by floating
point ranges returned by [Float.rangeTo] and [Double.rangeTo] operators to\n * achieve IEEE-754 comparison order
instead of total order of floating point numbers.\n *\n\n@\n@SinceKotlin("1.1")\n\npublic interface
ClosedFloatingPointRange<T : Comparable<T>> : ClosedRange<T> {\n override fun contains(value: T): Boolean
= lessThanOrEquals(start,
value) && lessThanOrEquals(value, endInclusive)\n override fun isEmpty(): Boolean = !lessThanOrEquals(start,
endInclusive)\n}\n\n"/*\n * Compares two values of range domain type and returns true if first is less than or
equal to second.\n *\n\n fun lessThanOrEquals(a: T, b: T): Boolean\n}\n\n\n/**\n * A closed range of values of

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type `Double`.n *n * Numbers are compared with the ends of this range according to IEEE-754.n */nprivate class
ClosedDoubleRange(n start: Double,n endInclusive: Double)n : ClosedFloatingPointRange<Double> {n
private val _start = start\n private val _endInclusive = endInclusive\n override val start: Double get() = _start\n
override val endInclusive: Double get() = _endInclusive\n\n override fun lessThanOrEquals(a: Double, b:
Double): Boolean = a <= b\n\n override fun contains(value: Double): Boolean = value >= _start && value <=
_endInclusive\n override fun isEmpty(): Boolean = !(_start <= _endInclusive)\n\n
override fun equals(other: Any?): Boolean {n return other is ClosedDoubleRange && (isEmpty() &&
other.isEmpty()) ||n _start == other._start && _endInclusive == other._endInclusive)n }n\n override
fun hashCode(): Int {n return if (isEmpty()) -1 else 31 * _start.hashCode() + _endInclusive.hashCode()\n
}n\n override fun toString(): String = "$_start..$_endInclusive"\n}n\n/**n * Creates a range from this [Double]
value to the specified [that] value.n */n * Numbers are compared with the ends of this range according to IEEE-
754.n * @sample samples.ranges.Ranges.rangeFromDouble\n */n@SinceKotlin("1.1")npublic operator fun
Double.rangeTo(that: Double): ClosedFloatingPointRange<Double> = ClosedDoubleRange(this, that)\n\n/**n *
A closed range of values of type `Float`.n */n * Numbers are compared with the ends of this range according to
IEEE-754.n */nprivate class ClosedFloatRange(n start: Float,n endInclusive: Float)n :
ClosedFloatingPointRange<Float>
{n private val _start = start\n private val _endInclusive = endInclusive\n override val start: Float get() =
_start\n override val endInclusive: Float get() = _endInclusive\n\n override fun lessThanOrEquals(a: Float, b:
Float): Boolean = a <= b\n\n override fun contains(value: Float): Boolean = value >= _start && value <=
_endInclusive\n override fun isEmpty(): Boolean = !(_start <= _endInclusive)\n\n override fun equals(other:
Any?): Boolean {n return other is ClosedFloatRange && (isEmpty() && other.isEmpty()) ||n _start
== other._start && _endInclusive == other._endInclusive)n }n\n override fun hashCode(): Int {n return if
(isEmpty()) -1 else 31 * _start.hashCode() + _endInclusive.hashCode()\n }n\n override fun toString(): String =
"$_start..$_endInclusive"\n}n\n/**n * Creates a range from this [Float] value to the specified [that] value.n */n *
Numbers are compared with the ends
of this range according to IEEE-754.n * @sample samples.ranges.Ranges.rangeFromFloat\n
*/n@SinceKotlin("1.1")npublic operator fun Float.rangeTo(that: Float): ClosedFloatingPointRange<Float> =
ClosedFloatRange(this, that)\n\n/**n * Returns `true` if this iterable range contains the specified [element].n */n
* Always returns `false` if the [element] is `null`.n */n@SinceKotlin("1.3")n@kotlin.internal.InlineOnlynpublic
inline operator fun <T, R> R.contains(element: T?): Boolean where T : Any, R : Iterable<T>, R : ClosedRange<T>
= \n element != null && contains(element)\n\ninternal fun checkStepIsPositive(isPositive: Boolean, step:
Number) {n if (!isPositive) throw IllegalArgumentException("Step must be positive, was: $step.")\n}n\n",/*n *
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governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.n
*/n\n@file:kotlin.jvm.JvmName("KClasses")n@file:Suppress("UNCHECKED_CAST")n\npackage
kotlin.reflect\nimport kotlin.internal.LowPriorityInOverloadResolution\n\n/**n * Casts the given [value] to the
class represented by this [KClass] object.n * Throws an exception if the value is `null` or if it is not an instance of
this class.n */n * This is an experimental function that behaves as a similar function from kotlin.reflect.full on
JVM.n */n * @see [KClass.isInstance]n * @see [KClass.safeCast]\n
*/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)n@LowPriorityInOverloadResoluti
on\nfun <T : Any> KClass<T>.cast(value: Any?): T {n if (!isInstance(value)) throw ClassCastException("Value
cannot be cast to $qualifiedOrSimpleName")\n return value as T\n}n\n// TODO: replace with qualifiedName
when it is fully supported in K/JS\ninternal expect val KClass<*>.qualifiedOrSimpleName: String?\n\n/**n * Casts
the given [value] to the class represented by this [KClass] object.n * Returns
`null` if the value is `null` or if it is not an instance of this class.n */n * This is an experimental function that
behaves as a similar function from kotlin.reflect.full on JVM.n */n * @see [KClass.isInstance]n * @see
[KClass.cast]\n
*/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)n@LowPriorityInOverloadResoluti

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on fun <T : Any> KClass<T>.safeCast(value: Any?): T? {
    return if (isInstance(value)) value as T else
    null
}
"/*
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 */
package kotlin.reflect
import kotlin.jvm.JvmField
import kotlin.jvm.JvmStatic

/**
 * Represents a type projection. Type projection is usually the argument to another type in a type usage.
 * For example, in the type `Array<out Number>`, `out Number` is the covariant projection of the type represented
 * by the class `Number`.
 * Type projection is either the star projection, or an entity consisting of a specific type
 * plus optional variance.
 * See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/generics.html#type-projections)
 * for more information.
 */
@SinceKotlin("1.1")
public data class KTypeProjection constructor(
    /**
     * The use-site variance specified in the projection, or `null` if this is a star projection.
     */
    public val variance: KVariance?,
    /**
     * The type specified in the projection, or `null` if this is a star projection.
     */
    public val type: KType?
) {
    init {
        require((variance == null) == (type == null)) {
            if (variance == null)
                "Star projection must have no type specified."
            else
                "The projection variance $variance requires type to be specified."
        }
    }
    override fun toString(): String = when (variance) {
        null -> "*"
        KVariance.INVARIANT -> type.toString()
        KVariance.IN -> "in $type"
        KVariance.OUT -> "out $type"
    }
    public companion object {
        // provided for compiler access
        @JvmField
        @PublishedApi
        internal val star: KTypeProjection = KTypeProjection(null, null)
    }
    /**
     * Star projection, denoted by the `*` character.
     * For example, in the type `KClass<*>`, `*` is the star projection.
     * See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/generics.html#star-projections)
     * for more information.
     */
    public val STAR: KTypeProjection get() = star
    /**
     * Creates an invariant projection of a given type. Invariant projection is just the type itself,
     * without any use-site variance modifiers applied to it.
     * For example, in the type `Set<String>`, `String` is an invariant projection
     * of the type represented by the class `String`.
     */
    @JvmStatic
    public fun invariant(type: KType): KTypeProjection =
        KTypeProjection(KVariance.INVARIANT, type)
    /**
     * Creates a contravariant projection of a given type, denoted by the `in` modifier applied to a type.
     * For example, in the type `MutableList<in Number>`, `in Number` is a contravariant projection of the type of class `Number`.
     */
    @JvmStatic
    public fun contravariant(type: KType): KTypeProjection =
        KTypeProjection(KVariance.IN, type)
    /**
     * Creates a covariant projection of a given type, denoted by the `out` modifier applied to a type.
     * For example, in the type `Array<out Number>`, `out Number` is a covariant projection of the type of class `Number`.
     */
    @JvmStatic
    public fun covariant(type: KType): KTypeProjection =
        KTypeProjection(KVariance.OUT, type)
}
"/*
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.reflect
/**
 * Represents variance applied to a type parameter on the declaration site
 (*declaration-site variance*),
 * or to a type in a projection (*use-site variance*).
 * See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/generics.html#variance)
 * for more information.
 */
@see [KTypeParameter.variance]
@see [KTypeProjection]
@SinceKotlin("1.1")
enum class KVariance {
    /**
     * The affected type parameter or type is *invariant*, which means it has no variance applied to it.
     */
    INVARIANT,
    /**
     * The affected type parameter or type is *contravariant*. Denoted by the `in`
     * modifier in the source code.
     */
    IN,
    /**
     * The affected
     * type parameter or type is *covariant*. Denoted by the `out` modifier in the source code.
     */
    OUT,
}
"/*
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 */
package kotlin.reflect
/**
 * Returns a runtime representation of the given reified type [T] as an instance of [KType].
 * Note that on JVM, the created type has no annotations ([KType.annotations] returns an empty list)
 * even if the type in the source code is annotated. Support for type annotations might be added in a future version.
 */

```



```

*^@SinceKotlin("1.6")^@WasExperimental(ExperimentalStdlibApi::class)^public inline fun <reified T>
typeOf(): KType =^ throw UnsupportedOperationException("This function is implemented as an intrinsic on all
supported platforms.")^"/^ * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language
contributors.^ * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.^

*^@file:kotlin.jvm.JvmMultifileClass^@file:kotlin.jvm.JvmName("StringsKt")^package
kotlin.text/^/*^ * An object to which char sequences and values can be appended.^ *^expect interface
Appendable {^ /*^ * Appends the specified character [value] to this Appendable and returns this instance.^
*^ * @param value the character to append.^ *^ fun append(value: Char): Appendable^^ /*^ *
Appends the specified character sequence [value] to this Appendable and returns this instance.^ *^ * @param
value the character sequence to append. If [value] is `null`, then the four characters `null` are appended to this
Appendable.^ *^ fun append(value: CharSequence?): Appendable^^ /*^ * Appends a subsequence of
the specified character sequence [value] to this Appendable and returns
this instance.^ *^ * @param value the character sequence from which a subsequence is appended. If [value]
is `null`, ^ * then characters are appended as if [value] contained the four characters `null`.^ * @param
startIndex the beginning (inclusive) of the subsequence to append.^ * @param endIndex the end (exclusive) of
the subsequence to append.^ *^ * @throws IndexOutOfBoundsException or [IllegalArgumentException]
when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex >
endIndex`.^ *^ fun append(value: CharSequence?, startIndex: Int, endIndex: Int): Appendable^^/^/*^ *
Appends a subsequence of the specified character sequence [value] to this Appendable and returns this instance.^
*^ * @param value the character sequence from which a subsequence is appended.^ * @param startIndex the
beginning (inclusive) of the subsequence to append.^ * @param endIndex the end (exclusive) of
the subsequence to append.^ *^ * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
[startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex >
endIndex`.^ *^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^public fun <T :
Appendable> T.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): T {^
@Suppress("UNCHECKED_CAST")^ return append(value, startIndex, endIndex) as T^^/^/*^ * Appends
all arguments to the given [Appendable].^ *^public fun <T : Appendable> T.append(vararg value:
CharSequence?): T {^ for (item in value)^ append(item)^ return this^^/^/*^ Appends a line feed
character (`\n`) to this Appendable.^ *^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun
Appendable.appendLine(): Appendable = append("\n")^^/*^ Appends value to the given Appendable and a line
feed character (`\n`) after it.^ *^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public
inline fun Appendable.appendLine(value: CharSequence?): Appendable = append(value).appendLine()^^/*^
Appends value to the given Appendable and a line feed character (`\n`) after it.^
*^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun Appendable.appendLine(value: Char):
Appendable = append(value).appendLine()^^internal fun <T> Appendable.appendElement(element: T,
transform: ((T) -> CharSequence?) {^ when {^ transform != null -> append(transform(element))^
element is CharSequence? -> append(element)^ element is Char -> append(element)^ else ->
append(element.toString())^ }^^"/^ * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.^ * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.^

*^@file:kotlin.jvm.JvmMultifileClass^@file:kotlin.jvm.JvmName("StringsKt")^package
kotlin.text/^/*^
* Trims leading whitespace characters followed by [marginPrefix] from every line of a source string and removes^
* the first and the last lines if they are blank (notice difference blank vs empty).^ *^ * Doesn't affect a line if it
doesn't contain [marginPrefix] except the first and the last blank lines.^ *^ * Doesn't preserve the original line
endings.^ *^ * @param marginPrefix non-blank string, which is used as a margin delimiter. Default is `|` (pipe
character).^ *^ * @sample samples.text.Strings.trimMargin^ * @see trimIndent^ * @see

```

```

kotlin.text.isWhitespace\n *^\npublic fun String.trimMargin(marginPrefix: String = "\\"): String =\n
replaceIndentByMargin("\\", marginPrefix)\n\n/**\n * Detects indent by [marginPrefix] as it does [trimMargin] and\n
replace it with [newIndent].\n\n * @param marginPrefix non-blank string, which is used as a margin delimiter.\n
Default is `|` (pipe character).\n\n *^\npublic fun String.replaceIndentByMargin(newIndent: String =\n
"\", marginPrefix: String = "\\"): String {\n    require(marginPrefix.isNotBlank()) { \"marginPrefix must be non-\n
blank string.\" }\n    val lines = lines()\n\n    return lines.reindent(length + newIndent.length * lines.size,\n
getIndentFunction(newIndent), { line ->\n        val firstNonWhitespaceIndex = line.indexOfFirst { !it.isWhitespace()\n
}\n\n        when {\n            firstNonWhitespaceIndex == -1 -> null\n                line.startsWith(marginPrefix,\n
firstNonWhitespaceIndex) -> line.substring(firstNonWhitespaceIndex + marginPrefix.length)\n                else -> null\n        }\n    })\n}\n\n/**\n * Detects a common minimal indent of all the input lines, removes it from every line and\n
also removes the first and the last\n\n * lines if they are blank (notice difference blank vs empty).\n\n * Note that\n
blank lines do not affect the detected indent level.\n\n * In case if there are non-blank lines with no leading\n
whitespace characters (no indent at all) then the\n\n * common indent is 0,\n
and therefore this function doesn't change the indentation.\n\n * Doesn't preserve the original line endings.\n\n *^\n\n * @sample samples.text.Strings.trimIndent\n\n * @see trimMargin\n\n * @see kotlin.text.isBlank\n\n *^\npublic fun\n
String.trimIndent(): String = replaceIndent("\\")\n\n/**\n * Detects a common minimal indent like it does\n
[trimIndent] and replaces it with the specified [newIndent].\n\n *^\npublic fun String.replaceIndent(newIndent: String\n
= "\\"): String {\n    val lines = lines()\n\n    val minCommonIndent = lines\n        .filter(String::isNotBlank)\n
.map(String::indentWidth)\n        .minOrNull() ?: 0\n\n    return lines.reindent(length + newIndent.length *\n
lines.size, getIndentFunction(newIndent), { line -> line.drop(minCommonIndent) })\n}\n\n/**\n * Prepends [indent]\n
to every line of the original string.\n\n * Doesn't preserve the original line endings.\n\n *^\npublic fun\n
String.prependIndent(indent: String = \" \"): String =\n    lineSequence()\n        .map {\n            when {\n                it.isBlank() -> {\n                    when {\n                        it.length < indent.length ->\n
indent\n                        else -> it\n                    }\n                }\n                else -> indent + it\n            }\n        }\n        .joinToString("\\n")\n\nprivate fun String.indentWidth(): Int = indexOfFirst { !it.isWhitespace() }.let { if (it == -1)\n
length else it }\n\nprivate fun getIndentFunction(indent: String) = when {\n    indent.isEmpty() -> { line: String ->\n
line }\n    else -> { line: String -> indent + line }\n}\n\nprivate inline fun List<String>.reindent(\n
resultSizeEstimate: Int,\n    indentAddFunction: (String) -> String,\n    indentCutFunction: (String) -> String?\n): String {\n    val lastIndex = lastIndex\n    return mapIndexedNotNull { index, value ->\n        if ((index == 0 || index\n
== lastIndex) && value.isBlank())\n            null\n        else\n            indentCutFunction(value)?.let(indentAddFunction)\n        ?: value\n    }\n    .joinTo(StringBuilder(resultSizeEstimate), "\\n")\n    .toString()\n}\n\n/**\n * Copyright\n
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n\n * Use of this source code is governed\n
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n */\n\npackage kotlin.text\n\n/**\n * Defines names for Unicode symbols used in proper Typography.\n\n */\n\npublic object Typography {\n    /** The\n
character &#x22; \u2013 quotation mark *\n    public const val quote: Char = \"\u0022\"n    /** The character\n
&#x24; \u2013 dollar sign *\n    public const val dollar: Char = \"\u0024\"n    /** The character &#x26; \u2013\n
ampersand *\n    public const val amp: Char = \"\u0026\"n    /** The character &#x3C; \u2013 less-than sign *\n
public const val less: Char = \"\u003C\"n    /** The character &#x3E; \u2013 greater-than sign *\n    public const val\n
greater: Char = \"\u003E\"n    /** The non-breaking space character *\n\n    public const val nbsp: Char = \"\u00A0\"n    /** The character &#xD7; *\n    public const val times: Char =\n
\"&#xD7\"n    /** The character &#xA2; *\n    public const val cent: Char = \"\u00A2\"n    /** The character &#xA3;\n
*\n    public const val pound: Char = \"\u00A3\"n    /** The character &#xA7; *\n    public const val section: Char =\n
\"&#xA7\"n    /** The character &#xA9; *\n    public const val copyright: Char = \"\u00A9\"n    /** The character\n
&#xAB; *\n    @SinceKotlin(\"1.6\")n    public const val leftGuillemet: Char = \"\u00AB\"n    /** The character\n
&#xBB; *\n    @SinceKotlin(\"1.6\")n    public const val rightGuillemet: Char = \"\u00BB\"n    /** The character\n
&#xAE; *\n    public const val registered: Char = \"\u00AE\"n    /** The character &#xB0; *\n    public const val\n
degree: Char = \"\u00B0\"n    /** The character &#xB1; *\n    public const val plusMinus: Char = \"\u00B1\"n    /**

```

```

The character &#xB6; *^n public const val paragraph: Char = "\u00B6^n
/** The character &#xB7; *^n public const val middleDot: Char = "\u00B7^n /** The character &#xBD; *^n
public const val half: Char = "\u00BD^n /** The character &#x2013; *^n public const val ndash: Char =
"\u2013^n /** The character &#x2014; *^n public const val mdash: Char = "\u2014^n /** The character
&#x2018; *^n public const val leftSingleQuote: Char = "\u2018^n /** The character &#x2019; *^n public
const val rightSingleQuote: Char = "\u2019^n /** The character &#x201A; *^n public const val
lowSingleQuote: Char = "\u201A^n /** The character &#x201C; *^n public const val leftDoubleQuote: Char =
"\u201C^n /** The character &#x201D; *^n public const val rightDoubleQuote: Char = "\u201D^n /** The
character &#x201E; *^n public const val lowDoubleQuote: Char = "\u201E^n /** The character &#x2020; *^n
public const val dagger: Char = "\u2020^n /** The character &#x2021; *^n public
const val doubleDagger: Char = "\u2021^n /** The character &#x2022; *^n public const val bullet: Char =
"\u2022^n /** The character &#x2026; *^n public const val ellipsis: Char = "\u2026^n /** The character
&#x2032; *^n public const val prime: Char = "\u2032^n /** The character &#x2033; *^n public const val
doublePrime: Char = "\u2033^n /** The character &#x20AC; *^n public const val euro: Char = "\u20AC^n
/** The character &#x2122; *^n public const val tm: Char = "\u2122^n /** The character &#x2248; *^n
public const val almostEqual: Char = "\u2248^n /** The character &#x2260; *^n public const val notEqual:
Char = "\u2260^n /** The character &#x2264; *^n public const val lessOrEqual: Char = "\u2264^n /** The
character &#x2265; *^n public const val greaterOrEqual: Char = "\u2265^n^n /** The character &#xAB; *^n
@Deprecated("This constant has a typo in the name. Use leftGuillemet instead."),
ReplaceWith("Typography.leftGuillemet"))^n @DeprecatedSinceKotlin("1.6")^n public const val
leftGuillemete: Char = "\u00AB^n^n /** The character &#xBB; *^n @Deprecated("This constant has a typo in
the name. Use rightGuillemet instead."), ReplaceWith("Typography.rightGuillemet"))^n
@DeprecatedSinceKotlin("1.6")^n public const val rightGuillemete: Char = "\u00BB^n^n", /* Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.^n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.^n */^n package kotlin.text^nn /**^n *
Represents a collection of captured groups in a single match of a regular expression.^n *^n * This collection has size
of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.^n * Groups are indexed
from 1 to `groupCount` and group with the index 0 corresponds to the entire match.^n *^n * An element of the
collection
at the particular index can be `null`,^n * if the corresponding group in the regular expression is optional and^n *
there was no match captured by that group.^n */^n public interface MatchGroupCollection :
Collection<MatchGroup?> {^nn /** Returns a group with the specified [index].^n *^n * @return An instance
of [MatchGroup] if the group with the specified [index] was matched or `null` otherwise.^n *^n * Groups are
indexed from 1 to the count of groups in the regular expression. A group with the index 0^n * corresponds to the
entire match.^n *^n *^n public operator fun get(index: Int): MatchGroup?^nn /**^n * Extends
[MatchGroupCollection] by introducing a way to get matched groups by name, when regex supports it.^n
*/^n @SinceKotlin("1.1")^n public interface MatchNamedGroupCollection : MatchGroupCollection {^nn /**^n *
Returns a named group with the specified [name].^n *^n * @return An instance of [MatchGroup] if the group with the
specified [name] was
matched or `null` otherwise.^n *^n * @throws IllegalArgumentException if there is no group with the specified
[name] defined in the regex pattern.^n *^n * @throws UnsupportedOperationException if this match group collection
doesn't support getting match groups by name,^n * for example, when it's not supported by the current platform.^n
*/^n public operator fun get(name: String): MatchGroup?^nn /**^n * Represents the results from a single
regular expression match.^n */^n public interface MatchResult {^nn /** The range of indices in the original string
where match was captured.^n */^n public val range: IntRange^nn /** The substring from the input string captured by
this match.^n */^n public val value: String^nn /**^n * A collection of groups matched by the regular expression.^n
*^n * This collection has size of `groupCount + 1` where `groupCount` is the count of groups in the regular
expression.^n * Groups are indexed from 1 to `groupCount` and group

```



```

DurationUnit, targetUnit: DurationUnit): Long\n\n// overflown result is coerced in the Long range
boundaries\n@SinceKotlin("1.5")\ninternal expect fun convertDurationUnit(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit):
Long\n\n\n@SinceKotlin("1.3")\n@Suppress("REDUNDANT_ELSE_IN_WHEN")\ninternal fun
DurationUnit.shortName(): String = when (this) {\n    DurationUnit.NANOSECONDS -> "ns"\n
DurationUnit.MICROSECONDS -> "us"\n    DurationUnit.MILLISECONDS -> "ms"\n
DurationUnit.SECONDS -> "s"\n    DurationUnit.MINUTES -> "m"\n    DurationUnit.HOURS -> "h"\n
DurationUnit.DAYS -> "d"\n    else -> error("Unknown unit: $this")\n}\n\n@SinceKotlin("1.5")\ninternal fun
durationUnitByShortName(shortName: String): DurationUnit = when (shortName) {\n    "ns"
-> DurationUnit.NANOSECONDS\n    "us" -> DurationUnit.MICROSECONDS\n    "ms" ->
DurationUnit.MILLISECONDS\n    "s" -> DurationUnit.SECONDS\n    "m" -> DurationUnit.MINUTES\n
"h" -> DurationUnit.HOURS\n    "d" -> DurationUnit.DAYS\n    else -> throw
IllegalArgumentExcepion("Unknown duration unit short name:
$shortName")\n}\n\n@SinceKotlin("1.5")\ninternal fun durationUnitByIsoChar(isoChar: Char,
isTimeComponent: Boolean): DurationUnit =\n    when {\n        !isTimeComponent -> {\n            when (isoChar)
{\n                'D' -> DurationUnit.DAYS\n                else -> throw IllegalArgumentExcepion("Invalid or
unsupported duration ISO non-time unit: $isoChar")\n            }\n        }\n        else -> {\n            when (isoChar) {\n
                'H' -> DurationUnit.HOURS\n                'M' -> DurationUnit.MINUTES\n                'S' ->
DurationUnit.SECONDS\n                else -> throw IllegalArgumentExcepion("Invalid duration ISO time unit:
$isoChar")\n            }\n        }\n    },"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport kotlin.annotation.AnnotationTarget.*\n\n/**\n * This annotation marks the experimental preview of the standard library API for measuring time and working with
durations.\n */\n * > Note that this API is in a preview state and has a very high chance of being changed in the
future.\n * Do not use it if you develop a library since your library will become binary incompatible\n * with the
future versions of the standard library.\n */\n * Any usage of a declaration annotated with `@ExperimentalTime`
must be accepted either by\n * annotating that usage with the [OptIn] annotation, e.g.
`@OptIn(ExperimentalTime::class)`,\n * or by using the compiler argument `-opt-
in=kotlin.time.ExperimentalTime`.\n */\n@RequiresOptIn(level
=
RequiresOptIn.Level.ERROR)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Target(\n
CLASS,\n ANNOTATION_CLASS,\n PROPERTY,\n FIELD,\n LOCAL_VARIABLE,\n
VALUE_PARAMETER,\n CONSTRUCTOR,\n FUNCTION,\n PROPERTY_GETTER,\n
PROPERTY_SETTER,\n TYPEALIAS)\n@SinceKotlin("1.3")\npublic annotation class
ExperimentalTime\n"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport kotlin.jvm.JvmInline\n\n/**\n * A source of time
for measuring time intervals.\n */\n * The only operation provided by the time source is [markNow]. It returns a
[TimeMark], which can be used to query the elapsed time later.\n */\n * @see [measureTime]\n * @see
[measureTimedValue]\n */\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic interface TimeSource {\n    /**\n
 * Marks a point in time on this time source.\n */\n * The returned [TimeMark] instance encapsulates the captured
time point and allows querying\n * the duration of time interval [elapsed][TimeMark.elapsedNow] from that
point.\n */\n * public fun markNow(): TimeMark\n\n    /**\n * The most precise time source available in the
platform.\n */\n * This time source returns its readings from a source of monotonic time when it is available in a
target platform,\n * and resorts to a non-monotonic time source otherwise.\n */\n * The function [markNow]
of this time source returns the specialized [ValueTimeMark] that is an inline value class\n * wrapping a platform-

```

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dependent time reading value.\n  *^n  public object Monotonic : TimeSource {^n    override fun markNow():
ValueTimeMark = MonotonicTimeSource.markNow()\n    override fun toString(): String =
MonotonicTimeSource.toString()\n\n    /**^n    * A specialized [kotlin.time.TimeMark]
returned by [TimeSource.Monotonic].\n    *^n    * This time mark is implemented as an inline value class
wrapping a platform-dependent\n    * time reading value of the default monotonic time source, thus allowing to
avoid additional boxing\n    * of that value.\n    *^n    * The operations [plus] and [minus] are also
specialized to return [ValueTimeMark] type.\n    *^n    @ExperimentalTime\n    @SinceKotlin("1.7")\n    @JvmInline\n    public value class ValueTimeMark internal constructor(internal val reading:
ValueTimeMarkReading) : TimeMark {^n    override fun elapsedNow(): Duration =
MonotonicTimeSource.elapsedFrom(this)\n    override fun plus(duration: Duration): ValueTimeMark =
MonotonicTimeSource.adjustReading(this, duration)\n    override fun minus(duration: Duration):
ValueTimeMark = MonotonicTimeSource.adjustReading(this, -duration)\n    override fun hasPassedNow():
Boolean = !elapsedNow().isNegative()\n
        override fun hasNotPassedNow(): Boolean = elapsedNow().isNegative()\n    }^n }^n\n    public
companion object {^n    }^n}\n\n/** A platform-specific reading type that is wrapped by
[TimeSource.Monotonic.ValueTimeMark] inline class. */^n\ninternal expect class ValueTimeMarkReading\n\n\n/**^n
* Represents a time point notched on a particular [TimeSource]. Remains bound to the time source it was taken
from\n* and allows querying for the duration of time elapsed from that point (see the function [elapsedNow]).\n
*^n\n* @SinceKotlin("1.3")\n* @ExperimentalTime\n* public interface TimeMark {^n    /**^n    * Returns the amount of
time passed from this mark measured with the time source from which this mark was taken.\n    *^n    * Note that
the value returned by this function can change on subsequent invocations.\n    *^n    * @throws
IllegalArgumentOutOfRangeException an implementation may throw if calculating the elapsed time involves\n    * adding a
positive infinite
duration to an infinitely distant past time mark or\n    * a negative infinite duration to an infinitely distant future
time mark.\n    *^n    public abstract fun elapsedNow(): Duration\n\n    /**^n    * Returns a time mark on the same
time source that is ahead of this time mark by the specified [duration].\n    *^n    * The returned time mark is more
_late_ when the [duration] is positive, and more _early_ when the [duration] is negative.\n    *^n    * If the time
mark is adjusted too far in the past or in the future, it may saturate to an infinitely distant time mark.\n    * In that
case, [elapsedNow] will return an infinite duration elapsed from such infinitely distant mark.\n    *^n    * @throws
IllegalArgumentOutOfRangeException an implementation may throw if a positive infinite duration is added to an infinitely
distant past time mark or\n    * a negative infinite duration is added to an infinitely distant future time mark.\n
*^n    public open operator fun plus(duration:
Duration): TimeMark = AdjustedTimeMark(this, duration)\n\n    /**^n    * Returns a time mark on the same time
source that is behind this time mark by the specified [duration].\n    *^n    * The returned time mark is more _early_
when the [duration] is positive, and more _late_ when the [duration] is negative.\n    *^n    * If the time mark is
adjusted too far in the past or in the future, it may saturate to an infinitely distant time mark.\n    * In that case,
[elapsedNow] will return an infinite duration elapsed from such infinitely distant mark.\n    *^n    * @throws
IllegalArgumentOutOfRangeException an implementation may throw if a positive infinite duration is subtracted from an
infinitely distant future time mark or\n    * a negative infinite duration is subtracted from an infinitely distant past
time mark.\n    *^n    public open operator fun minus(duration: Duration): TimeMark = plus(-duration)\n\n\n    /**^n
* Returns true if this time mark has passed according to the
time source from which this mark was taken.\n    *^n    * Note that the value returned by this function can change
on subsequent invocations.\n    * If the time source is monotonic, it can change only from `false` to `true`, namely,
when the time mark becomes behind the current point of the time source.\n    *^n    public fun hasPassedNow():
Boolean = !elapsedNow().isNegative()\n\n    /**^n    * Returns false if this time mark has not passed according to
the time source from which this mark was taken.\n    *^n    * Note that the value returned by this function can
change on subsequent invocations.\n    * If the time source is monotonic, it can change only from `true` to `false`,
namely, when the time mark becomes behind the current point of the time source.\n    *^n    public fun

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```

hasNotPassedNow(): Boolean =
elapsedNow().isNegative()}\n\n\n@ExperimentalTime\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@
Deprecated(\n  \ "Subtracting one TimeMark from another is not
a well defined operation because these time marks could have been obtained from the different time sources.\",\n
level = DeprecationLevel.ERROR\n)\n\n@Suppress("UNUSED_PARAMETER")\npublic inline operator fun
TimeMark.minus(other: TimeMark): Duration = throw Error("Operation is
disallowed.")\n\n\n@ExperimentalTime\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Deprecated(\n
\ "Comparing one TimeMark to another is not a well defined operation because these time marks could have been
obtained from the different time sources.\",\n  level =
DeprecationLevel.ERROR\n)\n\n@Suppress("UNUSED_PARAMETER")\npublic inline operator fun
TimeMark.compareTo(other: TimeMark): Int = throw Error("Operation is
disallowed.")\n\n\n@ExperimentalTime\nprivate class AdjustedTimeMark(val mark: TimeMark, val adjustment:
Duration) : TimeMark {\n  override fun elapsedNow(): Duration = mark.elapsedNow() - adjustment\n\n  override
fun plus(duration: Duration): TimeMark = AdjustedTimeMark(mark, adjustment
+ duration)\n}\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\npackage kotlin.time\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal expect object
MonotonicTimeSource : TimeSource {\n  override fun markNow(): TimeSource.Monotonic.ValueTimeMark\nfun
elapsedFrom(timeMark: TimeSource.Monotonic.ValueTimeMark): Duration\n  fun adjustReading(timeMark:
TimeSource.Monotonic.ValueTimeMark, duration: Duration): TimeSource.Monotonic.ValueTimeMark\n}\n\n\n/**\n
* An abstract class used to implement time sources that return their readings as [Long] values in the specified
[unit].\n * \n * @property unit The unit in which this time source's readings are expressed.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic abstract class AbstractLongTimeSource(protected val
unit: DurationUnit) : TimeSource {\n  /**\n
* This protected method should be overridden to return the current reading of the time source expressed as a
[Long] number\n * in the unit specified by the [unit] property.\n * \n protected abstract fun read(): Long\n\n
private class LongTimeMark(private val startedAt: Long, private val timeSource: AbstractLongTimeSource, private
val offset: Duration) : TimeMark {\n  override fun elapsedNow(): Duration = (timeSource.read() -
startedAt).toDuration(timeSource.unit) - offset\n  override fun plus(duration: Duration): TimeMark =
LongTimeMark(startedAt, timeSource, offset + duration)\n  }\n\n  override fun markNow(): TimeMark =
LongTimeMark(read(), this, Duration.ZERO)\n}\n\n\n/**\n * An abstract class used to implement time sources that
return their readings as [Double] values in the specified [unit].\n * \n * @property unit The unit in which this
time source's readings are expressed.\n * \n\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic abstract class
AbstractDoubleTimeSource(protected
val unit: DurationUnit) : TimeSource {\n  /**\n
* This protected method should be overridden to return the
current reading of the time source expressed as a [Double] number\n * in the unit specified by the [unit]
property.\n * \n protected abstract fun read(): Double\n\n  private class DoubleTimeMark(private val startedAt:
Double, private val timeSource: AbstractDoubleTimeSource, private val offset: Duration) : TimeMark {\n\n
override fun elapsedNow(): Duration = (timeSource.read() - startedAt).toDuration(timeSource.unit) - offset\n\n
override fun plus(duration: Duration): TimeMark = DoubleTimeMark(startedAt, timeSource, offset + duration)\n\n
}\n\n  override fun markNow(): TimeMark = DoubleTimeMark(read(), this, Duration.ZERO)\n}\n\n\n/**\n * A time
source that has programmatically updatable readings. It is useful as a predictable source of time in tests.\n * \n
* The current reading value can be advanced by the specified duration
amount with the operator [plusAssign]:\n * \n * ```\n * val timeSource = TestTimeSource()\n * timeSource +=
10.seconds\n * ```\n * \n * Implementation note: the current reading value is stored as a [Long] number of
nanoseconds,\n * thus it's capable to represent a time range of approximately \u00b1292 years.\n * Should the
reading value overflow as the result of [plusAssign] operation, an [IllegalStateException] is thrown.\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic class TestTimeSource : AbstractLongTimeSource(unit =

```

```

DurationUnit.NANOSECONDS) {\n  private var reading: Long = 0L\n\n  override fun read(): Long = reading\n\n  /**\n   * Advances the current reading value of this time source by the specified [duration].\n   * [duration] value is rounded down towards zero when converting it to a [Long] number of nanoseconds.\n   * For example, if the duration being added is `0.6.nanoseconds`, the reading doesn't advance because\n   * the duration value is rounded to zero nanoseconds.\n   * @throws IllegalStateException when the reading value overflows as the result of this operation.\n   */\n  public operator fun plusAssign(duration: Duration) {\n    val longDelta = duration.toLong(unit)\n    reading = if (longDelta != Long.MIN_VALUE && longDelta != Long.MAX_VALUE)\n    {\n      // when delta fits in long, add it as long\n      val newReading = reading + longDelta\n      if (reading xor longDelta >= 0 && reading xor newReading < 0) overflow(duration)\n      newReading\n    } else\n    {\n      val delta = duration.toDouble(unit)\n      // when delta is greater than long, add it as double\n      val newReading = reading + delta\n      if (newReading > Long.MAX_VALUE || newReading < Long.MIN_VALUE) overflow(duration)\n      newReading.toLong()\n    }\n  }\n\n  private fun overflow(duration: Duration) {\n    throw IllegalStateException("\nTestTimeSource will overflow if its reading ${reading}ns is advanced by $duration.")\n  }\n\n  /**\n   * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n   * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n   */\n\n  package kotlin.time\n\n  import kotlin.time.Duration.Companion.milliseconds\n  import kotlin.time.Duration.Companion.nanoseconds\n\n  // Long time reading saturation math, shared between JVM and Native\n  internal fun saturatingAdd(longNs: Long, duration: Duration): Long {\n    val durationNs = duration.inWholeNanoseconds\n    if ((longNs - 1) or 1 == Long.MAX_VALUE) {\n      // MIN_VALUE or MAX_VALUE - the reading is infinite\n      return checkInfiniteSumDefined(longNs, duration, durationNs)\n    }\n    if ((durationNs - 1) or 1 == Long.MAX_VALUE) {\n      // duration doesn't fit in Long nanos\n      return saturatingAddInHalves(longNs, duration)\n    }\n    val result = longNs + durationNs\n    if ((longNs xor result) and (durationNs xor result) < 0)\n    {\n      return if (longNs < 0) Long.MIN_VALUE else Long.MAX_VALUE\n    }\n    return result\n  }\n\n  private fun checkInfiniteSumDefined(longNs: Long, duration: Duration, durationNs: Long): Long {\n    if (duration.isInfinite() && (longNs xor durationNs < 0))\n    throw IllegalArgumentException("Summing infinities of different signs")\n    return longNs\n  }\n\n  private fun saturatingAddInHalves(longNs: Long, duration: Duration): Long {\n    val half = duration / 2\n    if ((half.inWholeNanoseconds - 1) or 1 == Long.MAX_VALUE)\n    {\n      // this will definitely saturate\n      return (longNs + duration.toDouble(DurationUnit.NANOSECONDS)).toLong()\n    } else\n    {\n      return saturatingAdd(saturatingAdd(longNs, half), half)\n    }\n  }\n\n  internal fun saturatingDiff(valueNs: Long, originNs: Long): Duration {\n    if ((originNs - 1) or 1 == Long.MAX_VALUE) {\n      // MIN_VALUE or MAX_VALUE\n      return -(originNs.toDuration(DurationUnit.DAYS)) // saturate to infinity\n    }\n    val result = valueNs - originNs\n    if ((result xor valueNs) and (result xor originNs).inv() < 0)\n    {\n      val resultMs = valueNs / NANOS_IN_MILLIS - originNs / NANOS_IN_MILLIS\n      val resultNs = valueNs % NANOS_IN_MILLIS - originNs % NANOS_IN_MILLIS\n      return resultMs.milliseconds + resultNs.nanoseconds\n    }\n    return result\n  }\n\n  /**\n   * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n   * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n   */\n\n  package kotlin.time\n\n  import kotlin.contracts.*\n\n  /**\n   * Executes the given function [block] and returns the duration of elapsed time interval.\n   * The elapsed time is measured with [TimeSource.Monotonic].\n   */\n  @SinceKotlin("1.3")\n  @ExperimentalTime\n  public inline fun measureTime(block: () -> Unit): Duration {\n    contract {\n      callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    return TimeSource.Monotonic.measureTime(block)\n  }\n\n  /**\n   * Executes the given function [block] and returns the duration of elapsed time interval.\n   * The elapsed time is measured with the specified `this` [TimeSource] instance.\n   */\n  @SinceKotlin("1.3")\n  @ExperimentalTime\n  public inline fun TimeSource.measureTime(block: () -> Unit): Duration {\n    contract {\n      callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    val mark = markNow()\n    block()\n    return

```



```

mark.elapsedNow()\n}\n\n/**\n * Executes the given function [block] and returns the duration of elapsed time
interval.\n *\n * The elapsed time is measured with the specified `this` [TimeSource.Monotonic] instance.\n
*\n@SinceKotlin("1.7")\n@ExperimentalTime\npublic inline fun TimeSource.Monotonic.measureTime(block: ()
-> Unit): Duration {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n\n    val
mark = markNow()\n    block()\n    return mark.elapsedNow()\n}\n\n/**\n * Data class representing a result of executing an action, along with the duration of elapsed time interval.\n *\n * @property value the result of the action.\n * @property duration the time elapsed to execute the action.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic data class TimedValue<T>(val value: T, val duration:
Duration)\n\n/**\n * Executes the given function [block] and returns an instance of [TimedValue] class, containing
both\n * the result of the function execution and the duration of elapsed time interval.\n *\n * The elapsed time is
measured with [TimeSource.Monotonic].\n *\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun <T>
measureTimedValue(block: () -> T): TimedValue<T> {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    }\n\n    return
TimeSource.Monotonic.measureTimedValue(block)\n}\n\n/**\n * Executes the given [block] and returns an
instance of [TimedValue] class, containing both\n * the result
of function execution and the duration of elapsed time interval.\n *\n * The elapsed time is measured with the
specified `this` [TimeSource] instance.\n *\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun <T>
TimeSource.measureTimedValue(block: () -> T): TimedValue<T> {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    }\n\n    val mark = markNow()\n    val result = block()\n    return
TimedValue(result, mark.elapsedNow())\n}\n\n/**\n * Executes the given [block] and returns an instance of
[TimedValue] class, containing both\n * the result of function execution and the duration of elapsed time interval.\n
*\n * The elapsed time is measured with the specified `this` [TimeSource.Monotonic] instance.\n
*\n@SinceKotlin("1.7")\n@ExperimentalTime\npublic inline fun <T>
TimeSource.Monotonic.measureTimedValue(block: () -> T): TimedValue<T> {\n    contract {\n
callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n\n    val mark = markNow()\n
val result = block()\n    return TimedValue(result, mark.elapsedNow())\n}\n\n"/\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.coroutines.*\nimport kotlin.coroutines.intrinsics.*\nimport
kotlin.native.concurrent.SharedImmutable\n\n/**\n * Defines deep recursive function that keeps its stack on the
heap,\n * which allows very deep recursive computations that do not use the actual call stack.\n * To initiate a call to
this deep recursive function use its [invoke] function.\n * As a rule of thumb, it should be used if recursion goes
deeper than a thousand calls.\n *\n * The [DeepRecursiveFunction] takes one parameter of type [T] and returns a
result of type [R].\n * The [block] of code defines the body of a recursive function. In this block\n *
[callRecursive][DeepRecursiveScope.callRecursive]
function can be used to make a recursive call\n * to the declared function. Other instances of
[DeepRecursiveFunction] can be called\n * in this scope with `callRecursive` extension, too.\n *\n * For example,
take a look at the following recursive tree class and a deeply\n * recursive instance of this tree with 100K nodes:\n
*\n * ```\n * class Tree(val left: Tree? = null, val right: Tree? = null)\n * val deepTree = generateSequence(Tree()) {
Tree(it) }.take(100_000).last()\n * ```\n *\n * A regular recursive function can be defined to compute a depth of a
tree:\n *\n * ```\n * fun depth(t: Tree?): Int =\n *     if (t == null) 0 else max(depth(t.left), depth(t.right)) + 1\n *
println(depth(deepTree)) // StackOverflowError\n * ```\n *\n * If this `depth` function is called for a `deepTree` it
produces `StackOverflowError` because of deep recursion.\n * However, the `depth` function can be rewritten using
`DeepRecursiveFunction` in the following way, and then\n * it successfully computes
[depth(deepTree)][DeepRecursiveFunction.invoke] expression:\n *\n * ```\n * val depth =
DeepRecursiveFunction<Tree?, Int> { t ->\n *     if (t == null) 0 else max(callRecursive(t.left),
callRecursive(t.right)) + 1\n * }\n * println(depth(deepTree)) // Ok\n * ```\n *\n * Deep recursive functions can also
mutually call each other using a heap for the stack via\n * [callRecursive][DeepRecursiveScope.callRecursive]

```

```

extension. For example, the following pair of mutually recursive functions computes the number of tree nodes at
even depth in the tree.
val mutualRecursion = object {
    val even: DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->
        if (t == null) 0 else
        odd.callRecursive(t.left) + odd.callRecursive(t.right) + 1
    }
    val odd: DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->
        if (t == null) 0 else even.callRecursive(t.left) +
        even.callRecursive(t.right)
    }
}

@param [T] the function parameter type.
@param [R] the function result type.
@param block the function
body.
@SinceKotlin("1.7")
@WasExperimental(ExperimentalStdlibApi::class)
public class
DeepRecursiveFunction<T, R> {
    internal val block: suspend DeepRecursiveScope<T, R>.(T) -> R
}

Initiates a call to this deep recursive function, forming a root of the call tree.
This operator should not be
used from inside of [DeepRecursiveScope] as it uses the call stack slot for initial recursive invocation. From
inside of [DeepRecursiveScope] use [callRecursive][DeepRecursiveScope.callRecursive].

@SinceKotlin("1.7")
@WasExperimental(ExperimentalStdlibApi::class)
public operator fun <T, R>
DeepRecursiveFunction<T, R>.invoke(value: T): R =
    DeepRecursiveScopeImpl<T, R>(block,
    value).runCallLoop()

A scope class for [DeepRecursiveFunction] function declaration that defines
[callRecursive] methods to recursively call this function
or another [DeepRecursiveFunction] putting the call activation frame on the heap.

@param [T] function
parameter type.
@param [R] function result type.

@RestrictsSuspension
@SinceKotlin("1.7")
@WasExperimental(ExperimentalStdlibApi::class)
public
sealed class DeepRecursiveScope<T, R> {
    /**
     * Makes recursive call to this [DeepRecursiveFunction]
     function putting the call activation frame on the heap,
     as opposed to the actual call stack that is used by a
     regular recursive call.
     */
    public abstract suspend fun callRecursive(value: T): R

    /**
     * Makes call
     to the specified [DeepRecursiveFunction] function putting the call activation frame on the heap,
     as opposed to the actual call stack that is used by a regular call.
     */
    public abstract suspend fun <U, S>
    DeepRecursiveFunction<U, S>.callRecursive(value: U): S

    @Deprecated(level =
    DeprecationLevel.ERROR,
    message = "'invoke'
    should not be called from DeepRecursiveScope. Use 'callRecursive' to do recursion in the heap
    instead of the call stack.",
    replaceWith = ReplaceWith("this.callRecursive(value)"))
    public operator fun DeepRecursiveFunction<*, *>.invoke(value:
    Any?): Nothing = throw UnsupportedOperationException("Should not be called from
    DeepRecursiveScope()")

    // ===== Implementation =====
    private
    typealias DeepRecursiveFunctionBlock = suspend DeepRecursiveScope<*, *>.(Any?) ->
    Any?

    @SharedImmutable
    private val UNDEFINED_RESULT =
    Result.success(COROUTINE_SUSPENDED)

    @Suppress("UNCHECKED_CAST")
    private class
    DeepRecursiveScopeImpl<T, R> {
        block: suspend DeepRecursiveScope<T, R>.(T) -> R,
        value: T
    } :
    DeepRecursiveScope<T, R>(), Continuation<R> {
        // Active function block
        private var function:
        DeepRecursiveFunctionBlock = block as DeepRecursiveFunctionBlock

        // Value to call function with
        private var value: Any? = value

        // Continuation of the current call
        private var cont: Continuation<Any?>? = this as Continuation<Any?>

        // Completion result (completion of the
        whole call stack)
        private var result: Result<Any?> = UNDEFINED_RESULT

        override val context:
        CoroutineContext
        get() = EmptyCoroutineContext

        override fun resumeWith(result: Result<R>) {
            this.cont = null
            this.result = result
        }

        override suspend fun callRecursive(value: T): R =
        suspendCoroutineUninterceptedOrReturn { cont ->
            // calling the same function that is currently active
            this.cont = cont as Continuation<Any?>
            this.value = value
            COROUTINE_SUSPENDED
        }

        override suspend fun <U, S> DeepRecursiveFunction<U, S>.callRecursive(value: U): S =
        suspendCoroutineUninterceptedOrReturn { cont ->
            // calling another recursive function
            val
            function = block as DeepRecursiveFunctionBlock
            with(this@DeepRecursiveScopeImpl) {
                val
                currentFunction = this.function
                if (function !== currentFunction) {
                    // calling a different function

```



```

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Byte.mod(other: Long): Long = \n
this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer
to negative infinity. */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Short.floorDiv(other:
Byte): Int = \n  this.toInt().floorDiv(other.toInt())\n\n/** \n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute
value less than the absolute value of the divisor.\n */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic
inline fun Short.mod(other: Byte): Byte = \n  this.toInt().mod(other.toInt()).toByte()\n\n/** Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Short.floorDiv(other: Short): Int = \n
this.toInt().floorDiv(other.toInt())\n\n/** \n * Calculates the remainder of flooring division of this value by the other
value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the
absolute value of the divisor.\n */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Short.mod(other: Short): Short = \n  this.toInt().mod(other.toInt()).toShort()\n\n/** Divides this value by the other
value, flooring the result to an integer that is closer to negative infinity.

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Short.floorDiv(other: Int): Int =
\n  this.toInt().floorDiv(other)\n\n/** \n * Calculates the remainder of flooring division of this value by the other
value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the
absolute value of the divisor.\n */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Short.mod(other: Int): Int = \n  this.toInt().mod(other)\n\n/** Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Short.floorDiv(other: Long): Long = \n
this.toLong().floorDiv(other)\n\n/** \n * Calculates the remainder of flooring division of this value by the other
value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the
absolute value of the divisor.\n */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Short.mod(other: Long):
Long = \n  this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer
that is closer to negative infinity. */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Int.floorDiv(other: Byte): Int = \n  this.floorDiv(other.toInt())\n\n/** \n * Calculates the remainder of flooring
division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and
has the absolute value less than the absolute value of the divisor.\n

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Byte): Byte = \n
this.mod(other.toInt()).toByte()\n\n/** Divides this value by the other value, flooring the result to an integer that is
closer to negative infinity. */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Int.floorDiv(other: Short): Int = \n  this.floorDiv(other.toInt())\n\n/** \n * Calculates the remainder of flooring
division of
this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the
absolute value less than the absolute value of the divisor.\n

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Short): Short = \n
this.mod(other.toInt()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer that is
closer to negative infinity. */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Int.floorDiv(other: Int): Int {\n  var q = this / other\n  if (this xor other < 0 && q * other != this) q--\n  return
q}\n\n/** \n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the
divisor.\n */^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Int): Int {\n
val r = this
% other\n  return r + (other and (((r xor other) and (r or -r)) shr 31))\n}\n\n/** Divides this value by the other
value, flooring the result to an integer that is closer to negative infinity.

*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Int.floorDiv(other: Long): Long = \n

```

`this.toLong().floorDiv(other)`
 Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Int.mod(other: Long): Long =
    this.toLong().mod(other)
  
```

Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Long.floorDiv(other: Byte): Long =
    this.floorDiv(other.toLong())
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Long.mod(other: Byte): Byte =
    this.mod(other.toLong()).toByte()
  
```

Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Long.floorDiv(other: Short): Long =
    this.floorDiv(other.toLong())
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Long.mod(other: Short): Short =
    this.mod(other.toLong()).toShort()
  
```

Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Long.floorDiv(other: Int): Long =
    this.floorDiv(other.toLong())
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun
Long.mod(other: Int): Int =
    this.mod(other.toLong()).toInt()
  
```

Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Long.floorDiv(other: Long): Long {
    var q = this / other
    if (this xor other < 0 && q * other != this) q--
    return q
  }
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Long.mod(other: Long): Long {
    val r = this % other
    return r + (other and (((r xor other) and (r or -r)) shr 63))
  }
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor. If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or equal to the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Float.mod(other: Float): Float {
    val r = this % other
    return if (r != 0.0.toFloat() && r.sign != other.sign) r + other else r
  }
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor. If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or equal to the absolute value of the divisor.

```

@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun Float.mod(other: Double): Double =
    this.toDouble().mod(other)
  
```

Calculates the remainder of flooring division of this value by the other value. The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor. If the result cannot be represented exactly, it is rounded to the nearest representable

```

number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the
divisor.\n */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Double.mod(other: Float):
Double = \n    this.mod(other.toDouble())\n\n/**\n * Calculates the remainder of flooring division of this value by
the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less
than the absolute value of the divisor.\n * \n * If the result cannot be represented exactly, it is rounded to the nearest
representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of
the divisor.\n */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Double.mod(other:
Double): Double {\n    val r = this % other\n    return if (r != 0.0 && r.sign != other.sign) r + other else
r}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport kotlin.internal.InlineOnly\n\n/**\n * Returns a hash
code value for the object or zero if the object is `null`.\n * \n * @see Any.hashCode\n
*/\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun Any?.hashCode(): Int = this?.hashCode() ?: 0\n", /*\n *
Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin\n\n/**\n * Represents a version of the Kotlin standard library.\n * \n * [major], [minor] and [patch] are integer
components of a version,\n * they must be non-negative and not greater than 255
([MAX_COMPONENT_VALUE]).\n * \n * @constructor Creates a version from all three components.\n
*/\n@SinceKotlin("1.1")\npublic class KotlinVersion(val
    major: Int, val minor: Int, val patch: Int) : Comparable<KotlinVersion> {\n    /**\n     * Creates a version from
[major] and [minor] components, leaving [patch] component zero.\n     */\n    public constructor(major: Int, minor:
Int) : this(major, minor, 0)\n\n    private val version = versionOf(major, minor, patch)\n\n    private fun
versionOf(major: Int, minor: Int, patch: Int): Int {\n        require(major in 0..MAX_COMPONENT_VALUE &&
minor in 0..MAX_COMPONENT_VALUE && patch in 0..MAX_COMPONENT_VALUE) {\n            "Version
components are out of range: $major.$minor.$patch"\n        }\n        return major.shl(16) + minor.shl(8) + patch\n
}\n\n    /**\n     * Returns the string representation of this version\n     */\n    override fun toString(): String =
"$major.$minor.$patch"\n\n    override fun equals(other: Any?): Boolean {\n        if (this === other) return true\n
        val otherVersion = (other as? KotlinVersion) ?: return false\n        return this.version == otherVersion.version\n
}\n\n    override fun hashCode(): Int = version\n\n    override fun compareTo(other: KotlinVersion): Int = version
- other.version\n\n    /**\n     * Returns `true` if this version is not less than the version specified\n     * with the
provided [major] and [minor] components.\n     */\n    public fun isAtLeast(major: Int, minor: Int): Boolean = //
this.version >= versionOf(major, minor, 0)\n        this.major > major || (this.major == major &&
this.minor >= minor)\n\n    /**\n     * Returns `true` if this version is not less than the version specified\n     * with
the provided [major], [minor] and [patch] components.\n     */\n    public fun isAtLeast(major: Int, minor: Int, patch:
Int): Boolean = // this.version >= versionOf(major, minor, patch)\n        this.major > major || (this.major == major
&&\n            (this.minor > minor || this.minor == minor &&\n                this.patch >= patch))\n\n    companion object {\n        /**\n
         * Maximum value a version component can have, a constant value 255.\n         */\n        // NOTE: Must be
placed before CURRENT because its initialization requires this field being initialized in JS\n        public const val
MAX_COMPONENT_VALUE = 255\n\n        /**\n         * Returns the current version of the Kotlin standard
library.\n         */\n        @kotlin.jvm.JvmField\n        public val CURRENT: KotlinVersion =
KotlinVersionCurrentValue.get()\n    }\n\n    // this class is ignored during classpath normalization when
considering whether to recompile dependencies in Kotlin build\n    private object KotlinVersionCurrentValue {\n        @kotlin.jvm.JvmStatic\n        fun get(): KotlinVersion = KotlinVersion(1, 7, 10) // value is written here automatically
during build\n    }\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("LateinitKt")\n@file:Suppress("unused")\n\npackage

```

```

kotlin\n\nimport kotlin.internal.InlineOnly\nimport kotlin.internal.AccessibleLateinitPropertyLiteral\nimport
kotlin.reflect.KProperty0\n\n/**\n * Returns `true` if this lateinit property has been assigned a value, and `false`
otherwise.\n *\n * Cannot be used in an inline function, to avoid binary compatibility issues.\n
*\n\n@SinceKotlin("1.2")\n@InlineOnly\ninline val @receiver:AccessibleLateinitPropertyLiteral
KProperty0<*>.isInitialized: Boolean\n    get() = throw NotImplementedError("Implementation is
intrinsic")\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName("LazyKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage kotlin\n\nimport
kotlin.reflect.KProperty\n\n/**\n * Represents a value with lazy initialization.\n
*\n * To create an instance of [Lazy] use the [lazy] function.\n *\n\npublic interface Lazy<out T> {\n    /**\n     *
Gets the lazily initialized value of the current Lazy instance.\n     * Once the value was initialized it must not change
during the rest of lifetime of this Lazy instance.\n     *\n     public val value: T\n     /**\n     * Returns `true` if a
value for this Lazy instance has been already initialized, and `false` otherwise.\n     * Once this function has returned
`true` it stays `true` for the rest of lifetime of this Lazy instance.\n     *\n     public fun isInitialized():
Boolean\n    }\n\n/**\n * Creates a new instance of the [Lazy] that is already initialized with the specified [value].\n
*\n\npublic fun <T> lazyOf(value: T): Lazy<T> = InitializedLazyImpl(value)\n\n/**\n * An extension to delegate a
read-only property of type [T] to an instance of [Lazy].\n *\n * This extension allows to use instances of Lazy for
property delegation:\n *\n `val property: String
by lazy { initializer }`\n *\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
Lazy<T>.getValue(thisRef: Any?, property: KProperty<*>): T = value\n\n/**\n * Specifies how a [Lazy] instance
synchronizes initialization among multiple threads.\n *\n\npublic enum class LazyThreadSafetyMode {\n\n    /**\n     *
Locks are used to ensure that only a single thread can initialize the [Lazy] instance.\n     *\n     SYNCHRONIZED,\n     /**\n     * Initializer function can be called several times on concurrent access to
uninitialized [Lazy] instance value,\n     * but only the first returned value will be used as the value of [Lazy]
instance.\n     *\n     PUBLICATION,\n     /**\n     * No locks are used to synchronize an access to the [Lazy]
instance value; if the instance is accessed from multiple threads, its behavior is undefined.\n     *\n     * This mode
should not be used unless the [Lazy] instance is guaranteed never to be initialized from more than one thread.\n     *\n
*/\n     NONE,\n}\n\n\ninternal object UNINITIALIZED_VALUE\n\n// internal to be called from lazy in JS\ninternal
class UnsafeLazyImpl<out T>(initializer: () -> T) : Lazy<T>, Serializable {\n    private var initializer: (() -> T)? =
initializer\n    private var _value: Any? = UNINITIALIZED_VALUE\n    override val value: T\n        get() {\n
            if (_value === UNINITIALIZED_VALUE) {\n                _value = initializer!!()\n                initializer = null\n
            }\n            @Suppress("UNCHECKED_CAST")\n            return _value as T\n        }\n    override fun
isInitialized(): Boolean = _value !== UNINITIALIZED_VALUE\n    override fun toString(): String = if
(isInitialized()) value.toString() else "Lazy value not initialized yet."\n\n    private fun writeReplace(): Any =
InitializedLazyImpl(value)\n}\n\n\ninternal class InitializedLazyImpl<out T>(override val value: T) : Lazy<T>,
Serializable {\n    override fun isInitialized(): Boolean = true\n    override fun
toString(): String = value.toString()\n}\n", "/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("NumbersKt")\npackage kotlin\n\n/**\n *
Counts the number of set bits in the binary representation of this [Int] number.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.countOneBits(): Int\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary
representation of this [Int] number.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.countLeadingZeroBits(): Int\n\n/**\n * Counts the number of consecutive least significant bits that are zero in
the binary representation of this [Int] number.\n

```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
  expect fun Int.countTrailingZeroBits(): Int\n\n/**\n * Returns a number having a single bit set in the position of the
  most significant set bit of this [Int] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
  Int.takeHighestOneBit(): Int\n\n/**\n * Returns a number having a single bit set in the position of the least
  significant set bit of this [Int] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
  Int.takeLowestOneBit(): Int\n\n/**\n * Rotates the binary representation of this [Int] number left by the specified
  [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least
  significant bits on the right side.\n *\n * Rotating the number left by a negative bit count is the same as rotating it
  right by the negated bit
  count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n *\n * Rotating by a multiple of [Int.SIZE_BITS]
  (32) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
  Int.rotateLeft(bitCount: Int): Int\n\n/**\n * Rotates the binary representation of this [Int] number right by the
  specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number
  as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit count is the same as
  rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a
  multiple of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateRight(n) ==
  number.rotateRight(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
  expect fun Int.rotateRight(bitCount: Int): Int\n\n/**\n * Counts the number of set bits in the binary representation
  of this [Long] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
  expect fun Long.countOneBits(): Int\n\n/**\n * Counts the number of consecutive most significant bits that are zero
  in the binary representation of this [Long] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
  Long.countLeadingZeroBits(): Int\n\n/**\n * Counts the number of consecutive least significant bits that are zero in
  the binary representation of this [Long] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
  Long.countTrailingZeroBits(): Int\n\n/**\n * Returns a number having a single bit set in the position of the most
  significant set bit of this [Long] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
  expect fun Long.takeHighestOneBit(): Long\n\n/**\n * Returns a number having a single bit set in the position of
  the least significant set bit of this [Long] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
  Long.takeLowestOneBit(): Long\n\n/**\n * Rotates the binary representation of this [Long] number left by the
  specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as
  the least significant bits on the right side.\n *\n * Rotating the number left by a negative bit count is the same as
  rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n *\n * Rotating by a
  multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateLeft(n) ==
  number.rotateLeft(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
  expect fun Long.rotateLeft(bitCount: Int): Long\n\n/**\n * Rotates the binary representation of this [Long] number
  right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter
  the number as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit count is
  the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n *
  Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n *
  `number.rotateRight(n) == number.rotateRight(n % 64)`\n

```



```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Long.rotateRight(bitCount: Int): Long\n\n**\n * Counts the number of set bits in the binary representation of this
[Byte] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun Byte.countOneBits():
Int = (toInt() and 0xFF).countOneBits()\n\n**\n * Counts the number of consecutive most significant bits that are
zero in the binary representation of this [Byte] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun Byte.countLeadingZeroBits(): Int = (toInt() and 0xFF).countLeadingZeroBits() - (Int.SIZE_BITS -
Byte.SIZE_BITS)\n\n**\n * Counts the number of consecutive least significant bits that are zero in the binary
representation of this [Byte] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun Byte.countTrailingZeroBits(): Int = (toInt() or 0x100).countTrailingZeroBits()\n\n**\n * Returns a
number having a single bit set in the position of the most significant set bit of this [Byte] number,\n * or zero, if this
number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c
inline fun Byte.takeHighestOneBit(): Byte = (toInt() and 0xFF).takeHighestOneBit().toByte()\n\n**\n * Returns a
number having a single bit set in the position of the least significant set bit of this [Byte] number,\n * or zero, if this
number is zero.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun Byte.takeLowestOneBit(): Byte = toInt().takeLowestOneBit().toByte()\n\n**\n * Rotates the binary
representation of this [Byte] number left by the specified [bitCount] number of bits.\n * The most significant bits
pushed out from the left side reenter the number as the least significant bits on the right side.\n * Rotating the
number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-
n) == number.rotateRight(n)`\n * Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or
more generally\n * `number.rotateLeft(n)
== number.rotateLeft(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
Byte.rotateLeft(bitCount: Int): Byte =\n (toInt().shl(bitCount and 7) or (toInt() and 0xFF).ushr(8 - (bitCount and
7))).toByte()\n\n**\n * Rotates the binary representation of this [Byte] number right by the specified [bitCount]
number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most
significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as rotating it
left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of
[Byte.SIZE_BITS] (8) returns the same number, or more generally\n * `number.rotateRight(n) ==
number.rotateRight(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
Byte.rotateRight(bitCount: Int): Byte =\n (toInt().shl(8 - (bitCount and 7)) or (toInt() and
0xFF).ushr(bitCount and 7)).toByte()\n\n**\n * Counts the number of set bits in the binary representation of this
[Short] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun Short.countOneBits(): Int = (toInt() and 0xFFFF).countOneBits()\n\n**\n * Counts the number of
consecutive most significant bits that are zero in the binary representation of this [Short] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun Short.countLeadingZeroBits(): Int =\n (toInt() and 0xFFFF).countLeadingZeroBits() - (Int.SIZE_BITS
- Short.SIZE_BITS)\n\n**\n * Counts the number of consecutive least significant bits that are zero in the binary
representation of this [Short] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli

```

```

c inline fun Short.countTrailingZeroBits(): Int = (toInt()
or 0x10000).countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most
significant set bit of this [Short] number,\n * or zero, if this number is zero.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun Short.takeHighestOneBit(): Short = (toInt() and 0xFFFF).takeHighestOneBit().toShort()\n\n/**\n *
Returns a number having a single bit set in the position of the least significant set bit of this [Short] number,\n * or
zero, if this number is zero.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun Short.takeLowestOneBit(): Short = toInt().takeLowestOneBit().toShort()\n\n\n/**\n * Rotates the binary
representation of this [Short] number left by the specified [bitCount] number of bits.\n * The most significant bits
pushed out from the left side reenter the number as the least significant bits on the
right side.\n * \n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit
count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * \n * Rotating by a multiple of [Short.SIZE_BITS]
(16) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 16)`\n
*\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
Short.rotateLeft(bitCount: Int): Short =\n (toInt().shl(bitCount and 15) or (toInt() and 0xFFFF).ushr(16 - (bitCount
and 15))).toShort()\n\n\n/**\n * Rotates the binary representation of this [Short] number right by the specified
[bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the
most significant bits on the left side.\n * \n * Rotating the number right by a negative bit count is the same as rotating
it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * \n * Rotating
by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateRight(n)
== number.rotateRight(n % 16)`\n
*\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
Short.rotateRight(bitCount: Int): Short =\n (toInt().shl(16 - (bitCount and 15)) or (toInt() and
0xFFFF).ushr(bitCount and 15)).toShort()\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n * \n\npackage kotlin\nimport kotlin.internal.RequireKotlin\nimport
kotlin.internal.RequireKotlinVersionKind\n\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.2")\n@Suppress("IN
VISIBLE_MEMBER", "INVISIBLE_REFERENCE")\n@RequireKotlin("1.2.30", level =
DeprecationLevel.HIDDEN, versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\npublic inline fun
<R> suspend(noinline block: suspend () -> R): suspend () ->
R = block\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName("TuplesKt")\n\npackage kotlin\n\n\n/**\n * Represents a generic pair of two
values.\n * \n * There is no meaning attached to values in this class, it can be used for any purpose.\n * Pair exhibits
value semantics, i.e. two pairs are equal if both components are equal.\n * \n * An example of decomposing it into
values:\n * @sample samples.misc.Tuples.pairDestructuring\n * \n * @param A type of the first value.\n * @param
B type of the second value.\n * @property first First value.\n * @property second Second value.\n * @constructor
Creates a new instance of Pair.\n * \n\npublic data class Pair<out A, out B>(\n public val first: A,\n public val
second: B\n) : Serializable {\n\n /*\n * Returns string representation of the [Pair]
including its [first] and [second] values.\n * \n public override fun toString(): String = "$first,
$second)\n\n}\n\n\n/**\n * Creates a tuple of type [Pair] from this and [that].\n * \n * This can be useful for creating
[Map] literals with less noise, for example:\n * @sample samples.collections.Maps.instantiation.mapFromPairs\n
*\n\npublic infix fun <A, B> A.to(that: B): Pair<A, B> = Pair(this, that)\n\n\n/**\n * Converts this pair into a list.\n *
*\n * @sample samples.misc.Tuples.pairToList\n * \n\npublic fun <T> Pair<T, T>.toList(): List<T> = listOf(first,
second)\n\n\n/**\n * Represents a triad of values\n * \n * There is no meaning attached to values in this class, it can be
used for any purpose.\n * Triple exhibits value semantics, i.e. two triples are equal if all three components are
equal.\n * \n * An example of decomposing it into values:\n * @sample samples.misc.Tuples.tripleDestructuring\n * \n

```

```

@param A type of the first value.\n * @param B type of the second value.\n * @param C type
of the third value.\n * @property first First value.\n * @property second Second value.\n * @property third Third
value.\n */\npublic data class Triple<out A, out B, out C>(\n    public val first: A,\n    public val second: B,\n    public val third: C\n) : Serializable {\n\n    /**\n     * Returns string representation of the [Triple] including its [first],
[second] and [third] values.\n     */\n    public override fun toString(): String = "$first, $second,
$third)\n)\n\n/**\n * Converts this triple into a list.\n * @sample samples.misc.Tuples.tripleToList\n */\npublic
fun <T> Triple<T, T, T>.toList(): List<T> = listOf(first, second, third)\n)", "\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin.ranges\n\nimport kotlin.internal.*\n\n/**\n * A range of values of
type `UInt`.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic class
UIntRange(start: UInt, endInclusive: UInt) : UIntProgression(start, endInclusive, 1), ClosedRange<UInt> {\n
    override val start: UInt get() = first\n    override val endInclusive: UInt get() = last\n\n    override fun contains(value:
UInt): Boolean = first <= value && value <= last\n\n    /**\n     * Checks if the range is empty.\n     */\n     * The
range is empty if its start value is greater than the end value.\n     */\n     * \n     * \n     * \n     * \n     * \n
    override fun isEmpty(): Boolean = first >
last\n\n    override fun equals(other: Any?): Boolean =\n        other is UIntRange && (isEmpty() &&
other.isEmpty() ||\n            first == other.first && last == other.last)\n\n    override fun hashCode(): Int =\n        if
(isEmpty()) -1 else (31 * first.toInt() + last.toInt())\n\n    override fun toString(): String = "$first..$last"\n\n
companion object {\n        /**\n         * An empty range of values of type
UInt.\n         */\n         * \n         * \n         * \n         * \n         * \n         * \n         * \n         * \n
        public val EMPTY: UIntRange = UIntRange(UInt.MAX_VALUE, UInt.MIN_VALUE)\n    }\n\n    /**\n     * A progression of values of type `UInt`.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic open class
UIntProgression(\n    internal constructor(\n        start: UInt,\n        endInclusive: UInt,\n        step: Int\n) : Iterable<UInt> {\n
    init {\n        if (step == 0.toInt()) throw kotlin.IllegalArgumentException("Step must be non-zero.")\n        if (step
== Int.MIN_VALUE) throw kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to
avoid overflow on negation.")\n    }\n\n    /**\n     * The first element in the progression.\n     */\n     * \n     * \n
    public val first:
UInt = start\n\n    /**\n     * The last element in the progression.\n     */\n     * \n     * \n     * \n     * \n
    public val last: UInt =
getProgressionLastElement(start, endInclusive, step)\n\n    /**\n     * The step of the progression.\n     */\n     * \n     * \n
    public
val step: Int = step\n\n    final override fun
iterator(): Iterator<UInt> = UIntProgressionIterator(first, last, step)\n\n    /**\n     * Checks if the progression is
empty.\n     */\n     * \n     * \n     * \n     * \n     * \n     * \n     * \n     * \n     * \n     * \n     * \n
    * Progression with a positive step is empty if its first element is greater than the last element.\n     * \n
    * Progression with a negative step is empty if its first element is less than the last element.\n     */\n     * \n     * \n
    public open fun
isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun equals(other: Any?): Boolean =\n        other is UIntProgression && (isEmpty() && other.isEmpty() ||\n            first == other.first && last == other.last
&& step == other.step)\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (31 * first.toInt() +
last.toInt()) + step.toInt())\n\n    override fun toString(): String = if (step > 0) "$first..$last step $step" else "$first
downTo $last step ${-step}"\n\n    companion object {\n        /**\n         * Creates UIntProgression within the
specified bounds
of a closed range.\n         */\n         * \n         * \n         * \n         * \n         * \n         * \n         * \n
        * The progression starts with the [rangeStart] value and goes toward the [rangeEnd]
value not excluding it, with the specified [step].\n         */\n         * \n         * \n         * \n         * \n
        * In order to go backwards the [step] must be negative.\n         */\n         * \n         * \n         * \n
        * [step] must be greater than `Int.MIN_VALUE` and not equal to zero.\n         */\n         * \n         * \n
        public fun
fromClosedRange(rangeStart: UInt, rangeEnd: UInt, step: Int): UIntProgression = UIntProgression(rangeStart,
rangeEnd, step)\n    }\n\n    /**\n     * An iterator over a progression of values of type `UInt`.\n     */\n     * \n     * \n
    @property step the
number by which the value is incremented on each step.\n     */\n     * \n     * \n     * \n     * \n     * \n
    @SinceKotlin("1.3")\nprivate class
UIntProgressionIterator(first: UInt, last: UInt, step: Int) : Iterator<UInt> {\n    private val finalElement = last\n
    private var hasNext: Boolean = if (step > 0) first <= last else first >= last\n    private val step = step.toInt() // use 2-
complement math for negative steps\n    private var next = if (hasNext)

```

```

first else finalElement\n\n    override fun hasNext(): Boolean = hasNext\n\n    override fun next(): UInt {\n        val
value = next\n        if (value == finalElement) {\n            if (!hasNext) throw kotlin.NoSuchElementException()\n
            hasNext = false\n        } else {\n            next += step\n        }\n        return value\n    }\n}\n\n"/*\n * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin.ranges\n\n\nimport kotlin.internal.*\n\n/**\n * A range of values of type `ULong`.\n
*/\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic class
ULongRange(start: ULong, endInclusive: ULong) : ULongProgression(start, endInclusive, 1),
ClosedRange<ULong> {\n    override val start: ULong get() = first\n    override val endInclusive: ULong
get() = last\n\n    override fun contains(value: ULong): Boolean = first <= value && value <= last\n\n    /**\n
 * Checks if the range is empty.\n    * The range is empty if its start value is greater than the end value.\n
*/\n\n    override fun isEmpty(): Boolean = first > last\n\n    override fun equals(other: Any?): Boolean =\n        other is
ULongRange && (isEmpty() && other.isEmpty()) ||\n            first == other.first && last == other.last\n\n
    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (first xor (first shr 32)).toInt() + (last xor (last shr
32)).toInt())\n\n    override fun toString(): String = "$first..$last"\n\n    companion object {\n        /**\n
 * An empty range of values of type ULong. */\n        public val EMPTY: ULongRange = ULongRange(ULong.MAX_VALUE,
ULong.MIN_VALUE)\n    }\n}\n\n/**\n * A progression of values of type `ULong`.\n
*/\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic open
class ULongProgression\n    internal constructor(\n        start: ULong,\n        endInclusive: ULong,\n        step: Long\n    ) :
Iterable<ULong> {\n    init {\n        if (step == 0.toLong()) throw kotlin.IllegalArgumentException("Step must be
non-zero.")\n        if (step == Long.MIN_VALUE) throw kotlin.IllegalArgumentException("Step must be greater
than Long.MIN_VALUE to avoid overflow on negation.")\n    }\n\n    /**\n * The first element in the
progression.\n    */\n    public val first: ULong = start\n\n    /**\n * The last element in the progression.\n
*/\n    public val last: ULong = getProgressionLastElement(start, endInclusive, step)\n\n    /**\n * The step of the
progression.\n    */\n    public val step: Long = step\n\n    final override fun iterator(): Iterator<ULong> =
ULongProgressionIterator(first, last, step)\n\n    /**\n * Checks if the progression is empty.\n    * The
progression with a positive step is empty if its first element is greater than the last
element.\n    * Progression with a negative step is empty if its first element is less than the last element.\n
*/\n\n    public open fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun equals(other: Any?):
Boolean =\n        other is ULongProgression && (isEmpty() && other.isEmpty()) ||\n            first == other.first
&& last == other.last && step == other.step)\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 *
(31 * (first xor (first shr 32)).toInt() + (last xor (last shr 32)).toInt() + (step xor (step ushr 32)).toInt())\n\n
    override fun toString(): String = if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-step}"\n\n
    companion object {\n        /**\n * Creates ULongProgression within the specified bounds of a closed
range.\n    * The progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not
excluding it, with the specified [step].\n
*/\n\n        * In order to go backwards the [step] must be negative.\n        * [step] must be greater than
`Long.MIN_VALUE` and not equal to zero.\n    }\n\n    public fun fromClosedRange(rangeStart: ULong,
rangeEnd: ULong, step: Long): ULongProgression = ULongProgression(rangeStart, rangeEnd, step)\n
}\n}\n\n/**\n * An iterator over a progression of values of type `ULong`.\n    * @property step the number by which
the value is incremented on each step.\n    */\n\n@SinceKotlin("1.3")\nprivate class ULongProgressionIterator(first:
ULong, last: ULong, step: Long) : Iterator<ULong> {\n    private val finalElement = last\n    private var hasNext:
Boolean = if (step > 0) first <= last else first >= last\n    private val step = step.toULong() // use 2-complement math
for negative steps\n    private var next = if (hasNext) first else finalElement\n\n    override fun hasNext(): Boolean =
hasNext\n\n    override fun next(): ULong {\n        val value = next\n        if (value
== finalElement) {\n            if (!hasNext) throw kotlin.NoSuchElementException()\n            hasNext = false\n        }
else {\n            next += step\n        }\n        return value\n    }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license

```

that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.math\n\n/**\n * Returns the smaller of two values.\n

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun min(a: UInt, b: UInt): UInt {\n    return minOf(a, b)\n}\n\n/**\n * Returns the smaller of two values.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun min(a: ULong, b: ULong): ULong {\n    return minOf(a, b)\n}\n\n/**\n * Returns the greater of two values.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
```

```
    inline fun max(a: UInt, b: UInt): UInt {\n        return maxOf(a, b)\n    }\n\n/**\n * Returns the greater of two values.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun max(a: ULong, b: ULong): ULong {\n    return maxOf(a, b)\n}\n\n/*\n * Copyright 2010-2021\n * JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the\n * Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```
*\n@file:kotlin.jvm.JvmName("UNumbersKt")\npackage kotlin\n\n/**\n * Counts the number of set bits in the binary representation of this [UInt] number.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,\nExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countOneBits(): Int =\ntoInt().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [UInt] number.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,\nExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countLeadingZeroBits(): Int =\ntoInt().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [UInt] number.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,\nExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countTrailingZeroBits(): Int =\ntoInt().countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most significant set bit of this [UInt] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,\nExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.takeHighestOneBit():\n    UInt = toInt().takeHighestOneBit().toUInt()\n\n/**\n * Returns a number having a single bit set in the position of the least significant set bit of this [UInt] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,\nExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.takeLowestOneBit(): UInt =\ntoInt().takeLowestOneBit().toUInt()\n\n/**\n * Rotates the binary representation of this [UInt] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateLeft(n) ==\n
```

```
    32`\n */\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,\nExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.rotateLeft(bitCount: Int):\n    UInt = toInt().rotateLeft(bitCount).toUInt()\n\n/**\n * Rotates the binary representation of this [UInt] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n * 
```

```

`number.rotateRight(n) == number.rotateRight(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.rotateRight(bitCount: Int):
UInt = toInt().rotateRight(bitCount).toUInt()\n\n**\n * Counts the number of set bits in the binary representation
of this [ULong] number.\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countOneBits(): Int =
toLong().countOneBits()\n\n**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countLeadingZeroBits(): Int
= toLong().countLeadingZeroBits()\n\n**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline
fun ULong.countTrailingZeroBits(): Int = toLong().countTrailingZeroBits()\n\n**\n * Returns a number having a
single bit set in the position of the most significant set bit of this [ULong] number,\n * or zero, if this number is
zero.\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeHighestOneBit(): ULong
= toLong().takeHighestOneBit().toULong()\n\n**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [ULong] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeLowestOneBit(): ULong
= toLong().takeLowestOneBit().toULong()\n\n**\n * Rotates the binary representation of this [ULong] number left
by the specified [bitCount] number of bits.\n * The most significant
bits pushed out from the left side reenter the number as the least significant bits on the right side.\n *\n * Rotating
the number left by a negative bit count is the same as rotating it right by the negated bit count:\n *
`number.rotateLeft(-n) == number.rotateRight(n)`\n *\n * Rotating by a multiple of [ULong.SIZE_BITS] (64)
returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.rotateLeft(bitCount:
Int): ULong = toLong().rotateLeft(bitCount).toULong()\n\n**\n * Rotates the binary representation of this [ULong]
number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side
reenter the number as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit
count is the same as rotating it
left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple
of [ULong.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateRight(n) ==
number.rotateRight(n % 64)`\n*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.rotateRight(bitCount:
Int): ULong = toLong().rotateRight(bitCount).toULong()\n\n**\n * Counts the number of set bits in the binary
representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countOneBits(): Int =
toUInt().countOneBits()\n\n**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countLeadingZeroBits(): Int
= toByte().countLeadingZeroBits()\n\n**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [UByte] number.\n

```

```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countTrailingZeroBits(): Int =
toByte().countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most
significant set bit of this [UByte] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.takeHighestOneBit(): UByte
= toInt().takeHighestOneBit().toUByte()\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit
of this [UByte] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.takeLowestOneBit(): UByte =
toInt().takeLowestOneBit().toUByte()\n\n\n/**\n * Rotates the binary representation of this [UByte] number left by
the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the
number as the least significant bits on the right side.\n * \n * Rotating the number left by a negative bit count is the
same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * \n * Rotating by a multiple of [UByte.SIZE_BITS] (8) returns the same number, or more generally\n *
`number.rotateLeft(n) == number.rotateLeft(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun UByte.rotateLeft(bitCount: Int): UByte = toByte().rotateLeft(bitCount).toUByte()\n\n\n/**\n * Rotates the
binary representation of this [UByte] number right by the specified [bitCount] number of bits.\n * The least
significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n * \n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n *
`number.rotateRight(-n) == number.rotateLeft(n)`\n * \n * Rotating by a multiple of [UByte.SIZE_BITS] (8) returns
the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.rotateRight(bitCount:
Int): UByte = toByte().rotateRight(bitCount).toUByte()\n\n\n/**\n * Counts the number of set bits in the binary
representation of this [UShort]
number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countOneBits(): Int =
toUInt().countOneBits()\n\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countLeadingZeroBits(): Int
= toShort().countLeadingZeroBits()\n\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countTrailingZeroBits(): Int
= toShort().countTrailingZeroBits()\n\n\n/**\n * Returns a number having a single bit set in
the position of the most significant set bit of this [UShort] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeHighestOneBit(): UShort
= toInt().takeHighestOneBit().toUShort()\n\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [UShort] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeLowestOneBit(): UShort
= toInt().takeLowestOneBit().toUShort()\n\n\n/**\n * Rotates the binary representation of this [UShort] number left

```



```

and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUByteOrNull(radix: Int): UByte? {\n    val int = this.toUIntOrNull(radix) ?: return null\n    if (int >
UByte.MAX_VALUE) return null\n    return int.toUByte()\n}\n\n**\n * Parses the string
as an [UShort] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUShortOrNull(): UShort? = toUShortOrNull(radix = 10)\n\n**\n * Parses the string as an [UShort] number
and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUShortOrNull(radix: Int): UShort? {\n    val int = this.toUIntOrNull(radix) ?: return null\n    if (int >
UShort.MAX_VALUE) return null\n    return int.toUShort()\n}\n\n**\n * Parses the string as an [UInt] number and
returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun String.toUIntOrNull(): UInt? = toUIntOrNull(radix = 10)\n\n**\n * Parses the string as an [UInt] number and
returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUIntOrNull(radix: Int): UInt? {\n    checkRadix(radix)\n\n    val length = this.length\n    if (length == 0)
return null\n\n    val limit: UInt = UInt.MAX_VALUE\n    val start: Int\n\n    val firstChar = this[0]\n    if (firstChar
< '0') {\n        if (length == 1 || firstChar != '+') return null\n        start = 1\n    } else {\n        start = 0\n    }\n\n    val
limitForMaxRadix = 119304647u // limit / 36\n\n    var limitBeforeMul = limitForMaxRadix\n    val uradix =
radix.toUInt()\n    var result = 0u\n    for (i in start until length) {\n        val
digit = digitOf(this[i], radix)\n\n        if (digit < 0) return null\n        if (result > limitBeforeMul) {\n            if
(limitBeforeMul == limitForMaxRadix) {\n                limitBeforeMul = limit / uradix\n\n                if (result >
limitBeforeMul) {\n                    return null\n                }\n            } else {\n                return null\n            }\n        }\n\n        result *= uradix\n\n        val beforeAdding = result\n        result += digit.toUInt()\n        if (result <
beforeAdding) return null // overflow has happened\n    }\n\n    return result\n}\n\n**\n * Parses the string as an
[ULong] number and returns the result\n * or `null` if the string is not a
valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for
string to number conversion.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toULongOrNull(radix: Int): ULong? {\n    checkRadix(radix)\n\n    val length = this.length\n    if (length ==
0) return null\n\n    val limit: ULong = ULong.MAX_VALUE\n    val start: Int\n\n    val firstChar = this[0]\n    if
(firstChar < '0') {\n        if (length == 1 || firstChar != '+') return null\n        start = 1\n    } else {\n        start = 0\n    }\n\n    val
limitForMaxRadix = 512409557603043100uL // limit / 36\n\n    var limitBeforeMul =
limitForMaxRadix\n    val uradix = radix.toULong()\n    var result = 0uL\n    for (i in start until length) {\n        val
digit = digitOf(this[i], radix)\n\n        if (digit < 0) return null\n        if (result > limitBeforeMul) {\n            if
(limitBeforeMul == limitForMaxRadix) {\n                limitBeforeMul = limit / uradix\n\n                if (result >
limitBeforeMul) {\n                    return null\n                }\n            } else {\n                return null\n            }\n        }\n\n        result *= uradix\n\n        val beforeAdding =
result\n        result += digit.toUInt()\n        if (result < beforeAdding) return null // overflow has happened\n    }\n\n    return result\n}\n\n**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n

```

```

*\n\n@file:Suppress(`INVISIBLE_REFERENCE`, `INVISIBLE_MEMBER`)\npackage kotlin\n\nimport
kotlin.annotation.AnnotationTarget.*\nimport kotlin.internal.RequireKotlin\nimport
kotlin.internal.RequireKotlinVersionKind\n\n/**\n * Marks the API that is dependent on the experimental unsigned
types, including those types themselves.\n *\n * Usages of such API will be
reported as warnings unless an explicit opt-in with\n * the [OptIn] annotation, e.g.
`@OptIn(ExperimentalUnsignedTypes::class)`,\n * or with the `opt-in=kotlin.ExperimentalUnsignedTypes`
compiler option is given.\n *\n * It's recommended to propagate the experimental status to the API that depends on
unsigned types by annotating it with this annotation.\n *\n @RequiresOptIn(level =
RequiresOptIn.Level.WARNING)\n @MustBeDocumented\n @Target(CLASS, ANNOTATION_CLASS,
PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION,
PROPERTY_GETTER, PROPERTY_SETTER,
TYPEALIAS)\n @Retention(AnnotationRetention.BINARY)\n @RequireKotlin(`1.2.50`, versionKind =
RequireKotlinVersionKind.COMPILER_VERSION)\n public annotation class ExperimentalUnsignedTypes\n */\n
 * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName(`MathKt`)\n\npackage
kotlin.math\n\n// constants, can't use them from nativeMath as they are not constants there\n\n/** Ratio of the
circumference of a circle to its diameter, approximately 3.14159. *\n @SinceKotlin(`1.2`)\n public const val PI:
Double = 3.141592653589793\n ** Base of the natural logarithms, approximately 2.71828.
*\n @SinceKotlin(`1.2`)\n public const val E: Double = 2.718281828459045\n // region =====
Double Math =====\n\n ** Computes the sine of the angle [x]
given in radians.\n *\n * Special cases:\n * - `sin(NaN|+Inf|-Inf)` is `NaN`\n *\n @SinceKotlin(`1.2`)\n public
expect fun sin(x: Double): Double\n\n ** Computes the cosine of the angle [x] given in radians.\n *\n * Special
cases:\n * - `cos(NaN|+Inf|-Inf)` is `NaN`\n *\n @SinceKotlin(`1.2`)\n public expect fun cos(x: Double):
Double\n\n ** Computes the tangent of the angle [x] given in radians.\n *\n * Special
cases:\n * - `tan(NaN|+Inf|-Inf)` is `NaN`\n *\n @SinceKotlin(`1.2`)\n public expect fun tan(x: Double):
Double\n\n **\n * Computes the arc sine of the value [x];\n * the returned value is an angle in the range from `-PI/2`
to `PI/2` radians.\n *\n * Special cases:\n * - `asin(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n
*\n @SinceKotlin(`1.2`)\n public expect fun asin(x: Double): Double\n\n **\n * Computes the arc cosine of the
value [x];\n * the returned value is an angle in the range from `0.0` to `PI` radians.\n *\n * Special cases:\n * -
`acos(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n *\n @SinceKotlin(`1.2`)\n public expect fun acos(x: Double):
Double\n\n **\n * Computes the arc tangent of the value [x];\n * the returned value is an angle in the range from `-
PI/2` to `PI/2` radians.\n *\n * Special cases:\n * - `atan(NaN)` is `NaN`\n *\n @SinceKotlin(`1.2`)\n public
expect fun atan(x: Double): Double\n\n **\n * Returns the angle `theta` of the polar coordinates
`(r, theta)` that correspond\n * to the rectangular coordinates `(x, y)` by computing the arc tangent of the value [y] /
[x];\n * the returned value is an angle in the range from `-PI` to `PI` radians.\n *\n * Special cases:\n * - `atan2(0.0,
0.0)` is `0.0`\n * - `atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0`\n * - `atan2(-0.0, x)` is `-0.0` for `x > 0`
and `-PI` for `x < 0`\n * - `atan2(y, +Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for `-Inf < y < 0`\n * - `atan2(y, -
Inf)` is `PI` for `0 < y < +Inf` and `-PI` for `-Inf < y < 0`\n * - `atan2(y, 0.0)` is `PI/2` for `y > 0` and `-PI/2` for `y
< 0`\n * - `atan2(+Inf, x)` is `PI/2` for finite `x`\n * - `atan2(-Inf, x)` is `-PI/2` for finite `x`\n * - `atan2(NaN,
x)` and `atan2(y, NaN)` is `NaN`\n *\n @SinceKotlin(`1.2`)\n public expect fun atan2(y: Double, x: Double):
Double\n\n **\n * Computes the hyperbolic sine of the value [x].\n *\n * Special cases:\n * - `sinh(NaN)` is
`NaN`\n * - `sinh(+Inf)`
is `+Inf`\n * - `sinh(-Inf)` is `-Inf`\n *\n @SinceKotlin(`1.2`)\n public expect fun sinh(x: Double):
Double\n\n **\n * Computes the hyperbolic cosine of the value [x].\n *\n * Special cases:\n * - `cosh(NaN)` is
`NaN`\n * - `cosh(+Inf|-Inf)` is `+Inf`\n *\n @SinceKotlin(`1.2`)\n public expect fun cosh(x: Double):
Double\n\n **\n * Computes the hyperbolic tangent of the value [x].\n *\n * Special cases:\n * - `tanh(NaN)` is
`NaN`\n * - `tanh(+Inf)` is `1.0`\n * - `tanh(-Inf)` is `-1.0`\n *\n @SinceKotlin(`1.2`)\n public expect fun tanh(x:

```

Double): Double\n\n/**\n * Computes the inverse hyperbolic sine of the value [x].\n *\n * The returned value is `y` such that `sinh(y) == x`.\n *\n * Special cases:\n * - `asinh(NaN)` is `NaN`\n * - `asinh(+Inf)` is `+Inf`\n * - `asinh(-Inf)` is `-Inf`\n *\n @SinceKotlin("1.2")\n public expect fun asinh(x: Double): Double\n\n/**\n * Computes the inverse hyperbolic cosine of the value [x].\n *\n * The returned value is positive `y` such that `cosh(y) == x`.\n *\n * Special cases:\n * - `acosh(NaN)` is `NaN`\n * - `acosh(x)` is `NaN` when `x < 1`\n * - `acosh(+Inf)` is `+Inf`\n *\n @SinceKotlin("1.2")\n public expect fun acosh(x: Double): Double\n\n/**\n * Computes the inverse hyperbolic tangent of the value [x].\n *\n * The returned value is `y` such that `tanh(y) == x`.\n *\n * Special cases:\n * - `tanh(NaN)` is `NaN`\n * - `tanh(x)` is `NaN` when `x > 1` or `x < -1`\n * - `tanh(1.0)` is `+Inf`\n * - `tanh(-1.0)` is `-Inf`\n *\n @SinceKotlin("1.2")\n public expect fun atanh(x: Double): Double\n\n/**\n * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.\n *\n * Special cases:\n * - returns `+Inf` if any of arguments is infinite\n * - returns `NaN` if any of arguments is `NaN` and the other is not infinite\n *\n @SinceKotlin("1.2")\n public expect fun hypot(x: Double, y: Double): Double\n\n/**\n * Computes the positive square root of the value [x].\n *\n * Special cases:\n * - `sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN`\n *\n @SinceKotlin("1.2")\n public expect fun sqrt(x: Double): Double\n\n/**\n * Computes Euler's number `e` raised to the power of the value [x].\n *\n * Special cases:\n * - `exp(NaN)` is `NaN`\n * - `exp(+Inf)` is `+Inf`\n * - `exp(-Inf)` is `0.0`\n *\n @SinceKotlin("1.2")\n public expect fun exp(x: Double): Double\n\n/**\n * Computes `exp(x) - 1`.\n *\n * This function can be implemented to produce more precise result for [x] near zero.\n *\n * Special cases:\n * - `expm1(NaN)` is `NaN`\n * - `expm1(+Inf)` is `+Inf`\n * - `expm1(-Inf)` is `-1.0`\n *\n @see [exp] function.\n *\n @SinceKotlin("1.2")\n public expect fun expm1(x: Double): Double\n\n/**\n * Computes the logarithm of the value [x] to the given [base].\n *\n * Special cases:\n * - `log(x, b)` is `NaN` if either `x` or `b` are `NaN`\n * - `log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0`\n * - `log(+Inf, +Inf)` is `NaN`\n * - `log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1`\n * - `log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1`\n *\n * See also logarithm functions for common fixed bases: [ln], [log10] and [log2].\n *\n @SinceKotlin("1.2")\n public expect fun log(x: Double, base: Double): Double\n\n/**\n * Computes the natural logarithm (base `E`) of the value [x].\n *\n * Special cases:\n * - `ln(NaN)` is `NaN`\n * - `ln(x)` is `NaN` when `x < 0.0`\n * - `ln(+Inf)` is `+Inf`\n * - `ln(0.0)` is `-Inf`\n *\n @SinceKotlin("1.2")\n public expect fun ln(x: Double): Double\n\n/**\n * Computes the common logarithm (base 10) of the value [x].\n *\n * @see [ln] function for special cases.\n *\n @SinceKotlin("1.2")\n public expect fun log10(x: Double): Double\n\n/**\n * Computes the binary logarithm (base 2) of the value [x].\n *\n * @see [ln] function for special cases.\n *\n @SinceKotlin("1.2")\n public expect fun log2(x: Double): Double\n\n/**\n * Computes `ln(x + 1)`.\n *\n * This function can be implemented to produce more precise result for [x] near zero.\n *\n * Special cases:\n * - `ln1p(NaN)` is `NaN`\n * - `ln1p(x)` is `NaN` where `x < -1.0`\n * - `ln1p(-1.0)` is `-Inf`\n * - `ln1p(+Inf)` is `+Inf`\n *\n @see [ln] function\n * @see [expm1] function\n *\n @SinceKotlin("1.2")\n public expect fun ln1p(x: Double): Double\n\n/**\n * Rounds the given value [x] to an integer towards positive infinity.\n *\n * @return the smallest double value that is greater than or equal to the given value [x] and is a mathematical integer.\n *\n * Special cases:\n * - `ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *\n @SinceKotlin("1.2")\n public expect fun ceil(x: Double): Double\n\n/**\n * Rounds the given value [x] to an integer towards negative infinity.\n *\n * @return the largest double value that is smaller than or equal to the given value [x] and is a mathematical integer.\n *\n * Special cases:\n * - `floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *\n @SinceKotlin("1.2")\n public expect fun floor(x: Double): Double\n\n/**\n * Rounds the given value [x] to an integer towards zero.\n *\n * @return the value [x] having its fractional part truncated.\n *\n * Special cases:\n * - `truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *\n @SinceKotlin("1.2")\n public expect fun truncate(x: Double): Double\n\n/**\n * Rounds the given value [x] towards the closest integer with ties rounded towards even integer.\n *\n * Special cases:\n * - `round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *\n @SinceKotlin("1.2")\n public expect fun round(x: Double): Double\n\n/**\n * Returns the absolute value of the given value [x].\n *\n * Special cases:\n * - `abs(NaN)` is `NaN`\n *\n @see

absoluteValue extension property for [Double] \n * \n @SinceKotlin("1.2") \n public

expect fun abs(x: Double): Double \n \n /** \n * Returns the sign of the given value [x]: \n * - -1.0` if the value is negative, \n * - zero if the value is zero, \n * - 1.0` if the value is positive \n * \n * Special case: \n * - `sign(NaN)` is `NaN` \n * \n @SinceKotlin("1.2") \n public expect fun sign(x: Double): Double \n \n /** \n * Returns the smaller of two values. \n * \n * If either value is `NaN`, then the result is `NaN`. \n * \n @SinceKotlin("1.2") \n public expect fun min(a: Double, b: Double): Double \n \n /** \n * Returns the greater of two values. \n * \n * If either value is `NaN`, then the result is `NaN`. \n * \n @SinceKotlin("1.2") \n public expect fun max(a: Double, b: Double): Double \n \n // extensions \n \n /** \n * Raises this value to the power [x]. \n * \n * Special cases: \n * - `b.pow(0.0)` is `1.0` \n * - `b.pow(1.0) == b` \n * - `b.pow(NaN)` is `NaN` \n * - `NaN.pow(x)` is `NaN` for `x != 0.0` \n * - `b.pow(Inf)` is `NaN` for `abs(b) == 1.0` \n * - `b.pow(x)` is `NaN` for `b < 0` and `x` is finite and not an integer \n * \n @SinceKotlin("1.2") \n public expect fun Double.pow(x: Double): Double \n \n /** \n * Raises this value to the integer power [n]. \n * \n * See the other overload of [pow] for details. \n * \n @SinceKotlin("1.2") \n public expect fun Double.pow(n: Int): Double \n \n /** \n * Returns the absolute value of this value. \n * \n * Special cases: \n * - `NaN.absoluteValue` is `NaN` \n * \n * @see abs function \n * \n @SinceKotlin("1.2") \n public expect val Double.absoluteValue: Double \n \n /** \n * Returns the sign of this value: \n * - -1.0` if the value is negative, \n * - zero if the value is zero, \n * - 1.0` if the value is positive \n * \n * Special case: \n * - `NaN.sign` is `NaN` \n * \n @SinceKotlin("1.2") \n public expect val Double.sign: Double \n \n /** \n * Returns this value with the sign bit same as of the [sign] value. \n * \n * If [sign] is `NaN` the sign of the result is undefined. \n * \n @SinceKotlin("1.2") \n public expect fun Double.withSign(sign: Double): Double \n \n /** \n * Returns this value with the sign bit same as of the [sign] value. \n * \n @SinceKotlin("1.2") \n public expect fun Double.withSign(sign: Int): Double \n \n /** \n * Returns the ulp (unit in the last place) of this value. \n * \n * An ulp is a positive distance between this value and the next nearest [Double] value larger in magnitude. \n * \n * Special Cases: \n * - `NaN.ulp` is `NaN` \n * - `x.ulp` is `+Inf` when `x` is `+Inf` or `-Inf` \n * - `0.0.ulp` is `Double.MIN_VALUE` \n * \n @SinceKotlin("1.2") \n public expect val Double.ulp: Double \n \n /** \n * Returns the [Double] value nearest to this value in direction of positive infinity. \n * \n @SinceKotlin("1.2") \n public expect fun Double.nextUp(): Double \n \n /** \n * Returns the [Double] value nearest to this value in direction of negative infinity. \n * \n @SinceKotlin("1.2") \n public expect fun Double.nextDown(): Double \n \n /** \n * Returns the [Double] value nearest to this value towards the value [to]. \n * \n * Special cases: \n * - `x.nextTowards(y)` is `NaN` if either `x` or `y` are `NaN` \n * - `x.nextTowards(x) == x` \n * \n @SinceKotlin("1.2") \n public expect fun Double.nextTowards(to: Double): Double \n \n /** \n * Rounds this [Double] value to the nearest integer and converts the result to [Int]. \n * \n * Ties are rounded towards positive infinity. \n * \n * Special cases: \n * - `x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE` \n * - `x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE` \n * \n * @throws IllegalArgumentException when this value is `NaN` \n * \n @SinceKotlin("1.2") \n public expect fun Double.roundToInt(): Int \n \n /** \n * Rounds this [Double] value to the nearest integer and converts the result to [Long]. \n * \n * Ties are rounded towards positive infinity. \n * \n * Special cases: \n * - `x.roundToLong() == Long.MAX_VALUE` when `x > Long.MAX_VALUE` \n * - `x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE` \n * \n * @throws IllegalArgumentException when this value is `NaN` \n * \n @SinceKotlin("1.2") \n public expect fun Double.roundToLong(): Long \n \n \n // endregion \n \n // region ===== Float Math ===== \n \n /** \n * Computes the sine of the angle [x] given in radians. \n * \n * Special cases: \n * - `sin(NaN|+Inf|-Inf)` is `NaN` \n * \n @SinceKotlin("1.2") \n public expect fun sin(x: Float): Float \n \n /** \n * Computes the cosine of the angle [x] given in radians. \n * \n * Special cases: \n * - `cos(NaN|+Inf|-Inf)` is `NaN` \n * \n @SinceKotlin("1.2") \n public expect fun cos(x: Float): Float \n \n /** \n * Computes the tangent of the angle [x] given in radians. \n * \n * Special cases: \n * - `tan(NaN|+Inf|-Inf)` is `NaN` \n * \n @SinceKotlin("1.2") \n public expect fun tan(x: Float): Float \n \n /** \n * Computes the arc sine of the value [x]; \n * \n * the returned value is an angle in the range from `-PI/2` to `PI/2` radians. \n * \n * Special cases: \n * -

`asin(x)` is `NaN`, when `abs(x) > 1` or
`x` is `NaN`

```

@SinceKotlin("1.2")\npublic expect fun asin(x: Float): Float\n\n * Computes the arc cosine of the value [x];\n * the returned value is an angle in the range from `0.0` to `PI` radians.\n * Special cases:\n * - `acos(x)` is `NaN`, when `abs(x) > 1` or x is NaN

```

`acos(x)` is `NaN`, when `abs(x) > 1` or `x` is `NaN`

```

@SinceKotlin("1.2")\npublic expect fun acos(x: Float): Float\n\n * Computes the arc tangent of the value [x];\n * the returned value is an angle in the range from `-PI/2` to `PI/2` radians.\n * Special cases:\n * - `atan(NaN)` is `NaN`

```

`atan(NaN)` is `NaN`

```

@SinceKotlin("1.2")\npublic expect fun atan(x: Float): Float\n\n * Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond\n * to the rectangular coordinates `(x, y)` by computing the arc tangent of the value [y] / [x];\n * the returned value is an angle in the range from `-PI` to `PI` radians.\n * Special cases:\n * - `atan2(0.0, 0.0)` is `0.0`\n * - `atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0`\n * - `atan2(-0.0, x)` is `-0.0` for `x > 0` and `-PI` for `x < 0`\n * - `atan2(y, +Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for `-Inf < y < 0`\n * - `atan2(y, -Inf)` is `PI` for `0 < y < +Inf` and `-PI` for `-Inf < y < 0`\n * - `atan2(y, 0.0)` is `PI/2` for `y > 0` and `-PI/2` for `y < 0`\n * - `atan2(+Inf, x)` is `PI/2` for finite `x`\n * - `atan2(-Inf, x)` is `-PI/2` for finite `x`\n * - `atan2(NaN, x)` and `atan2(y, NaN)` is `NaN`

```

`atan2(y: Float, x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun sinh(x: Float): Float\n\n * Computes the hyperbolic sine of the value [x].\n * Special cases:\n * - `sinh(NaN)` is `NaN`\n * - `sinh(+Inf)` is `+Inf`\n * - `sinh(-Inf)` is `-Inf`

```

`sinh(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun cosh(x: Float): Float\n\n * Computes the hyperbolic cosine of the value [x].\n * Special cases:\n * - `cosh(NaN)` is `NaN`\n * - `cosh(+Inf)` is `+Inf`\n * - `cosh(-Inf)` is `-Inf`

```

`cosh(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun tanh(x: Float): Float\n\n * Computes the hyperbolic tangent of the value [x].\n * Special cases:\n * - `tanh(NaN)` is `NaN`\n * - `tanh(+Inf)` is `1.0`\n * - `tanh(-Inf)` is `-1.0`

```

`tanh(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun asinh(x: Float): Float\n\n * Computes the inverse hyperbolic sine of the value [x].\n * The returned value is `y` such that `sinh(y) == x`.\n * Special cases:\n * - `asinh(NaN)` is `NaN`\n * - `asinh(+Inf)` is `+Inf`\n * - `asinh(-Inf)` is `-Inf`

```

`asinh(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun acosh(x: Float): Float\n\n * Computes the inverse hyperbolic cosine of the value [x].\n * The returned value is positive `y` such that `cosh(y) == x`.\n * Special cases:\n * - `acosh(NaN)` is `NaN`\n * - `acosh(x)` is `NaN` when `x < 1`\n * - `acosh(+Inf)` is `+Inf`

```

`acosh(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun atanh(x: Float): Float\n\n * Computes the inverse hyperbolic tangent of the value [x].\n * The returned value is `y` such that `tanh(y) == x`.\n * Special cases:\n * - `atanh(NaN)` is `NaN`\n * - `atanh(x)` is `NaN` when `x > 1` or `x < -1`\n * - `atanh(1.0)` is `+Inf`\n * - `atanh(-1.0)` is `-Inf`

```

`atanh(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun hypot(x: Float, y: Float): Float\n\n * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.\n * Special cases:\n * - returns `+Inf` if any of arguments is infinite\n * - returns `NaN` if any of arguments is `NaN` and the other is not infinite

```

`hypot(x: Float, y: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun sqrt(x: Float): Float\n\n * Computes the positive square root of the value [x].\n * Special cases:\n * - `sqrt(x)` is `NaN` when `x < 0` or `x` is NaN

```

`sqrt(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun exp(x: Float): Float\n\n * Computes Euler's number `e` raised to the power of the value [x].\n * Special cases:\n * - `exp(NaN)` is `NaN`\n * - `exp(+Inf)` is `+Inf`\n * - `exp(-Inf)` is `0.0`

```

`exp(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun expm1(x: Float): Float\n\n * Computes `exp(x) - 1`.\n * This function can be implemented to produce more precise result for [x] near zero.\n * Special cases:\n * - `expm1(NaN)` is `NaN`\n * - `expm1(+Inf)` is `+Inf`\n * - `expm1(-Inf)` is `-1.0`

```

`expm1(x: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun log(x: Float, base: Float): Float\n\n * Computes the logarithm of the value [x] to the given [base].\n * Special cases:\n * - `log(x, b)` is `NaN` if either `x` or `b` are NaN`\n * - `log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0`\n * - `log(+Inf, +Inf)` is `NaN`\n * - `log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1`\n * - `log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1`\n * See also logarithm functions for common fixed bases: [ln], [log10] and [log2].

```

`log(x: Float, base: Float): Float`

```

@SinceKotlin("1.2")\npublic expect fun ln(x: Float): Float\n\n * Computes the natural logarithm (base `E`) of the value [x].\n * Special cases:\n * - `ln(NaN)` is `NaN`\n * - `ln(x)` is `NaN` when `x < 0.0`\n * - `ln(+Inf)` is `+Inf`\n * - `ln(0.0)` is `-Inf`

```

`ln(x: Float): Float`

Float\n\n/**\n * Computes the common logarithm (base 10) of the value [x].\n *\n * @see [ln] function for special cases.\n *\n @SinceKotlin("1.2")\n public expect fun log10(x: Float): Float\n\n/**\n * Computes the binary logarithm (base 2) of the value [x].\n *\n * @see [ln] function for special cases.\n *\n @SinceKotlin("1.2")\n public expect fun log2(x: Float): Float\n\n/**\n * Computes $\ln(a + 1)$.
This function can be implemented to produce more precise result for [x] near zero.
Special cases:
 $-\ln1p(\text{NaN})$ is NaN
 $-\ln1p(x)$ is NaN where $x < -1.0$
 $-\ln1p(-1.0)$ is $-\text{Inf}$
 $-\ln1p(+\text{Inf})$ is $+\text{Inf}$
@see [ln] function
@see [expm1] function
@SinceKotlin("1.2")\n public expect fun ln1p(x: Float): Float\n\n/**\n * Rounds the given value [x] to an integer towards positive infinity.
@return the smallest Float value that is greater than or equal to the given value [x] and is a mathematical integer.
Special cases:
 $\text{ceil}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.
@SinceKotlin("1.2")\n public expect fun ceil(x: Float): Float\n\n/**\n * Rounds the given value [x] to an integer towards negative infinity.
@return the largest Float value that is smaller than or equal to the given value [x] and is a mathematical integer.
Special cases:
 $\text{floor}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.
@SinceKotlin("1.2")\n public expect fun floor(x: Float): Float\n\n/**\n * Rounds the given value [x] to an integer towards zero.
@return the value [x] having its fractional part truncated.
Special cases:
 $\text{truncate}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.
@SinceKotlin("1.2")\n public expect fun truncate(x: Float): Float\n\n/**\n * Rounds the given value [x] towards the closest integer with ties rounded towards even integer.
Special cases:
 $\text{round}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.
@SinceKotlin("1.2")\n public expect fun round(x: Float): Float\n\n/**\n * Returns the absolute value of the given value [x].
Special cases:
 $\text{abs}(\text{NaN})$ is NaN
@see absoluteValue extension property for [Float]
@SinceKotlin("1.2")\n public expect fun abs(x: Float): Float\n\n/**\n * Returns the sign of the given value [x]:
 -1.0 if the value is negative,
zero if the value is zero,
 1.0 if the value is positive
Special case:
 $\text{sign}(\text{NaN})$ is NaN
@SinceKotlin("1.2")\n public expect fun sign(x: Float): Float\n\n/**\n * Returns the smaller of two values.
If either value is NaN , then the result is NaN .
@SinceKotlin("1.2")\n public expect fun min(a: Float, b: Float): Float\n\n/**\n * Returns the greater of two values.
If either value is NaN , then the result is NaN .
@SinceKotlin("1.2")\n public expect fun max(a: Float, b: Float): Float\n\n/**\n * Raises this value to the power [x].
Special cases:
 $b.\text{pow}(0.0)$ is 1.0
 $b.\text{pow}(1.0) == b$
 $b.\text{pow}(\text{NaN})$ is NaN
 $\text{NaN}.\text{pow}(x)$ is NaN for $x != 0.0$
 $b.\text{pow}(\text{Inf})$ is NaN for $\text{abs}(b) == 1.0$
 $b.\text{pow}(x)$ is NaN for $b < 0$ and x is finite and not an integer
@SinceKotlin("1.2")\n public expect fun Float.pow(x: Float): Float\n\n/**\n * Raises this value to the integer power [n].
See the other overload of [pow] for details.
@SinceKotlin("1.2")\n public expect fun Float.pow(n: Int): Float\n\n/**\n * Returns the absolute value of this value.
Special cases:
 $\text{NaN}.\text{absoluteValue}$ is NaN
@see abs function
@SinceKotlin("1.2")\n public expect val Float.absoluteValue: Float\n\n/**\n * Returns the sign of this value:
 -1.0 if the value is negative,
zero if the value is zero,
 1.0 if the value is positive
Special case:
 $\text{NaN}.\text{sign}$ is NaN
@SinceKotlin("1.2")\n public expect val Float.sign: Float\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.
If [sign] is NaN the sign of the result is undefined.
@SinceKotlin("1.2")\n public expect fun Float.withSign(sign: Float): Float\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.
@SinceKotlin("1.2")\n public expect fun Float.withSign(sign: Int): Float\n\n/**\n * Rounds this [Float] value to the nearest integer and converts the result to [Int].
Ties are rounded towards positive infinity.
Special cases:
 $x.\text{roundToInt}() == \text{Int}.\text{MAX_VALUE}$ when $x > \text{Int}.\text{MAX_VALUE}$
 $x.\text{roundToInt}() == \text{Int}.\text{MIN_VALUE}$ when $x < \text{Int}.\text{MIN_VALUE}$
@throws IllegalArgumentException when this value is NaN
@SinceKotlin("1.2")\n public expect fun Float.roundToInt(): Int\n\n/**\n * Rounds this [Float] value to the nearest integer and converts the result to [Long].
Ties are rounded towards positive infinity.
Special cases:
 $x.\text{roundToLong}() == \text{Long}.\text{MAX_VALUE}$ when $x > \text{Long}.\text{MAX_VALUE}$
 $x.\text{roundToLong}() == \text{Long}.\text{MIN_VALUE}$ when x

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< Long.MIN_VALUE` \n * @throws IllegalArgumentException when this value is `NaN` \n
*\n@SinceKotlin("1.2")\npublic expect fun Float.roundToLong(): Long\n\n// endregion\n\n// ===== Integer Math =====\n\n*\n * Returns the absolute value of the given value [n].\n * Special cases:\n * - `abs(Int.MIN_VALUE)` is `Int.MIN_VALUE` due to an overflow\n * @see absoluteValue extension property for [Int]\n*\n@SinceKotlin("1.2")\npublic expect fun abs(n: Int): Int\n\n*\n * Returns the smaller of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun min(a: Int, b: Int): Int\n\n*\n * Returns the greater of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun max(a: Int, b: Int): Int\n\n*\n * Returns the absolute value of this value.\n * Special cases:\n * - `Int.MIN_VALUE.absoluteValue` is `Int.MIN_VALUE` due to an overflow\n * @see abs function\n*\n@SinceKotlin("1.2")\npublic expect val Int.absoluteValue: Int\n\n*\n * Returns the sign of this value:\n * - `1` if the value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n*\n@SinceKotlin("1.2")\npublic expect val Int.sign: Int\n\n*\n * Returns the absolute value of the given value [n].\n * Special cases:\n * - `abs(Long.MIN_VALUE)` is `Long.MIN_VALUE` due to an overflow\n * @see absoluteValue extension property for [Long]\n*\n@SinceKotlin("1.2")\npublic expect fun abs(n: Long): Long\n\n*\n * Returns the smaller of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun min(a: Long, b: Long): Long\n\n*\n * Returns the greater of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun max(a: Long, b: Long): Long\n\n*\n * Returns the absolute value of this value.\n * Special cases:\n * - `Long.MIN_VALUE.absoluteValue` is `Long.MIN_VALUE` due to an overflow\n * @see abs function\n*\n@SinceKotlin("1.2")\npublic expect val Long.absoluteValue: Long\n\n*\n * Returns the sign of this value:\n * - `1` if the value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n*\n@SinceKotlin("1.2")\npublic expect val Long.sign: Int\n\n\n// endregion\n\n\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.js\n\n * Exposes the JavaScript [Math object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/Math) to Kotlin.\n *\n@PublishedApi\n@JsName("Math")\ninternal external object JsMath {\n    val LN2: Double\n    fun abs(value: Double): Double\n    fun acos(value: Double): Double\n    fun asin(value: Double): Double\n    fun atan(value: Double): Double\n    fun atan2(y: Double, x: Double): Double\n    fun cos(value: Double): Double\n    fun sin(value: Double): Double\n    fun exp(value: Double): Double\n    fun max(vararg values: Int): Int\n    fun max(vararg values: Float): Float\n    fun max(vararg values: Double): Double\n    fun min(vararg values: Int): Int\n    fun min(vararg values: Float): Float\n    fun min(vararg values: Double): Double\n    fun sqrt(value: Double): Double\n    fun tan(value: Double): Double\n    fun log(value: Double): Double\n    fun pow(base: Double, exp: Double): Double\n    fun round(value: Number): Double\n    fun floor(value: Number): Double\n    fun ceil(value: Number): Double\n}\n\n\ninternal const val defineTaylorNBound = "\\\"\\\"\\n    var epsilon = 2.220446049250313E-16;\n    var taylor_2_bound = Math.sqrt(epsilon);\n    var taylor_n_bound = Math.sqrt(taylor_2_bound);\n\\\"\\\"\\\"\\n\ninternal const val defineUpperTaylor2Bound = "\\\"\\\"\\\"\\n\n$defineTaylorNBound\n    var upper_taylor_2_bound = 1/taylor_2_bound;\n\\\"\\\"\\\"\\n\ninternal const val defineUpperTaylorNBound = "\\\"\\\"\\\"\\n\n$defineUpperTaylor2Bound\n    var upper_taylor_n_bound = 1/taylor_n_bound;\n\\\"\\\"\\\"\\n\n", "names": [], "mappings": "AAWC,CAXA,yB;EACG,IAAI,OAAO,MAAO,KAAI,UAAW,IAAG,MAAM,IAA1C,C;IACI,MAAM,CAAC,QAAD,EAAW,CAAC,SAAD,CAAX,EAAwB,OAAxB,C;SAEL,IAAI,OAAO,OAAQ,KAAI,QAAvB,C;IACD,OAAO,CAAC,MAAM,QAAP,C;;IAGP,IAAI,OAAQ,GAAE,E;IACd,OAAO,CAAC,IAAI,OAAL,C;;CAEd,CAAC,IAAD,EAAO,kB;EACJ,IAAI,IAAI,M;ECPZ,MAAM,eAAgB,GAAE,a;IACpB,OAAoD,CAA5C,KAAK,QAAQ,CAAC,CAAD,CAAI,IAAG,CAAE,YAAW,SAAW,KAAgB,CAAC,OAAQ,KAAI,c;G;EAGxE,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAE,YAAW,SAAU,IAAG,CAAC,OAAQ,KAAI,c;G;EAGID,MAAM,aAAc,GAAE,a;IACiB,OAAO,CAAE,YAAW,U;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAE,YAAW,WAAY,IAAG,CAAC,OAAQ,KAAI,W;G;EAGpD,MAAM,WAAY,GAAE,a;IAChB,OAAO,CAAE,YAAW,U;G;EAGxB,MAAM,aAAc,GAAE,a;IACiB,OAAO,CAAE,YAAW,Y;G;EAGxB,MAAM,cAAe,

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L,C;YACI,K;UACJ,IAAK,WAAI,iBAAJ,C;;QAET,OAAO,I;O;KAZX,C;IAeA,4B;MAII,eAAe,CAAC,mBAAO,C
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ZX,C;oFAeA,yB;MAAA,wE;MAiOA,+D;MAjOA,yC;QASW,kBAAU,oB;QAIoD,Q;QAAhB,iD;UAAgB,cAAhB,
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,c;;UPu5UA,iB;UACA,IAAK,WAAI,OAAJ,C;;QApOT,OAsOO,W;O;KA/OX,C;sFAYA,yB;MAAA,wE;MAsoA,
+D;MAtoA,yC;QASW,kBAAU,oB;QAsOD,Q;QAAhB,iD;UAAgB,cAAhB,e;UACI,UAvOoD,WAuO1C,CAAY,O
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,OAAJ,C;;QAZOT,OA2OO,W;O;KApPX,C;sFAYA,yB;MAAA,wE;MA2OA,+D;MA3OA,yC;QASW,kBAAU,oB;
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AZ,C;UO9UP,U;UADP,YPi+Ue,Woj+UH,Wpi+UwB,GOj+UxB,C;UACL,IAAI,aAAJ,C;YACH,aP+9UuC,gB;Y
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/UA,iB;UACA,IAAK,WAAI,OAAJ,C;;QAIQT,OAoQO,W;O;KA7QX,C;sFAYA,yB;MAAA,wE;MAoQA,+D;MA
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;UOlhVP,U;UADP,YPohVe,WophVH,WPohVwB,GOphVxB,C;UACL,IAAI,aAAJ,C;YACH,aPkhVuC,gB;YAA5
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C,EAAS,MAAT,C;YACA,e;;YAEA,c;;UP2oVA,iB;UACA,IAAK,WAAI,eAAe,OAAf,CAAJ,C;;QAET,OAAO,W;
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AAJ,C;YACH,aPiqVuC,gB;YAA5B,WOhqVX,aPqgVgC,GOhqVhC,EAAS,MAAT,C;YACA,e;;YAEA,c;;UP6pV
A,iB;UACA,IAAK,WAAI,eAAe,OAAf,CAAJ,C;;QAET,OAAO,W;O;KafX,C;2FAkBA,yB;MAAA,+D;MAAA,s
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B1B,wD;YACI,cAstB+B,SAttBjB,CAAU,KAAV,EAAiB,WAAjB,EAA8B,sBAAK,KAAL,EAA9B,C;YACd,MA
AO,WAAI,WAAJ,C;;UAEX,4BAAO,M;;;QAMtBP,gC;O;KAhBJ,C;gFAMBA,+B;MAOoB,Q;MADhB,UAAe,C;M
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B,UAAe,C;MACf,wBAAGB,SAAhB,gB;QAAGB,cAAA,SAAhB,M;QACI,YAAO,SAAS,OAAT,CAAP,I;;MAEJ,O
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J,C;UACI,MAAM,gCAAyB,2BAAwB,SAAxB,MAAzB,C;;MAId,OAAO,mE;K;IAGX,qC;MAIoB,UAMT,M;MA
NS,2B;MAAhB,OAAgB,cAAhB,C;QAAGB,yB;QACZ,IAAI,eAAJ,C;UACI,MAAM,gCAAyB,2BAAwB,SAAxB,
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+C;MAGBI,OAAO,sBAAS,IAAT,EAAe,IAAf,EAAc,IAAT,C,EAAwD,SAAXD,C;K;IAGX,mC;MAII,aAAa,iBAA
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D,OAAqB,M;K;IAGzB,sC;MAQI,IAAI,QpByJG,YAAQ,CoBzpjf,C;QAAwB,OAAy,SAAL,SAAK,C;MACpC,Y
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,4B;K;IAMiC,8D;MAAA,qB;QAAE,OAAM,aAN,mB;O;K;+CALtC,Y;MACI,YAAqB,8BAAT,qBAAS,C;MACr
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L,UAAU,SAAV,E0EvvBsC,K1EuWbTc,EAD+F,CAC/F,EADoH,CACpH,EADuI,gBACvI,C;M0ErwBI,IAAI,KA
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Q,C;eACnC,uC;YAAmC,2BAAR,OAAQ,C;;YAEA,kBAAR,OAAQ,C;;QATvC,wB;QAYA,SAAS,MAAK,MAAL
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AI,gBAAS,KAAT,C;;K;2CAInB,e;MACI,qB;MAEA,YAAy,kBAAl,cAAO,GAAP,C;MACHb,IAAI,SAAS,IAAb,
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K;6CAE1C,Y;MACI,IAAI,yBAAJ,C;QAAGB,MAAM,oC;K;;IAng1B,mC;MAAA,uD;MAGuB,qB;MA9J3B,yB;M
A+JQ,sBAAM,gB;MAJV,Y;K;IAOA,iD;MAAA,uD;MAAoD,qB;MAIKxD,yB;MAoKc,Q;MAAN,sBAAM,+D;M
AFV,Y;K;IAKA,kE;MAAA,uD;MAQ8D,eAAM,eAAN,EAAuB,UAAvB,Q;MA/KIE,yB;MAGLQ,sBAAM,gB;MA
TV,Y;K;IAYA,sD;MAAA,uD;MAA2C,qBAAK,eAAL,EAASB,GAATB,Q;MAA3C,Y;K;IAEA,+C;MAAA,uD;MA
G2C,qB;MAxL/C,yB;MAyLQ,sBAAM,gB;MACN,KAAK,gBAAO,QAAP,C;MALT,Y;K;IA6EJ,kC;MAKwD,gB
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B,S;MAC/B,OAAO,I;K;6CAGX,Y;MAA+C,gBAAl,iB;K;;IAhCnD,wC;MAAA,uD;MAAmD,eAAM,GAAN,Q;M
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;MAPFgE,6B;K;sCAIhE,Y;MAAuC,0C;K;2CAEvC,mB;MAAwD,uB;;QzJoU3C,Q;QADb,YAAY,C;QACC,sB;Q
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CJ,qB;;QAEJ,sBAAO,E;;;MyJzUiD,0B;K;+CAExD,mB;MAA4D,sB;;QzJ6V5D,eAAoB,0BAAa,SAAb,C;QACpB,
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C,C;MACA,eAAa,UAAU,gBAAV,I;K;iDAGjB,iB;MACI,+DAAkB,KAAIB,EAAYB,YAAzB,C;MAEA,OAAO,w
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D,0C;MAII,ItL8nPO,EsL9nPH,QtLsjPG,YAAQ,CAwER,CsL9nPP,C;QACI,OAAO,4BAAmB,8BAAT,QAAS,CA
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,C;K;;;IIKpC7D,oD;MAQuF,wC;K;IARvF,8CASI,Y;MAAuC,8B;K;IAT3C,gF;I2KY8G,wC;MAAA,mB;QAAE,k
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N,KAAm,EAAwC,QAAxC,EAA+D,QAA/D,C;MAC1B,OAAO,Q;K;IAc+B,yB;K;+CAoBtC,kC;MAOI,IAAI,uCA
A0B,QAAS,UAAvC,C;QAAkD,M;MACID,OAAO,sBAAS,QAAS,WAAIB,e;K;+CAGX,kC;MAQqD,6BAAS,QA
AS,WAAIB,e;K;;;IAYzD,mC;MAA2C,wB;MACvC,eAAoB,C;MACpB,mBAA4B,I;MAC5B,sBAAyC,I;MACz
C,gBAAoC,I;K;gDAEPc,Y;MACI,OAAO,IAAP,C;QACI,QAAM,YAAN,C;eACI,C;YAAA,K;eACA,C;YACI,IA
AI,kCAAE,UAAAnB,C;cACI,eAAQ,C;cACR,OAAO,I;;CAEP,sBAAe,I;;YALvB,K;eAOA,C;YAAc,OAAO,K;eACr
B,C;eAAA,C;YAAgC,OAAO,I;;YAC/B,MAAM,yB;;QAGIB,eAAQ,C;QACR,WAAW,4B;QACX,gBAAW,I;QAC
X,I3HIFR,oBDgDQ,W4HkCY,kB5HICZ,CChDR,C;;K;6C2HsFA,Y;MACU,IASe,I;MATrB,QAAM,YAAN,C;aAC
I,C;aAAA,C;UAAsC,OAAO,qB;aAC7C,C;UACI,eAAQ,C;UACR,OAAO,kCAAe,O;aAE1B,C;UACI,eAAQ,C;UA
CR,aACa,mF;UACb,mBAAy,I;UACZ,OAAO,M;;UAEH,MAAM,yB;;K;uDAItB,Y;MACI,IAAI,CAAC,cAAL,C;
QAAgB,MAAM,6B;;QAA8B,OAAO,W;K;2DAG/D,Y;MAA4C,QAAM,YAAN,C;aACxC,C;UADwC,OAC1B,6B;
aACd,C;UAFwC,OAExB,6BAAsB,sBAAtB,C;;UAFwB,OAGhC,6BAAsB,uCAAoC,YAA1D,C;;K;IAOqC,4E;MA
AA,oB;QACzC,wCAAW,C;QAAX,OACA,yB;O;K;oDALR,+B;MACI,mBAAy,K;MACz,eAAQ,C;MACR,OAA6
C,0CAAtC,c;K;IAUsC,+E;MAAA,oB;QACzC,wCAAW,C;QAAX,OACA,yB;O;K;yDANR,kC;MACI,IAAI,CAA
C,QAAS,UAAAd,C;QAAYB,M;MACzB,sBAAe,Q;MACf,eAAQ,C;MACR,OAA6C,6CAAtC,c;K;2DAMX,kB;M5H
JO,Q;MADP,e4HOI,M5HPJ,C;MACO,Q4HMH,M5HNG,+D;M4HOH,eAAQ,C;K;kGAIR,Y;MAAQ,0C;K;;I3K7K
hB,oD;MAQuF,wC;K;IARvF,8CASI,Y;MAAuC,8B;K;IAT3C,gF;sFAAA,yB;MAAA,kC;MAAA,0C;MAAA,kD;Q
AQuF,wC;O;MARvF,4CASI,Y;QAAuC,8B;O;MAT3C,8E;MAAA,2B;QAQuF,2C;O;KARvF,C;IAiBgE,+C;MAA
A,mB;QAAE,sB;O;K;IALIE,kC;MAKuD,OAAkB,2CAAT,+BAAS,E;K;IAEzE,8B;MAK6D,OAAI,QbksPtD,YAA

Q,CalsP0C,GAAwB,eAAxB,GAAsD,WAAT,QAAS,C;K;IAEnH,yB;MAG8C,kC;K;IAE9C,yB;MAAA,6B;K;uCA
CI,Y;MAA6C,kC;K;2CAC7C,a;MAA4B,kC;K;2CAC5B,a;MAA4B,kC;K;;IAHhC,qC;MAAA,oC;QAAA,mB;;M
AAA,6B;K;oFAMA,yB;MAAA,2D;MAAA,4B;QAM4D,uCAAQ,e;O;KANpE,C;IAGb4F,mH;MAAA,wC;MAAA,
6B;MAAA,yB;MAAA,wC;MAAA,wD;MAAA,kC;K;;;kDAAA,Y;;;;cACxF,eAAe,uBAAa,W;cAC5B,IAAI,QAA
S,UAAb,C;gBACI,gB;gCAAA,sCAAS,QAAT,O;oBAAA,2C;yBAAA,yB;gBAAA,Q;;gBAEA,gB;gCAAA,sCAAS
,iCAAT,O;oBAAA,2C;yBAAA,yB;gBAAA,Q;;;;cAJJ,W;;;cAAA,W;;;;K;IADwF,gE;MAAA,yD;uBAAA
,uG;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IAP5F,4C;MAOmF,gBAAS,uCAAT,C;K;IAGbB,4B;MAAE,OAAA,EA
AG,W;K;IAP3E,8B;MAO8D,4BAAQ,cAAR,C;K;IAUQ,8B;MAAE,OAAA,EAAG,W;K;IAR3E,8B;MAQ8D,4BA
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AYiB,Q;MAFb,YAAY,gB;MACZ,YAAY,gB;MACC,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,KAAM,WAAI,
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AO,iBAAQ,iBAAO,KAAf,C;cACf,WAAkB,WAAP,iBAAO,C;cACIB,YAAgB,IAAI,iBAAO,KAAf,GAAqB,iBA
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;IAT/E,uC;MASmE,gBAAY,kCAAZ,C;K;IAkBhC,0D;MAE/B,wB;QAAA,WAAgC,I;MADhC,0B;MACA,0B;MA
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ACI,gBAAW,I;UACX,iBAAY,C;UACZ,M;;;MAGR,iBAAY,C;K;8DAGhB,Y;MASW,Q;MARP,IAAI,mBAAa,E
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AAY,E;MAEZ,OAAO,yE;K;iEAGX,Y;MACI,IAAI,mBAAa,EAajB,C;QACI,iB;MACJ,OAAO,mBAAa,C;K;;2C
AhC5B,Y;MAAuC,yD;K;;IA2C3C,qD;MAAY,0B;MAAmC,gC;K;IACJ,gF;MAAA,0D;MACnC,gBA Ae,oCAAS,
W;K;iEACxB,Y;MACI,OAAO,6CAAY,aAAS,OAARb,C;K;oEAGX,Y;MACI,OAAO,aAAS,U;K;;8CAPxB,Y;MA
AuC,4D;K;qDAWvC,oB;MACI,OAAO,uBAA4B,eAA5B,EAAsC,kBAAtC,EAAMd,QAAAnD,C;K;;IAUf,4D;MAA
Y,0B;MAAmC,gC;K;IACJ,8F;MAAA,wE;MACnC,gBA Ae,2CAAS,W;MACxB,aAAY,C;K;wEACZ,Y;MAC0C,Q
;MAAtC,OAAO,oDAAY,oBAAmB,iBAAnB,EAAMb,yBAAnB,QAAZ,EAAYC,aAAS,OAAID,C;K;2EAGX,Y;M
ACI,OAAO,aAAS,U;K;qDARxB,Y;MAAuC,mE;K;;IAkB3C,oC;MAAY,0B;K;IAC6C,wE;MACjD,gBA Ae,gCA
AS,W;MACxB,aAAY,C;K;6DACZ,Y;MAC2C,Q;MAAvC,OAAO,iBAAa,oBAAmB,iBAAnB,EAAMb,yBAAnB,
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D;MACI,4B;MACA,4B;MACA,4B;K;IAEuC,sE;MAAA,gD;MACnC,iBAAgB,gCAAU,W;MAC1B,iBAAgB,gCA
AU,W;K;4DAC1B,Y;MACI,OAAO,sCAAU,cAAU,OAAPB,EAA4B,cAAU,OAAtC,C;K;+DAGX,Y;MACI,OAA
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;QACI,MAAM,6B;MACV,OAAO,gCA Ae,O;K;keAG1B,Y;MACI,OAAO,2B;K;+EAGX,Y;MACQ,Q;MAAJ,IAA
I,iEAA2B,KAA/B,C;QACI,oBAAe,I;MAEnB,OAAO,yBAAP,C;QACI,IAAI,CAAC,aAAS,UAAAd,C;UACI,OAAO
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A,6B;MAAA,yB;MAAA,4C;MAAA,kD;MAAA,gD;MAAA,wB;MAAA,yB;MAAA,kC;K;;;yDAAA,Y;;;;kBAGy
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,OAAQ,gBAAW,gCAAZ,IAAyB,aAAS,U;K;wDAG7C,Y;MACI,a;MACA,IAAI,iBAAY,gCAAhB,C;QACI,MAA
M,6B;MACV,qC;MACA,OAAO,aAAS,O;K;;qCAvxB,Y;MAA0B,mD;K;;IAgCA,uC;MAC1B,0B;MACA,oB;M
C3WA,IAAI,ED+WQ,gBAAS,CC/WjB,CAAJ,C;QACI,cD8WsB,yCAAsC,YAAtC,M;QC7WtB,MAAM,gCAAyB,
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Y,aAAS,U;K;;sCAZpC,Y;MAAuC,oD;K;;IASB3C,gD;MACI,0B;MACA,4B;K;IAEuC,0E;MAAA,oD;MACnC,gB
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W,aAAS,O;QACpB,IAAI,wCAAU,IAAV,CAAJ,C;UACI,iBAAY,C;UACZ,gBAAW,I;UACX,M;;MAGR,iBAAY
,C;K;8DAGhB,Y;MAMiB,Q;MALb,IAAI,mBAAa,EAAjB,C;QACI,iB;MACJ,IAAI,mBAAa,CAAjB,C;QACI,MA
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,EAAjB,C;QACI,iB;MACJ,OAAO,mBAAa,C;K;;2CAIC5B,Y;MAAuC,yD;K;;IA2Cb,uC;MAC1B,0B;MACA,oB;
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BAAS,W;MACxB,YAAW,yB;K;2DAEX,Y;MAEI,OAAO,YAAO,CAAP,IAAY,aAAS,UAA5B,C;QACI,aAAS,O;
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,EAAjB,C;QACI,a;MACJ,OAAO,mBAAa,CAAb,IAAkB,aAAS,U;K;;2CAIC1C,Y;MAAuC,yD;K;;IAuCN,+C;MA
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;MAAtE,sB;MAAiC,gC;MACIE,kBAAuB,c;K;6CAEvB,Y;MACI,OAAO,aAAO,UAA d,C;QACI,WAAW,aAAO,O
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,U;K;kCACrE,Y;MAA+B,Q;K;kCAC/B,Y;MAAkC,W;K;gFAEX,Y;MAAQ,Q;K;iCAC/B,Y;MAAkC,W;K;wCACI
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O;KAHhD,C;IAKA,+B;MAC2D,OAAS,aAAT,QAAS,EAAa,eAAQ,YAAY,QAAS,OAAR,CAAR,CAAb,C;K;2F

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AAyC,U;K;IAEIG,kC;MAQI,OAAgB,gBAAT,QAAS,EAAGb,sBAAhB,C;K;sFAGpB,yB;MatBA,uE;MbsBA,gC;
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CA,0C;QarCsC,gBAA3B,mBb2DiB,Qa3DjB,C;Qb2D2B,aS7ElC,W;QT6EA,OS5EO,SliBgD,Q;O;KbqC3D,C;sFA
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1B,GAA+C,mBAAW,CAAX,EAAc,CAAd,C;S;O;MATvD,wC;QAOI,sBAAW,4CAAX,C;O;KAPJ,C;IAmBe,oD;
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C;MAYI,OAA6C,8BAAtC,c;K;8EAZX,yB;MAAA,oE;MAAA,6E;MAYiD,gD;QAAA,oB;UACzC,WAAW,sBAA
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;K;mDAC5E,mB;MAAwE,c;K;uDACxE,e;MAA8D,W;K;+CAC9D,Y;MAAsC,Q;K;+CACtC,Y;MAAyC,8B;K;;I
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X,C;K;IAGa,8C;MACpB,kD;MADqB,wB;K;IACrB,gD;MAAA,oD;MACI,4B;K;;;IADJ,4D;MAAA,2D;QAAA,0C
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AJ,C;K;4EAGX,+C;MAqBI,cAAI,OAAJ,EAAa,KAAb,C;K;IC/FJ,kB;MA6PI,4B;K;+BaToA,Y;MAOiC,6BAAS,E
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,C;;QAEF,OAAO,IAAP,C;UACI,YAAU,e;UACV,IAAW,IAAP,0CAAKB,KAAIB,CAAJ,C;YAA6B,OAAO,K;;K;
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MAFR,mBAAiB,IAAjB,EAAbB,KAAvB,C;MACA,WAAW,QAAQ,I;MACX,IAAS,WAAL,IAAK,CAAL,IAA0B,
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AnC,C;QACT,cAAO,EAAP,GAAY,E;;QAEZ,cAAO,oBA Ae,I;;MAJ1B,Y;MAMA,OAAW,KAAK,KAAT,GAAsB
,SAAN,KAAM,CAAtB,GAAsC,C;K;iCAGjD,Y;MAKqC,6BAAS,EAAT,IAA0B,Q;K;IAWK,oF;MAAA,mB;QAA
E,uBAAa,iBAAb,sBAAqC,eAArC,+BAAqE,aAAM,OAA3E,M;O;K;iDATtE,qC;M1LjLA,IAAI,E0L0LqB,CAAb,
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C,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UAAe,KAAM,O;aArRf,0H;K;yCAiCA,iB;MAOyD,8BAAU,KAAV,E
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R,C;K;+CACTd,uB;MAAmD,OAAA,oBAAc,iBAAQ,IAAR,EAAC,KAA d,C;K;wCAEjE,Y;MAAgC,OAAA,oBAA
c,W;K;gDAC9C,iB;MAA2C,OAAA,oBAAc,kBAAS,KAAT,C;K;gDACzD,uB;MAAuD,OAAA,oBAAc,kBAAS,I
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,iB;MAAiD,OAAA,oBAAc,oBAAW,KAA X,C;K;kDAC/D,uB;MAA+D,OAAA,oBAAc,oBAAW,IAAX,EA AiB,K
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I,E0LuVyD,sBAAQ,IAAR,K1LvVzD,CAAJ,C;QACI,c0LsVyE,+B;Q1LrVzE,MAAM,gCAAyB,OAAQ,WAAjC,C
;;K;I0LsVd,yC;M1LxVI,IAAI,E0LwV6D,QAAQ,I1LxVrE,CAAJ,C;QACI,c0LuV6E,+B;Q1LtV7E,MAAM,gCAA

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mB;;;K;IAGZ,8B;MAOuC,OtL0VG,UsL1VH,oBtL0VG,C;K;IsLxV1C,uC;MASmD,8BAAU,2BAAV,EAAe,KAAf
,C;K;IAEnD,6C;MAUI,sBAAsB,IAAtB,EAA4B,KAA5B,C;MAEA,iBAAiB,ItLwNkB,KsLxNlB,8B;MACjB,kBA
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YtL6T+B,C;K;IsL1T1C,uC;MAWI,IAAA,KAAM,UAAAN,C;QAAMB,MAAM,gCAAyB,uCAAoC,KAA7D,C;;QA
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MtOyB,WtMsOzB,MAAK,CAAL,iBAAN,CgBtQ6C,MAAX,CAAhB,CsLgCvB,C;;UACHC,ItL9CmE,asL8CnE,K
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D,YsM0FD,KtM1FkB,KAAjB,EsM0FO,ItM1FsB,KAA7B,CsM0FD,I3LrH7D,CAAJ,C;QACI,c2LoH6E,+B;Q3Ln
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C,C;;K;I4LpBc,6C;MAScxB,oC;MA/BA,iB;MANA,Y;MACA,Y;MACA,Y;MACA,Y;MACA,Y;MACA,sB;M5LY
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;QyLxHiB,c;;K;qCAGjB,Y;MAGI,QAAQ,Q;MACR,IAAI,IAAO,MAAO,C;MACIB,WAAI,Q;MACJ,WAAI,Q;M
ACJ,WAAI,Q;MACJ,SAAS,Q;MACT,WAAI,E;MACJ,IAAK,IAAO,KAAM,CAAd,GAAsB,EAAtB,GAA8B,MA
AO,C;MACzC,WAAI,C;MACJ,gCAAU,MAAV,I;MACA,OAAO,IAAI,aAAJ,I;K;8CAGX,oB;MACI,OAAU,cAA
V,cAAU,EAAc,QAAd,C;K;IAEd,kC;MAAA,sC;MACI,4B;K;;IADJ,8C;MAAA,6C;QAAA,4B;;MAAA,sC;K;;IA7
BA,gD;MAAA,sD;MACQ,yBAAK,KAAL,EAAy,KAAZ,EAAMB,CAANB,EAAsB,CAAtB,EAA+B,CAAN,KAA
zB,EAAuC,SAAU,EAAX,GAAoB,UAAW,CAArE,C;MADR,Y;K;ICbiD,8C;MACjD,4B;MACA,0C;K;oEADA,Y;
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,Y;MAAQ,2B;K;2DAE1C,gB;MAA+D,YAAK,C;K;mDAEPe,iB;MAAGD,gBAAS,aAAT,IAAMB,SAAS,oB;K;0C
AC5E,Y;MAAkC,SAAE,iBAAU,oBAAZ,C;K;yCAEIC,iB;MACI,OAAO,4CAA+B,kBAaA,KAAM,UAAANB,KAC
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,Q;MAAA,oB;MACpC,iB;QAD8B,OACtB,G;WACR,oD;QAF8B,OAef,SAAL,SAAK,C;WAC5B,6C;QAH8B,O
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;;MAAA,yC;K;;2CArCJ,Y;MAWI,oB;K;2CAXJ,Y;MAeI,gB;K;6CafJ,0B;MAAA,2BAWI,8CAXJ,EAeI,kCafJ,C;
K;yCAAA,Y;MAAA,c;MAWI,yD;MAIA,qD;MAfJ,a;K;uCAAA,iB;MAAA,4IAWI,4CAXJ,IAeI,oCafJ,I;K;ICLA,
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AJ,C;YAAwD,MAAM,sBAAiB,YAAF,mCAAf,C;;;K;mFAZID,Y;MAAQ,kCAAa,CAAb,C;K;+FACU,Y;MAAQ,
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AAM,gCAAYB,OAAQ,WAAjC,C;;MJuiCV,YAAAsB,YAAV,SAAU,C;MACf,IAAI,sEAAqB,SAARb,CAAJ,C;QA
CH,uBAAgB,KAAhB,C;;QAEA,aAAwE,YAA3D,oBAAoB,SAAPB,EAA0B,IAA1B,0CAA2D,C;QACxE,kCAA2
B,MAA3B,C;;MAJJ,W;K;IAgBuB,oC;MAAQ,oE;K;IAOP,sC;MAAQ,sE;K;IAWN,sC;MAAQ,sE;K;IAQV,qC;MA
AQ,qE;K;IAOP,uC;MAAQ,uE;K;IAWN,uC;MAAQ,uE;K;IAQX,qC;MAAQ,qE;K;IAOP,uC;MAAQ,uE;K;IAWN,
uC;MAAQ,uE;K;IAQHb,gC;MAAQ,gE;K;IAOP,kC;MAAQ,kE;K;IAWN,kC;MAAQ,kE;K;IAQX,gC;MAAQ,gE;
K;IAOP,kC;MAAQ,kE;K;IAWN,kC;MAAQ,kE;K;IAQb,8B;MAAQ,8D;K;IAOP,gC;MAAQ,gE;K;IAWN,gC;MA
AQ,gE;K;IAQZ,6B;MAAQ,6D;K;IAOP,+B;MAAQ,+D;K;IAWN,+B;MAAQ,+D;K;yEAG/B,+B;MAIqE,8BAAW,
SAAX,C;K;2EAErE,+B;MAUwE,8BAAW,SAAX,C;K;IAIxE,yC;MACI,aAAa,KAAM,O;MACnB,IAAI,WAAU,C
AAd,C;QAAiB,MAAM,gCAAYB,qBAAzB,C;MACvB,YAAY,C;MACZ,aAAa,gCAAS,K;MACTb,qBAAqB,U;M
ACrB,QAAM,iBAAM,KAAN,CAAN,C;aACI,E;aAAA,E;UAAy,qB;UAAZ,K;;MAEJ,cAAc,QAAQ,C;MACTb,iB
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CV,qBAAM,KAAN,MAAgB,EAAhB,C;QACI,IAAI,mCAAW,MAAf,C;UAAuB,MAAM,+B;QAC7B,sBAAsB,K;QACtB,sBAAsB,K;QACtB,eAA8B,I;QAC9B,OAAO,QAAQ,MAAf,C;UACI,IAAI,iBAAM,KAAN,MAAgB,EAApB,C;YACI,IAAI,mBAAMB,mCAAW,MAAIC,C;cAA0C,MAAM,+B;YACbD,kBAAkB,I;YACIB,Q;;UAeKB,iBA Ae,K;UA+EjD,QAHgC,U;UAIhC,Y;YAAO,eAhFqB,KAgFjB,O;YAAJ,S;cAAc,SAAU,YAhFH,KAgFG,YAAK,C AAL,E;cAAV,OAhFqC,CAAM,kBAAK,EAAL,CAAN,qCAAKB,2C;;;YAgFnC,a;;UAhF7B,gBAAgB,KiB9jCgE, WjB0oClF,UiB1oCkF,EjB+oCrF,CiB/oCqF,C;UjB+jChF,IAAI,SuBrhCgC,YAAU,CvBqhC9C,C;YAAyB,MAAM, +B;UAC/B,gBAAS,SAAU,OAAhB,I;UACqB,cAAU,K;UsBxrCpC,U;UAAA,IAAI,WAAS,CAAT,IAAc,WAAS,iB tBwrCP,KsBxrCO,CAA3B,C;YAAA,StBwrCoB,KsBxrCkB,YAAI,OAAJ,C;;YtBwrCO,MAAM,gCAAyB,qCAAz B,C;;UAA9C,qB;UACA,qB;UACA,WAAW,sBAAsB,QAAtB,EAAgC,eAAhC,C;UACX,IAAI,YAAyB,IAAZ,IAAo B,yBAAY,IAAZ,MAAxB,C;YAA0C,MAAM,gCAAyB,yCAAzB,C;UACbD,WAAW,I;UACX,eAAyB,WAAV,SA AU,EAAQ,EAAR,C;UACzB,IAAI,+CAAgC,WAAW,CAA/C,C;YACI,YAAyB,SiBxkCgE,WjBwkC5C,CiBxkC4C, EjBwkCzC,QiBxkCyC,C;YjBykC5E,4BAA2C,aAAjC,0BAA0B,KAA1B,CAAiC,EAAW,IAAX,CAA3C,C;YACA, 4BAAmD,aAAX,SAA9B,SiB7kCmD,WjB6kC/B,QiB7kC+B,CjB6kCrB,CAAW,EAAW,IAAX,CAAnD,C;;YAEA, 4BAA+C,aAArC,0BAA0B,SAA1B,CAAqC,EAAW,IAAX,CAA/C,C;;aAIZ,c;QACI,MAAM,+B;;QACV,IAAM,c AAN,KAAM,EAAc,KAAd,EAAqB,cAArB,EAAqC,CAArC,Eq/xCH,MAAO,KR+xCmD,SAAS,KAAT,IQ/xCnD, ER+xCmE,cAAe,OQ/xClF,CR+xCJ,EAA4G,IAA5G,CAAN,C;UACI,SAAS,gCAAS,S;;UAiIB,iBAA8B,I;UAC9B, iBAAiB,K;UACjB,kBAAkB,CAAC,O;UACnB,IAAI,WAAW,iBAAM,KAAN,MAAgB,EAA3B,IAAwC,QAAN,K AAM,CAAN,KAAGB,EAAtD,C;YACI,cAAc,I;YACd,IAAI,oCAAW,uBAAX,EAAW,MAAX,CAAJ,C;cAAyB,M AAM,gCAAyB,eAAzB,C;;UAEnC,OAAO,QAAQ,MAAf,C;YACI,IAAI,cAAc,WAAIB,C;cA8CZ,UA7CwC,K;cA 8CxC,Y;gBAAO,mBA9CiB,KA8Cb,O;gBAAJ,W;kBAAc,SA9C4B,UA8CIB,YA9CP,KA8CO,YAAK,GAAL,EA9 CkB,MAAM,E;;;gBA8Cd,iB;;cA9CzB,QA+CT,G;;YA7CK,aAAa,I;YACS,mBAAe,K;YA0CjD,UAHgC,Y;YAIhC ,Y;cAAO,mBA3CqB,KA2CjB,O;cAAJ,W;gBAAc,WAAU,YA3CH,KA2CG,YAAK,GAAL,E;gBAAV,SA3CqC,C AAM,kBAAK,EAAL,CAAN,uCAAKB,oBAAM,E;;;cA2CzC,iB;;YA3C7B,kBAAGB,KiBnmCgE,WjB0oClF,YiB1 oCkF,EjB+oCrF,GiB/oCqF,C;YjBomChF,IAAI,WuB1jCgC,YAAU,CvB0jC9C,C;cAAyB,MAAM,+B;YAC/B,gBA AS,WAAU,OAAhB,I;YACqB,mBAAe,K;YAuChD,UAHgC,Y;YAIhC,Y;cAAO,mBAxCoB,KAwChB,O;cAAJ,W; gBAAc,WAAU,YAxCJ,KAwCI,YAAK,GAAL,E;gBAAV,SaxCoC,CAAM,kBAAK,GAAL,CAAN,mC;;;cAwCh B,iB;;YAxC7B,eAAe,KiBtmCiE,WjB0oClF,YiB1oCkF,EjB+oCrF,GiB/oCqF,C;YjBumChF,gBAAS,QAAS,OAAI B,I;YACA,aAAW,wBAAwB,QAAXB,C;YACX,IAAI,cAAyB,IAAZ,IAAoB,2BAAY,MAAZ,MAAxB,C;cAA0C,M AAM,gCAAyB,yCAAzB,C;YACbD,aAAW,M;YACX,iBAAyB,WAAV,WAAU,EAAQ,EAAR,C;YACzB,IAAI,a AAW,CAAf,C;cACI,cAAyB,WiB7mCgE,WjB6mC5C,CiB7mC4C,EjB6mCzC,UiB7mCyC,C;cjB8mC5E,4BAAyB, aAAT,OAAO,OAAM,CAAS,EAAW,MAAX,CAAzB,C;cACA,4BAAmD,aAAX,SAA9B,WiBlnCmD,WjBknC/B, UiBlnC+B,CjBknCrB,CAAW,EAAW,MAAX,CAAnD,C;cACA,IAAI,QAAQ,MAAZ,C;gBAAoB,MAAM,gCAAy B,mCAAzB,C;;cAE1B,4BAA6B,aAAT,OAAV,WAAU,CAAS,EAAW,MAAX,CAA7B,C;;;MAKhB,OAAW,UA AJ,GAAiB,MAAD,aAAhB,GAA6B,M;K;IAIxC,0C;MACI,aAAa,KAAM,O;MACnB,iBAAiB,C;MACjB,IAAI,SA AS,CAAT,IAAc,YAAyB,IAAZ,mBAAM,CAAN,EAAIB,C;QAAoC,+B;;MACHc,YAAC,SAAS,UAAT,IAAD,IAA wB,E;MAAxB,S;QAA4D,gBAA7B,yBAAkB,iBAAN,KAAM,CAAIB,C;QAA6B,c;;UU8ThD,U;UADhB,IAAI,wC AAsB,mBAA1B,C;YAAqC,aAAO,I;YAAP,e;;UACrB,6B;UAAhB,OAAgB,gBAAhB,C;YAAgB,2B;YAAM,IAAI, CV9T4C,CAAa,kBAAK,EAAL,CAAb,oCU8TjC,OV9TiC,EU8ThD,C;cAAyB,aAAO,K;cAAP,e;;UAC/C,aAAO,I ;;QV/TyD,iB;;MAAhE,S;QAEI,OAAW,iBAAM,CAAN,MAAY,EAAhB,sD;;MAGX,OAAiB,WAAN,KAAM,EA AW,GAAX,CAAV,GAAyC,OAAR,QAAN,KAAM,EAAK,CAAL,CAAQ,CAAzC,GAA6D,OAAO,KAAM,C;K;I AKxE,0D;MAII,QAHgC,U;MAIhC,OAAO,IAAI,gBAAJ,IAJqC,SAIvB,CAAU,iCAAK,CAAL,EAAV,CAArB,C; QAAyC,a;;MAJzC,OiB1oC4F,oBjB0oClF,UiB1oCkF,EjB+oCrF,CiB/oCqF,C;K;IjB4oChG,qD;MACI,QAAQ,U;M ACR,OAAO,IAAI,gBAAJ,IAAc,UAAU,iCAAK,CAAL,EAAV,CAArB,C;QAAyC,a;;MACzC,OAAO,C;K;;;IAM BX,8B;MAA+C,qCAAQ,OAAR,E;K;IAC/C,+B;MAAgD,2CAAS,OAAT,E;K;IAEHd,sC;MAAiD,oBAAS,sBAAG B,CAAhB,CAAT,C;K;IACjD,wC;MAAmD,oBAAU,uBAAiB,CAAjB,CAAD,yBAAuB,CAAvB,EAAT,C;K;IACn D,oD;MAAoE,oBAAU,sBAAGB,CAAhB,CAAD,yBAAsB,iBAAtB,EAAT,C;K;IACpE,0C;MACI,IAAI,sEAAqB, SAArB,CAAJ,C;QAAA,OACI,gBAAgB,KAAhB,C;;QADJ,OAGI,iBAAiB,cAAc,KAAd,CAAjB,C;;K;IAGR,4C; MACI,IAAI,kEAAgC,mBAAhC,CAAJ,C;QAAA,OACI,gBAAgB,cAAc,MAAd,CAAhB,C;;QADJ,OAGI,iBAAw

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VZ,yC;eAWY,E;YAXZ,yC;;YAYoB,MAAM,gCAAyB,yDAaKc,OAAIC,CAAzB,C;;K;IC5F9B,4B;K;;MCqDI,k
C;;IAICA,gC;MAAA,oC;K;6CAUI,Y;MAAwC,OAAA,iCAAoB,U;K;8CAC5D,Y;MAAkC,OAAA,iCAAoB,W;K;I
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D,G;K;;IAbJ,4C;MAAA,2C;QAAA,0B;;MAAA,oC;K;IAkCA,gC;MAAA,oC;K;;;IAAA,4C;MAAA,2C;QAAA,0B
;;MAAA,oC;K;;;qCA2BA,oB;MAW8D,4BAAiB,IAAjB,EAAuB,QAavB,C;K;sCAE9D,oB;MAW+D,wBAAM,Q
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IV,sC;MAAC,gB;K;IAOf,4E;MAAC,4B;MAA6B,8B;MAAGD,sB;K;+DACpG,Y;MAAsC,OAAgC,aAA/B,iBAA
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,+CAAa,gBAAb,EAAwB,iBAAxB,EAAoC,0BAAS,QAAT,CAAPC,C;K;;+CAGtD,Y;MAAmC,+CAAa,WAAb,E
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B;K;mEAC1G,Y;MAAsC,OAAgC,aAA/B,iBAAW,OAAx,GAAoB,gBAAW,EAaw,iBAAW,KAAtB,CAAhC,cA
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1B,mB;K;oCAEA,Y;MAA4B,qB;K;iDAE5B,oB;MAWc,Q;MADV,gBAAGB,QAAS,gBAAO,SAAP,C;MACf,IAA
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Fd,yC;MACI,iBAAiB,QAAS,mB;MAC1B,IAAI,OAAC,oCAAS,CAAT,EAAD,kCAAJ,C;QACI,OAAO,wBAAwB
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GX,+D;MACI,IAAI,QAAS,aAAT,IAA0B,WAAW,UAAx,eAAwB,CAAtD,C;QAA0D,MAAM,gCAAyB,uCAAz
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Ab,C;O;KafvC,C;kFASA,yB;MAAA,gD;MAAA,mB;QAMuC,oBAAa,SAAb,C;O;KANvC,C;8BAQA,Y;MAAyC, OArDD,oBAAL,SAAK,CAAL,iBAqDe,W;K;8BAhWtD,Y;MAAA,c;MAG2D,qD;MAH3D,a;K;4BAAA,iB;MA AA,2IAG2D,oCAH3D,G;K;sEAoWA,yB;MAAA,6B;MAAA,4B;QAWwC,qBAAU,SAAV,C;O;KAXxC,C;wEAY A,yB;MAAA,6B;MAAA,4B;QAWyC,qBAAU,SAAV,C;O;KAXzC,C;wEAYA,yB;MAAA,6B;MAAA,4B;QAUuC ,qBAAK,SAAL,C;O;KAVvC,C;wEAWA,yB;MAAA,6B;MAAA,4B;QAWwC,qBAAK,SAAK,QAAV,C;O;KAXx C,C;uEAaA,yB;MAAA,gD;MAAA,4B;QASyC,oBAAKB,SAAlB,C;O;KATzC,C;wEAUA,yB;MAAA,gD;MAAA, 4B;QAS0C,oBAAa,SAAb,C;O;KAT1C,C;Igc3ZA,4B;MACqB,sB;K;sCAKjB,iB;MAM4C,OhCuXT,SgCvXS,aAA Q,KAAR,ChCuXT,C;K;sCgCrXnC,wB;MAOI,aAAQ,KAAR,IAAiB,KhCyQY,K;K;iFgCrQH,Y;MAAQ,OAAA,Y AAQ,O;K;mCAE9C,Y;MAC6E,8BAAS,YAAT,C;K;IAEvD,mC;MAAC,oB;MACnB,eAAoB,C;K;2CACpB,Y;MA AyB,sBAAQ,YAAM,O;K;wCACvC,Y;MAAoD,Q;MAA9B,IAAI,eAAQ,YAAM,OAAIB,C;QAAA,OhCkWS,SgCl We,aAAM,mBAAN,EAAM,2BAAN,OhCkWF,C;;QgCIW4C,MAAM,2BAAuB,YAAM,WAA7B,C;K;;yCAGrF,m B;MAIS,Q;MAAL,IAAI,eAAC,0EAAD,OAAJ,C;QAAgC,OAAO,K;MAEvC,OAAe,WAAR,YAAQ,EAAS,OhCo PK,KgCpPd,C;K;8CAGnB,oB;MACY,Q;MAA2B,gBAA3B,gE;MAA2B,c;;Qf6nDvB,U;QADhB,IAAI,wCAAsB, mBAA1B,C;UAAqC,aAAO,I;UAAP,e;;QACrB,6B;QAAhB,OAAgB,gBAAhB,C;UAAgB,2B;Ue7nD6B,2Bf6nDR, Oe7nDQ,O;UAAA,W;YAAsB,oBAAR,YAAQ,Ef6nD9B,OjB74CJ,KgChPkC,C;;Uf6nD7C,IAAI,OAAJ,C;YAAyB ,aAAO,K;YAAP,e;;QAC/C,aAAO,I;;Me9nDH,iB;K;kCAGJ,Y;MAAkC,OAAA,IAAK,QAAQ,OAAb,KAAqB,C; K;;IA9CvD,qC;MAAA,mD;MACgC,sBAAK,eAAS,IAAT,CAAL,C;MADhC,Y;K;;mCAPJ,Y;MAAA,OAKqB,o DALrB,M;K;mCAAA,Y;MAAA,c;MAKqB,wD;MALrB,a;K;iCAAA,iB;MAAA,2IAKqB,0CALrB,G;K;8EAwDA, yB;MAAA,uC;MAWoC,wC;QAAA,wB;UAAW,OAAA,aAAK,KAAL,ChC+NV,K;S;O;MgC1OrC,6B;QAWI,OA AO,mBAAU,gCAAS,IAAT,GAAe,sBAaf,CAAV,C;O;KAXX,C;gFACa,oB;MAGkE,e;K;IgmIE5C,wC;MAsBIB,i C;MAtBsD,2BAAgB,KAAhB,EAAuB,YAAvB,EAAqC,CAArC,C;K;kFAC7B,Y;MAAQ,iB;K;yFACD,Y;MAAQ, gB;K;2CAExC,iB;MAA8C,WhOwCoB,YgOxCpB,UhOwCqC,KAAjB,EgOxCX,KhOwCwC,KAA7B,CgOxCpB,K ;MAAA,S;QAAkB,OhOwCE,YgOxCF,KhOwCmB,KAAjB,EgOxCO,ShOwCsB,KAA7B,CgOxCF,K;;MAAIB,W; K;kCAE9C,Y;MAKkC,OhOiCgC,YgOjChC,UhOiCiD,KAAjB,EgOjCxB,ShOiCqD,KAA7B,CgOjChC,I;K;iCAEI C,iB;MAEY,UAAwB,M;MADhC,2CAAuB,kBAAa,KAAM,UAAuB,KACf,2CAAS,KAAM,MAAf,cAAwB,6CAA Q,KAAM,KAAd,QAAxB,CADe,CAAvB,C;K;mCAGJ,Y;MACI,OAAI,cAAJ,GAAe,EAAf,GAAwB,MAAK,UhOy QA,KgOzQL,QAAqB,ShOyQhB,KgOzQL,I;K;mCAE5B,Y;MAAkC,OAAE,UAAF,qBAAU,S;K;IAE5C,+B;MAA A,mC;MACI,aAC8B,cAAU,4BAAK,UAAf,EAA0B,4BAAK,UAA/B,C;K;;IAFIC,2C;MAAA,0C;QAAA,yB;;MA AA,mC;K;;IAYJ,oD;MA4CI,uC;MA4CI,IAAI,SAAQ,CAAZ,C;QAAuB,MAAa,gCAAYB,wBAAzB,C;MACpC,IA AI,SAAQ,WAAZ,C;QAA2B,MAAa,gCAAYB,wEAAzB,C;MAG5C,aAGyB,K;MAEZB,YAGwB,4BAA0B,KAA1 B,EAAiC,YAAjC,EAA+C,IAA/C,C;MAExB,YAGuB,I;K;yCAEvB,Y;MAAgD,mCAAwB,UAAxB,EAA+B,SAA/ B,EAAqC,SAArC,C;K;wCAEhD,Y;MAMqC,OAAI,YAAO,CAAX,GhOvB6B,YgOubf,UhOvBgC,KAAjB,EgOuB P,ShOvBoC,KAA7B,CgOubf,IAAd,GhOvB6B,YgOubG,UhOvBc,KAAjB,EgOuBW,ShOvBkB,KAA7B,CgOuBG ,I;K;uCAErE,iB;MAEY,UAAwB,M;MADhC,iDAA6B,kBAAa,KAAM,UAAuB,KACrB,2CAAS,KAAM,MAAf,c AAwB,6CAAQ,KAAM,KAAd,QAAxB,KAA8C,cAAQ,KAAM,KADvC,CAA7B,C;K;yCAGJ,Y;MACI,OAAI,cA AJ,GAAe,EAAf,GAAwB,OAAM,MAAK,UhOiNN,KgOjNC,QAAqB,ShOiNtB,KgOjNC,IAAN,SAAgD,SAAhD,I; K;yCAE5B,Y;MAAkC,OAAI,YAAO,CAAX,GAAgB,UAAF,qBAAU,SAAV,cAAqB,SAAnC,GAAgD,UAAF,2B AAgB,SAAhB,eAA4B,CAAC,SAAD,IAA5B,C;K;IAEHF,qC;MAAA,yC;K;kEACI,sC;MAQ2F,2BAAgB,UAAhB, EAA4B,QAA5B,EAA5C,IAAtC,C;K;;IAT/F,iD;MAAA,gD;QAAA,+B;;MAAA,yC;K;;IAmBiC,oD;MACjC,sBA A2B,I;MAC3B,iBAAmC,OAAO,CAA1C,GhOvDkE,YgOuDvB,KhOvDsC,KAAjB,EgOuDZ,IhOvDyC,KAA7B,C gOuDrB,KAA7C,GhOvDkE,YgOuDF,KhOvDmB,KAAjB,EgOuDO,IhOvDsB,KAA7B,CgOuDF,K;MACHe,chO4 RmC,SgO5RhB,IhO4RgB,C;MgO3RnC,cAAuB,cAAJ,GAAa,KAAb,GAAwB,mB;K;gDAE3C,Y;MAAkC,qB;K;6 CAEIC,Y;MACI,YAAY,W;MACZ,IAAI,6BAAS,mBAAT,QAAJ,C;QACI,IAAI,CAAC,cAAL,C;UAAc,MAAa,6B ;QAC3B,iBAAU,K;;QAEV,chOjD6C,SgOiD7C,WhOjDuD,KAAK,GgOiDpD,WhOjD+D,KAAx,IAAf,C;;MgOm DjD,OAAO,K;K;;IhNpHU,qB;MAErB,6B;MAFwD,gB;K;IAExD,2B;MAAA,+B;MACI,iBAGoC,a;MAEpC,iBAG oC,c;MAEpC,kBAGmC,C;MAEnC,iBAGkC,E;K;;IANtC,uC;MAAA,sC;QAAA,qB;;MAAA,+B;K;sGAsBA,yB; MjBqRA,WAS6D,wB;MAT7D,+B;MiB7PA,gD;MAxBA,wB;QAM0D,OAYBS,aAAa,IAAK,KAAIB,EAA8B,CjB +P5D,eAAW,oBiBxRyB,KjBwR9B,KAAK,CAAL,UAAAN,CiB/P4D,MAA9B,C;O;KA/BnE,C;sGAQA,yB;Mf8QA,

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T7D,+B;MgBjRA,gD;MARA,wB;QAMyD,OASU,aAAa,IAAK,KAAIB,EAA8B,ChBmR5D,eAAW,oBgB5RwB,K
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N,CiBIP6C,MAAX,CAAhB,C;O;KAXvD,C;4FAGA,yB;MfkPA,aAS6D,0B;MAT7D,+B;MelPA,wB;QAEwD,OA
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hB,C;O;KARvD,C;4FAGA,yB;MhBkQA,kBAS6D,sB;MAT7D,+B;MgBlQA,wB;QAEsD,OAGC,eAAM,IAAK,K
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LvD,C;4FAGA,yB;MAAA,+B;MAAA,wB;QAEuD,sBAAM,IAAK,KAAK,KAAK,KAAM,KAAZ,CAAhB,C;O;K
AFvD,C;8FAIA,yB;MjBuOA,WAS6D,wB;MAT7D,+B;MiBvOA,wB;QAEwD,OASA,eAAM,IAAK,KAAK,UAA
Y,CjBqO/C,eAAW,oBiB9OmB,KjB8OxB,KAAC,CAAL,UAAAN,CiBrO+C,MAAZ,CAAhB,C;O;KAXxD,C;8FAG
A,yB;MfqOA,aAS6D,0B;MAT7D,+B;MerOA,wB;QAEyD,OAMD,eAAM,IAAK,KAAK,UAAZ,CfsO/C,eAAW,o
Be5OoB,Kf4OzB,KAAC,CAAL,YAAN,CetO+C,MAAZ,CAAhB,C;O;KARxD,C;8FAGA,yB;MhBqPA,kBAS6D,s
B;MAT7D,+B;MgBrPA,wB;QAEuD,OAGC,eAAM,IAAK,KAAK,UAAZ,ChByP/C,eAAW,oBgB5PkB,KhB4PvB,
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B;MiB1NA,wB;QAEwD,OASA,eAAM,IAAK,KAAK,UAAZ,CjBwN/C,eAAW,oBiBjOmB,KjBiOxB,KAAC,CA
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hB,C;O;KALxD,C;8FAGA,yB;MAAA,+B;MAAA,wB;QAEwD,sBAAM,IAAK,KAAK,UAAZ,KAAM,KAAZ,CA
AhB,C;O;KAFxD,C;0FAIA,yB;MjB6MA,WAS6D,wB;MAT7D,+B;MiBpMA,8C;MATA,wB;QAEsD,OASA,YA
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C;O;KALtD,C;0FAGA,yB;MAAA,8C;MAAA,wB;QAEsD,mBAAY,IAAZ,EAAB,KAAIB,C;O;KAFtD,C;0FAIA
,yB;MjBgMA,WAS6D,wB;MAT7D,+B;MiB3KA,oD;MARB,wB;QAMsD,OAqBA,eAAe,IAAf,EjB8KjB,eAAW,
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;Me5KA,oD;MAdA,wB;QAMuD,OAcD,eAAe,IAAf,Ef+KjB,eAAW,oBe7LgB,Kf6LrB,KAAC,CAAL,YAAN,Ce/
KiB,C;O;KApBtD,C;0FAOA,yB;MhBsMA,kBAS6D,sB;MAT7D,+B;MgB/LA,oD;MAPA,wB;QAMqD,OAOC,eA
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AA,oD;MAAA,wB;QAMsD,sBA Ae,IAAf,EAaqB,KAArB,C;O;KANtD,C;oGAQA,yB;MjBmKA,WAS6D,wB;M
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DA,wB;QAMkD,OA1DI,YAAZ,IAAZ,EA0DA,KA1DA,C;O;KAoDtD,C;0FAQA,yB;MjBsIA,WAS6D,wB;MAT7
D,+B;MiB3KA,oD;MjB4OJ,0B;MAAA,+B;MiBvMI,wB;QAQ6C,OjBOMP,eAAW,OiBjPK,eAAe,IAAf,EjB8KjB,e
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8HA,aAS6D,0B;MAT7D,+B;Me5KA,oD;Mf6OJ,4B;MAAA,iC;Me/LI,wB;QAQ+C,OfkMP,gBAAY,QelPE,eAAe,
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A,yB;MhBwIA,kBAS6D,sB;MAT7D,+B;MgB/LA,oD;MhBkQJ,6B;MgB3MI,wB;QAQ2C,OhB8MP,cgBvQkB,eA
Ae,IAAf,EhBkMjB,eAAW,oBgBzII,KhByIT,KAAC,CAAL,iBAAN,CgBlMiB,CagMnB,KhBuEW,QAAY,C;O;K

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BkC,qD;MACIC,sBAA2B,I;MAC3B,iBAAmC,kBAAO,CAA1C,GjN/CmE,aiN+CtB,KjN/CwC,KAAIB,EiN+Cb,Ij
N/C2C,KAA9B,CiN+CtB,KAA7C,GjN/CmE,aiN+CH,KjN/CqB,KAAIB,EiN+CM,IjN/CwB,KAA9B,CiN+CH,K;
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C,qB;K;8CAEIC,Y;MACI,YAAAY,W;MACZ,IAAI,6BAAS,mBAAT,QAAJ,C;QACI,IAAI,CAAC,cAAL,C;UAAc,
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B,C;:MiNgDnD,OAAO,K;K;:wEC5Hf,yB;MAAA,8C;MAAA,uB;QAOI,OAAO,MAAM,CAAN,EAAS,CAAT,C;
O;KAPX,C;wEAU A,yB;MAAA,8C;MAAA,uB;QAOI,OAAO,MAAM,CAAN,EAAS,CAAT,C;O;KAPX,C;wEAU
A,yB;MAAA,8C;MAAA,uB;QAOI,OAAO,MAAM,CAAN,EAAS,CAAT,C;O;KAPX,C;wEAU A,yB;MAAA,8C;
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OtB,coH/OsB,C;O;K+G9C3D,C;sGAQA,yB;MAAA,kE;MAAA,4B;QAMsD,OAAQ,sBnO+QzB,cmO/QyB,C;O;K
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A,8C;MnOsUA,6B;MmOtUA,sC;QAa0D,OnOmUnB,cmOnU2B,YnO8N7B,cmO9N6B,EAAAY,QAAZ,CnOmU3B,
C;O;KmOhVvC,C;oFAgBA,yB;MAAA,gD;MAAA,4B;QAM8C,OAAS,anNgOhB,cmNhOgB,C;O;KANvD,C;oGA
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;;QACb,SQkSuC,cRISIC,6BAAM,UQkS0C,KAAAd,CRISvC,C;UAF2C,OAER,6BAAM,U;;UACzC,SQiSuC,cRjSIC
,6BAAM,UQiS0C,KAAAd,CRjSvC,C;YAH2C,OAGR,6BAAM,U;eACzC,4C;YAJ2C,OQwVL,URpVd,uBAAF,CA
AE,CQoVc,C;;YRxVK,OQUY,UAAW,CA8U5B,URjVF,uBAA3B,IAAI,oBAAuB,CQiVE,CA9U4B,MAAK,KAA
W,CRHzB,gCQGyB,MAAX,CAAhB,C;;;K;IRC3D,yB;MAC4C,QAAC,CAAqB,GAaf,UAAP,IAAmC,CAAC,M
AAO,EAAW,IAAJ,EAaf,IAAgC,C;K;IAE/G,0B;MAC8C,OAAC,qBAAO,EAAP,CAAW,WAAZ,GAAYB,IAAZB,
GAAiC,YAAjC,W;K;IAG9C,0B;MAA8C,uBAAC,CAAd,EAAiB,EAAjB,C;K;IAE9C,kC;MACI,IAAI,gBAAK,CA
AT,C;QAAY,OAAS,WAAF,CAAE,EAAS,IAAT,C;MAErB,eAAiB,qBAAO,CAAP,CAAD,yBAAa,IAAb,EAAD,
WAAwB,CAAxB,C;MACf,UAAU,WAAI,sCAAW,IAAX,EAAJ,C;MACV,IAAI,kBAAO,IAAX,C;QACI,uCAAo,
IAAP,E;QACA,4CAAY,CAAZ,E;;MAEJ,OAAGB,WAAT,QAAS,EAAS,IAAT,CAAT,GAA8B,WAAJ,GAAL,EA
AS,IAAT,C;K;I8N1FzC,qC;K;.....

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Eclipse

The following artifacts are EPL.

- * org.eclipse.jetty.orbit:org.eclipse.jdt.core

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- * org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

- * org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- * javax.servlet:javax.servlet-api
- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
- * javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- * java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
- org.ow2.asm:asm

Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec
org.apache.taglibs:taglibs-standard-impl

MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp
org.apache.tomcat:tomcat-jasper
org.apache.tomcat:tomcat-juli
org.apache.tomcat:tomcat-jsp-api
org.apache.tomcat:tomcat-el-api
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-el-api

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The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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1.296 jetty-servlets 9.4.49.v20220914

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* org.eclipse.jetty.orbit:org.eclipse.jdt.core

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* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- * javax.servlet:javax.servlet-api
- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
- * javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- * java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
- org.ow2.asm:asm

Apache

The following artifacts are ASL2 licensed.

- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

MortBay

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org.mortbay.jasper:apache-jsp
org.apache.tomcat:tomcat-jasper
org.apache.tomcat:tomcat-juli
org.apache.tomcat:tomcat-jsp-api
org.apache.tomcat:tomcat-el-api
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-el-api

Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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1.297 jetty-util 9.4.49.v20220914

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Eclipse

The following artifacts are EPL.

* org.eclipse.jetty.orbit:org.eclipse.jdt.core

The following artifacts are EPL and ASL2.

* org.eclipse.jetty.orbit:javafx.security.auth.message

The following artifacts are EPL and CDDL 1.0.

* org.eclipse.jetty.orbit:javafx.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

* javax.servlet:javax.servlet-api

* javax.annotation:javax.annotation-api

* javax.transaction:javax.transaction-api

* javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications

are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

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org.ow2.asm:asm-commons

org.ow2.asm:asm

Apache

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org.apache.taglibs:taglibs-standard-spec

org.apache.taglibs:taglibs-standard-impl

MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el

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org.apache.tomcat:tomcat-el-api

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org.eclipse.jetty.toolchain:jetty-schemas

Assorted

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- * javax.servlet:javax.servlet-api
- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
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org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
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* org.eclipse.jetty.orbit:org.eclipse.jdt.core

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* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- * javax.servlet:javax.servlet-api
- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
- * javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- * java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
- org.ow2.asm:asm

Apache

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- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

MortBay

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- org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper
org.apache.tomcat:tomcat-juli
org.apache.tomcat:tomcat-jsp-api
org.apache.tomcat:tomcat-el-api
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-el-api

Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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1.300 jetty 9.4.49.v20220914

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Eclipse

The following artifacts are EPL.

* org.eclipse.jetty.orbit:org.eclipse.jdt.core

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* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

* javax.servlet:javax.servlet-api

* javax.annotation:javax.annotation-api

* javax.transaction:javax.transaction-api

* javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with

classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

org.ow2.asm:asm-commons

org.ow2.asm:asm

Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec

org.apache.taglibs:taglibs-standard-impl

MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-el-api

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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```
* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-  
jar/net/jpountz/lz4/LZ4JNISafeDecompressor.java  
* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-  
jar/net/jpountz/lz4/LZ4SafeDecompressor.java  
* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-  
jar/net/jpountz/lz4/LZ4Decompressor.java  
* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4UnsafeUtils.java  
*  
/opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/XXHash64.java  
* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-  
jar/net/jpountz/lz4/LZ4JNICompressor.java  
* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4SafeUtils.java
```

* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/XXHashConstants.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/util/UnsafeUtils.java
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 *
 /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/XXHash32.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4Compressor.java
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 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4Exception.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/StreamingXXHash32.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/StreamingXXHash64JNI.java
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 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4FastDecompressor.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4BlockInputStream.java
 *
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 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/XXHash64JNI.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/XXHashFactory.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4ByteBufferUtils.java
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 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4JNI.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/util/SafeUtils.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4UnknownSizeDecompressor.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/XXHashJNI.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/StreamingXXHash64.java
 *
 /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/StreamingXXHash32JNI.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/AbstractStreamingXXHash32Java.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/LZ4JNIFastDecompressor.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/util/Utils.java
 * /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-

jar/net/jpountz/xxhash/XXHash32JNI.java

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* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/lz4/package.html

* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/overview.html

* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/util/package.html

* /opt/cola/permits/1435965234_1665135237.2038426/0/lz4-1-4-0-sources-jar/net/jpountz/xxhash/package.html

1.303 expat 2.1.0-15.el7_9

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1.304 protobuf-java 3.19.6

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Manifest-Version: 1.0
Automatic-Module-Name: com.google.protobuf
Bnd-LastModified: 1664485905970
Build-Jdk: 1.8.0_181-google-v7
Built-By: mkruskal
Bundle-Description: Core Protocol Buffers library. Protocol Buffers are a way of encoding structured data in an efficient yet extensible format.
Bundle-DocURL: <https://developers.google.com/protocol-buffers/>
Bundle-License: <https://opensource.org/licenses/BSD-3-Clause>
Bundle-ManifestVersion: 2
Bundle-Name: Protocol Buffers [Core]
Bundle-SymbolicName: com.google.protobuf
Bundle-Version: 3.19.6
Created-By: Apache Maven Bundle Plugin
Export-Package: com.google.protobuf;version="3.19.6"
Import-Package: sun.misc;resolution:=optional,com.google.protobuf;version="[3.19,4)"
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"
Tool: Bnd-3.0.0.201509101326

Found in path(s):

* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/META-INF/MANIFEST.MF

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* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/timestamp.proto

* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/struct.proto

* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/wrappers.proto
*
/opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/type.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/empty.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/any.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/descriptor.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/duration.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/field_mask.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/compiler/plugin.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/source_context.proto
* /opt/cola/permits/1444789790_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/api.proto

1.305 apache-commons-text 1.10.0

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1.306 netty-codec 4.1.81.Final

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 */
/*
 * Written by Robert Harder and released to the public domain, as explained at
 * https://creativecommons.org/licenses/publicdomain
 */
/**
 * Enumeration of supported Base64 dialects.
 * <p>
 * The internal lookup tables in this class has been derived from
 * <a href="http://iharder.sourceforge.net/current/java/base64/">Robert
 * Harder's Public Domain
 * Base64 Encoder/Decoder</a>.
 */
```

Found in path(s):

```
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/base64/Base64Dialect.java
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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/META-INF/maven/io.netty/netty-codec/pom.xml

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/**

* A decoder that splits the received { @link ByteBuf}s dynamically by the

* value of the length field in the message. It is particularly useful when you

* decode a binary message which has an integer header field that represents the

* length of the message body or the whole message.

*

<p>

* { @link LengthFieldBasedFrameDecoder } has many configuration parameters so

* that it can decode any message with a length field, which is often seen in

* proprietary client-server protocols. Here are some example that will give

* you the basic idea on which option does what.

*

* <h3>2 bytes length field at offset 0, do not strip header</h3>

*

* The value of the length field in this example is <tt>12 (0x0C)</tt> which

* represents the length of "HELLO, WORLD". By default, the decoder assumes

* that the length field represents the number of the bytes that follows the

* length field. Therefore, it can be decoded with the simplistic parameter

* combination.

* <pre>

* lengthFieldOffset = 0

* lengthFieldLength = 2

* lengthAdjustment = 0

* initialBytesToStrip = 0 (= do not strip header)

```

*
* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content
* |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" | | 0x000C | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 0, strip header</h3>
*
* Because we can get the length of the content by calling
* { @link ByteBuf#readableBytes() }, you might want to strip the length
* field by specifying <tt>initialBytesToStrip</tt>. In this example, we
* specified <tt>2</tt>, that is same with the length of the length field, to
* strip the first two bytes.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* <b>initialBytesToStrip</b> = <b>2</b> (= the length of the Length field)
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (12 bytes)
* +-----+-----+ +-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" | | "HELLO, WORLD" |
* +-----+-----+ +-----+
* </pre>
*
* <h3>2 bytes length field at offset 0, do not strip header, the length field
* represents the length of the whole message</h3>
*
* In most cases, the length field represents the length of the message body
* only, as shown in the previous examples. However, in some protocols, the
* length field represents the length of the whole message, including the
* message header. In such a case, we specify a non-zero
* <tt>lengthAdjustment</tt>. Because the length value in this example message
* is always greater than the body length by <tt>2</tt>, we specify <tt>-2</tt>
* as <tt>lengthAdjustment</tt> for compensation.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-2</b> (= the length of the Length field)
* initialBytesToStrip = 0
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Length | Actual

```

```

Content |
* | 0x000E | "HELLO, WORLD" | | 0x000E | "HELLO, WORLD" |
* +-----+-----+-----+-----+
* </pre>
*
* <h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>
*
* The following message is a simple variation of the first example. An extra
* header value is prepended to the message. <tt>lengthAdjustment</tt> is zero
* again because the decoder always takes the length of the prepended data into
* account during frame length calculation.
* <pre>
* <b>lengthFieldOffset</b> = <b>2</b> (= the length of Header 1)
* <b>lengthFieldLength</b> = <b>3</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* | Header 1 | Length | Actual Content |----->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" | | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* </pre>
*
* <h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>
*
* This is an advanced example that shows the case where there is an extra
* header between the length field and the message body. You have to specify a
* positive <tt>lengthAdjustment</tt> so that the decoder counts the extra
* header into the frame length calculation.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* <b>lengthAdjustment</b> = <b>2</b> (= the length of Header 1)
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |----->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO,
* WORLD" |
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,
* strip the first header field and the length field</h3>
*

```


* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java

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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Lz4FrameDecoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/LzfEncoder.java

*

/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Bzip2Constants.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitWriter.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/DecoderResultProvider.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Bzip2MTFAndRLE2StageEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/MessageAggregationException.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Crc32.java

*

/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Bzip2Decoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/FastLzFrameEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-

jar/io/netty/handler/codec/compression/Bzip2BitReader.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2Rand.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/FastLz.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/json/JsonObjectDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2Encoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Lz4FrameEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/SnappyFramedDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/AsciiHeadersEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2BlockDecompressor.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/LzfDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/json/package-info.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Lz4Constants.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2BlockCompressor.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/FastLzFrameDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanAllocator.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageEncoder.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/Bzip2MoveToFrontTable.java
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* under the License.
*/
/*
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* https://creativecommons.org/licenses/publicdomain
*/
/**
* Utility class for {@link ByteBuffer} that encodes and decodes to and from
* Base64 notation.
* <p>
* The encoding and decoding algorithm in this class has been derived from
* Robert Harder's Public Domain
\* Base64 Encoder/Decoder.
*/
```

Found in path(s):

```
*/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/base64/Base64.java
```

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```
*/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/ByteToMessageCodec.java
```

```
*/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/ByteToMessageDecoder.java
```

*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/UnsupportedMessageTypeException.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/ZlibCodecFactory.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalMarshallerProvider.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/LineBasedFrameDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/protobuf/package-info.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/TooLongFrameException.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/PrematureChannelClosureException.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/CachingClassResolver.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/xml/package-info.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/CorruptedFrameException.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/package-info.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/ZlibUtil.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/JdkZlibEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/FixedLengthFrameDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/package-info.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/ReplayingDecoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/Delimiters.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/string/StringDecoder.java

*

/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/MarshallerProvider.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/ZlibEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/MessageToMessageEncoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java

*

/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/MessageToMessageCodec.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/CompressionException.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/MessageAggregator.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/DecompressionException.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/Snappy.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/package-info.java

*

/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingDecoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-

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jar/io/netty/handler/codec/serialization/ReferenceMap.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/string/package-info.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/DecoderResult.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/EncoderException.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/base64/Base64Decoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/JZlibEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/serialization/ClassResolvers.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/LengthFieldPrepender.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/package-info.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/DecoderException.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/MessageToByteEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/serialization/WeakReferenceMap.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/marshalling/LimitingByteInput.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/serialization/SoftReferenceMap.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/marshalling/DefaultUnmarshallerProvider.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/string/StringEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/marshalling/ContextBoundUnmarshallerProvider.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/bytes/package-info.java

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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/ZlibDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/MessageToMessageDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/base64/package-info.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/ZlibWrapper.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/serialization/ClassResolver.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/base64/Base64Encoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/JZlibDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/CodecException.java

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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufDecoderNano.java

*

/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/ProtocolDetectionState.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-

jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufVarint32FrameDecoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufVarint32LengthFieldPrepender.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/ProtocolDetectionResult.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/DefaultHeadersImpl.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/CharSequenceValueConverter.java
*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/ValueConverter.java
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jar/io/netty/handler/codec/compression/ZstdOptions.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/BrotliDecoder.java

*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/ZstdEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/BrotliEncoder.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/BrotliOptions.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/CompressionOptions.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/GzipOptions.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/ZstdConstants.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/StandardCompressionOptions.java

*
/opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/compression/DeflateOptions.java
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jar/io/netty/handler/codec/Headers.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/EmptyHeaders.java
* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-
jar/io/netty/handler/codec/DefaultHeaders.java
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*

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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/compression/CompressionUtil.java

*

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* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/string/LineSeparator.java

* /opt/cola/permits/1450558535_1666656222.1527734/0/netty-codec-4-1-81-final-sources-jar/io/netty/handler/codec/DateFormatter.java

1.307 netty-transport-native-unix-common

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* /opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/io/netty/channel/unix/GenericUnixChannelOption.java
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* /opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/io/netty/channel/unix/PreferredDirectByteBufAllocator.java

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/opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/netty_unix_buffer.h

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/opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/io/netty/channel/unix/IovArray.java
* /opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/io/netty/channel/unix/UnixChannelOption.java

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* /opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/netty_unix_limits.c
*
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* /opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/io/netty/channel/unix/PeerCredentials.java

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/opt/cola/permits/1450558542_1666656289.5495949/0/netty-transport-native-unix-common-4-1-81-final-sources-1-jar/io/netty/channel/unix/ServerDomainSocketChannel.java

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1-jar/io/netty/channel/unix/FileDescriptor.java
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1.308 netty-transport 4.1.81.Final

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*/

/**

* Handles an I/O event or intercepts an I/O operation, and forwards it to its next handler in
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*

* <h3>Sub-types</h3>

* <p>

* { @link ChannelHandler} itself does not provide many methods, but you usually have to implement one of its
 subtypes:

*

* { @link
 ChannelInboundHandler} to handle inbound I/O events, and

* { @link ChannelOutboundHandler} to handle outbound I/O operations.

*

* </p>

* <p>

* Alternatively, the following adapter classes are provided for your convenience:

*

* { @link ChannelInboundHandlerAdapter} to handle inbound I/O events,

* { @link ChannelOutboundHandlerAdapter} to handle outbound I/O operations, and

* { @link ChannelDuplexHandler} to handle both inbound and outbound events

*

* </p>

* <p>

* For more information, please refer to the documentation of each subtype.

* </p>

*

* <h3>The context object</h3>

* <p>

* A { @link ChannelHandler} is provided with a { @link ChannelHandlerContext}
 * object. A { @link ChannelHandler} is supposed to interact with the
 * { @link ChannelPipeline} it belongs to via a context object. Using the
 * context object, the { @link ChannelHandler} can pass events upstream or
 * downstream, modify the pipeline dynamically,

or store the information

* (using {[@link AttributeKey](#)s) which is specific to the handler.

*

*

State management

*

* A [ChannelHandler](#) often needs to store some stateful information.

* The simplest and recommended approach is to use member variables:

*

* public interface Message {

* // your methods here

* }

*

* public class DataServerHandler extends {[SimpleChannelInboundHandler](#)} & [Message](#) {

*

* **private boolean loggedIn;**

*

* {`@Override`}

* public void channelRead0({[ChannelHandlerContext](#)} ctx, [Message](#) message) {

* if (message instanceof [LoginMessage](#)) {

* authenticate(([LoginMessage](#)) message);

* **loggedIn = true;**

* } else (message instanceof [GetDataMessage](#)) {

* if (**loggedIn**) {

* ctx.writeAndFlush(fetchSecret(([GetDataMessage](#)) message));

* } else {

* fail();

* }

*

}

*

* ...

*

*

* Because the handler instance has a state variable which is dedicated to

* one connection, you have to create a new handler instance for each new

* channel to avoid a race condition where a unauthenticated client can get

* the confidential information:

*

* // Create a new handler instance per channel.

* // See {[ChannelInitializer#initChannel\(Channel\)](#)}.

* public class DataServerInitializer extends {[ChannelInitializer](#)} & {[Channel](#)} {

* {`@Override`}

* public void initChannel({[Channel](#)} channel) {

* channel.pipeline().addLast("handler", **new DataServerHandler()**);

* }

*

*

*

```

*
* <h4>Using { @link AttributeKey}s</h4>
*
* Although it's recommended to use member variables to store the state of a
* handler, for some reason you might not want to create many handler instances.
* In such a case, you can use { @link AttributeKey}s which is provided by
* { @link ChannelHandlerContext}:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* { @code @Sharable}
* public class DataServerHandler extends { @link SimpleChannelInboundHandler}&lt;Message&gt; {
*     private final { @link AttributeKey}&lt;Boolean&gt; auth =
*         { @link AttributeKey#valueOf(String) AttributeKey.valueOf("auth")};
*
*     { @code @Override}
*     public void channelRead({ @link ChannelHandlerContext} ctx, Message message) {
*         { @link Attribute}&lt;Boolean&gt; attr = ctx.attr(auth);
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) o);
*             <b>attr.set(true)</b>;
*         } else (message instanceof GetDataMessage) {
*             if (<b>Boolean.TRUE.equals(attr.get())</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) o));
*             } else {
*                 fail();
*             }
*         }
*     }
* }
* ...
* </pre>
* Now that the
state of the handler is attached to the { @link ChannelHandlerContext}, you can add the
* same handler instance to different pipelines:
* <pre>
* public class DataServerInitializer extends { @link ChannelInitializer}&lt;Channel&gt; {
*
*     private static final DataServerHandler <b>SHARED</b> = new DataServerHandler();
*
*     { @code @Override}
*     public void initChannel({ @link Channel} channel) {
*         channel.pipeline().addLast("handler", <b>SHARED</b>);
*     }
* }
* </pre>

```

```

*
*
* <h4>The { @code @Sharable } annotation</h4>
* <p>
* In the example above which used an { @link AttributeKey },
* you might have noticed the { @code @Sharable } annotation.
* <p>
* If a { @link ChannelHandler } is annotated with the { @code @Sharable }
* annotation, it means you can create an instance of the handler just once and
* add it to one or more { @link ChannelPipeline }s multiple times without
* a race condition.
* <p>
* If this annotation is not specified, you have to create
  a new handler
* instance every time you add it to a pipeline because it has unshared state
* such as member variables.
* <p>
* This annotation is provided for documentation purpose, just like
* <a href="http://www.javaconcurrencyinpractice.com/annotations/doc/">the JCIP annotations</a>.
*
* <h3>Additional resources worth reading</h3>
* <p>
* Please refer to the { @link ChannelHandler }, and
* { @link ChannelPipeline } to find out more about inbound and outbound operations,
* what fundamental differences they have, how they flow in a pipeline, and how to handle
* the operation in your application.
*/

```

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```

* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/ChannelHandler.java

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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/DefaultSelectStrategy.java

*

/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/ChannelInboundInvoker.java

* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/bootstrap/BootstrapConfig.java

* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/DefaultSelectStrategyFactory.java

* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/SelectStrategyFactory.java

* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/group/VoidChannelGroupFuture.java

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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/WriteBufferWaterMark.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/SelectStrategy.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/PreferHeapByteBufAllocator.java
*
/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/socket/DuplexChannel.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/bootstrap/ServerBootstrapConfig.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/nio/NioChannelOption.java
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jar/io/netty/channel/pool/ChannelPool.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/ChannelHealthChecker.java
*
/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/MaxBytesRecvByteBufAllocator.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/MaxMessagesRecvByteBufAllocator.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/ChannelPoolHandler.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/FixedChannelPool.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/ChannelPoolMap.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/package-info.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/AbstractChannelPoolHandler.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/SimpleChannelPool.java
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/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/DefaultMaxBytesRecvByteBufAllocator.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/pool/AbstractChannelPoolMap.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownException.java
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/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/PendingBytesTracker.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/oio/OioDatagramChannelConfig.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/oio/DefaultOioDatagramChannelConfig.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/internal/package-info.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/bootstrap/FailedChannel.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/ChannelInputShutdownReadComplete.java
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*

/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/EventLoopTaskQueueFactory.java

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```

```
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/ChannelOutboundHandlerAdapter.java
```

```
*
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/FixedRecvByteBufAllocator.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/local/LocalEventLoopGroup.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/nio/AbstractNioChannel.java
```

```
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
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jar/io/netty/bootstrap/Bootstrap.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/ServerSocketChannelConfig.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/DefaultChannelConfig.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/DatagramChannel.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/oio/package-info.java
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/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/ChannelInboundHandlerAdapter.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/group/ChannelGroupFuture.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/oio/AbstractOioChannel.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/oio/AbstractOioMessageChannel.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/bootstrap/package-info.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/ChannelConfig.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/DefaultEventLoop.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/ServerSocketChannel.java

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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
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/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/FailedChannelFuture.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/embedded/EmbeddedEventLoop.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/socket/InternetProtocolFamily.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/ThreadPerChannelEventLoop.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/CombinedChannelDuplexHandler.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/VoidChannelPromise.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/ChannelMetadata.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-


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jar/io/netty/channel/embedded/EmbeddedSocketAddress.java
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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
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/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/ChannelProgressivePromise.java

* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-jar/io/netty/channel/group/DefaultChannelGroup.java

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* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/ChannelId.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/ChannelOutboundBuffer.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/bootstrap/ChannelFactory.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/socket/oio/OioServerSocketChannelConfig.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/ChannelHandlerAdapter.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/DefaultAddressedEnvelope.java
*
/opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/group/ChannelGroup.java
* /opt/cola/permits/1450558549_1666656258.7692654/0/netty-transport-4-1-81-final-sources-
jar/io/netty/channel/DefaultMessageSizeEstimator.java

```

1.309 netty-transport-classes-epoll

4.1.81.Final

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 */
/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
 */

```

Found in path(s):

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollServerSocketChannelConfig.java

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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollEventLoopGroup.java

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/Epoll.java

*

/opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollSocketChannel.java

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollTcpInfo.java

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollDatagramChannel.java

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollChannelOption.java

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/NativeDatagramPacketArray.java

* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollEventLoop.java

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*

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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/package-info.java

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 */
/**
 * Set the { @code TCP_MD5SIG } option on the socket. See { @code linux/tcp.h } for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
 */
/**
 * Set the { @code TCP_QUICKACK } option on the socket.
 * See <a href="https://linux.die.net/man/7/tcp">TCP_QUICKACK</a>
 * for more details.
 */
```

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```
* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/SegmentedDatagramPacket.java

*

/opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/EpollDomainDatagramChannel.java

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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-jar/io/netty/channel/epoll/LinuxSocket.java

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jar/io/netty/channel/epoll/EpollServerDomainSocketChannel.java
* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/TcpMd5Util.java
*
/opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/EpollMode.java
* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorStreamingHandle.java
* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/AbstractEpollStreamChannel.java
* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/EpollDomainSocketChannel.java
* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/EpollServerChannelConfig.java
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/opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
jar/io/netty/channel/epoll/EpollDomainSocketChannelConfig.java
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* /opt/cola/permits/1450558598_1666656209.0910616/0/netty-transport-classes-epoll-4-1-81-final-sources-
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io.netty.util.internal.Hidden$NettyBlockHoundIntegration
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/FutureListener.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/ResourceLeakDetector.java
*
```

/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/ConcurrentSet.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/ImmediateEventExecutor.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/AppendableCharSequence.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/AbstractReferenceCounted.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/ResourceLeak.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/ProgressiveFuture.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/AbstractEventExecutor.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/ReferenceCountUtil.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/DefaultFutureListeners.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/AbstractFuture.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/RecyclableArrayList.java
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/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/ConstantPool.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/AbstractEventExecutorGroup.java
*

/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/Promise.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/ProgressivePromise.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/PlatformDependent0.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/NoOpTypeParameterMatcher.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/DefaultProgressivePromise.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/EmptyArrays.java
*
/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/PendingWrite.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/TypeParameterMatcher.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/ReadOnlyIterator.java
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- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/OrderedEventExecutor.java
- *
- /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/RejectedExecutionHandlers.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/PromiseCombiner.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/UnstableApi.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/DefaultEventExecutorChooserFactory.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/NativeLibraryUtil.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/MacAddressUtil.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/UnaryPromiseNotifier.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/IntSupplier.java
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- /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/ResourceLeakDetectorFactory.java
- * /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/DomainNameMappingBuilder.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/NonStickyEventExecutorGroup.java

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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/META-
```

INF/maven/io.netty/netty-common/pom.xml

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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/Cleaner.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/CleanerJava9.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/concurrent/FastThreadLocalRunnable.java

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jar/io/netty/util/internal/logging/InternalLogger.java

*

/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/logging/JdkLogger.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/logging/CommonsLogger.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/logging/Log4JLogger.java

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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/ThreadExecutorMap.java

*

/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/svm/package-info.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/svm/PlatformDependent0Substitution.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/Hidden.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/ObjectPool.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/ReferenceCountUpdater.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/svm/UnsafeRefArrayAccessSubstitution.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/svm/PlatformDependentSubstitution.java

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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/LongCollections.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/ByteCollections.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/CharObjectMap.java
*
/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/LongObjectHashMap.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/LongObjectMap.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/ShortObjectMap.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/ByteObjectHashMap.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/ObjectUtil.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/IntObjectHashMap.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/CharCollections.java
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jar/io/netty/util/collection/CharObjectHashMap.java
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jar/io/netty/util/collection/ShortCollections.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/collection/ByteObjectMap.java

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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java  
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeLongArrayAccess.java  
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeJvmInfo.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MessagePassingQueueUtil.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/LinkedQueueNode.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedArrayQueue.java
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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/SupportsIterator.java
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jar/io/netty/util/internal/shaded/org/jctools/queues/MpscGrowableArrayQueue.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCArrayQueue.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/MpscCompoundQueue.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
*
/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeAccess.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/QueueFactory.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/BaseLinkedQueue.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java
* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcUnboundedXaddChunk.java
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*/opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/internal/ThreadLocalRandom.java

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
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<artifactId>jctools-core</artifactId>
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<groupId>org.jctools</groupId>
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<name>Java Concurrency Tools Core Library</name>
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```
<description>Java Concurrency Tools Core Library</description>
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<packaging>bundle</packaging>
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```
<dependency>
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</dependencies>
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<build>
```

```
<plugins>
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<plugin>
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```

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```

```
<version>3.0.0-M3</version>
```

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    <include>*</include>
  </includes>
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</plugin>
<plugin>
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  <artifactId>maven-bundle-plugin</artifactId>
  <version>4.2.1</version>
  <extensions>>true</extensions>
  <configuration>
    <instructions>
      <Import-Package>sun.misc;resolution:=optional</Import-Package>
    </instructions>
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</plugin>
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-source-plugin</artifactId>
  <version>3.2.0</version>
  <executions>
    <execution>
      <id>attach-sources</id>
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  <version>3.1.1</version>
  <configuration>
    <additionalOptions>
      <additionalOption>-Xdoclint:none</additionalOption>
    </additionalOptions>
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  </configuration>
  <executions>
    <execution>
      <id>attach-javadocs</id>
      <goals>
        <goal>jar</goal>
      </goals>
    </execution>
  </executions>

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</executions>
</plugin>
</plugins>
</build>

<distributionManagement>
  <repository>
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    <name>jctools-jctools</name>
    <url>https://api.bintray.com/maven/jctools/jctools/jctools-core/?publish=1</url>
  </repository>
</distributionManagement>

<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>

<licenses>
  <license>
    <name>Apache
License, Version 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    <distribution>repo</distribution>
  </license>
</licenses>

<scm>
  <url>https://github.com/JCTools/JCTools</url>
  <connection>scm:git:https://github.com/JCTools/JCTools</connection>
  <tag>HEAD</tag>
</scm>

<developers>
  <developer>
    <url>https://github.com/nitsanw</url>
  </developer>
  <developer>
    <url>https://github.com/mjpt777</url>
  </developer>
  <developer>
    <url>https://github.com/RichardWarburton</url>
  </developer>
  <developer>
    <url>https://github.com/kay</url>
  </developer>
  <developer>
    <url>https://github.com/franz1981</url>
  </developer>
</developers>
```



```

<prerequisites>
  <maven>3.5.0</maven>
</prerequisites>

<properties>
  <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
  <java.version>1.6</java.version>
  <java.test.version>1.8</java.test.version>

  <maven.compiler.source>${java.version}</maven.compiler.source>
  <maven.compiler.target>${java.version}</maven.compiler.target>
  <maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
  <maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

  <hamcrest.version>1.3</hamcrest.version>
  <junit.version>4.12</junit.version>
  <guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>

```

Found

in path(s):

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

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* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/NetUtilSubstitutions.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/NetUtilInitializations.java

* /opt/cola/permits/1450558626_1677315038.3064747/0/netty-common-4-1-81-final-sources-jar/io/netty/util/DomainWildcardMappingBuilder.java

1.311 netty-handler 4.1.81.Final

1.311.1 Available under license :

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Found in path(s):

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/flow/FlowControlHandler.java

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/META-

INF/maven/io.netty/netty-handler/pom.xml

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/util/SelfSignedCertificate.java

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/AbstractSniHandler.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/ocsp/package-info.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/SniCompletionEvent.java

*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/SslCloseCompletionEvent.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ConscryptAlpnSslEngine.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OptionalSslHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/SslCompletionEvent.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslUtils.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/SslClientHelloHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/Conscrypt.java
*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslEngine.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/PcapWriter.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/EthernetPacket.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/package-info.java
*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/UDPPacket.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/PcapHeaders.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/IPPacket.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/TCPpacket.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/pcap/PcapWriteHandler.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/flow/package-info.java
*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/Java8SslUtils.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/PemValue.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/flush/package-info.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/PemX509Certificate.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/traffic/GlobalChannelTrafficShapingHandler.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionId.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/BouncyCastleAlpnSslUtils.java

*

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jar/io/netty/handler/ssl/OpenSslClientSessionCache.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/GroupsConverter.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/SslProtocols.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/BouncyCastle.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionCache.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/AsyncRunnable.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslAsyncPrivateKeyMethod.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslContextOption.java

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/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/Ciphers.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/SslContextOption.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/BouncyCastleAlpnSslEngine.java
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jar/io/netty/handler/stream/ChunkedStream.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/timeout/IdleStateHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/stream/ChunkedWriteHandler.java
*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/timeout/TimeoutException.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/util/package-info.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/timeout/ReadTimeoutException.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/timeout/package-info.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/SslHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/timeout/IdleStateEvent.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/logging/LogLevel.java
*
```


/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/logging/package-info.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/timeout/WriteTimeoutException.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/logging/LoggingHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/stream/ChunkedInput.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/stream/ChunkedFile.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/stream/ChunkedNioFile.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/timeout/WriteTimeoutHandler.java
*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/package-info.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/timeout/IdleState.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/stream/package-info.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/NotSslRecordException.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/stream/ChunkedNioStream.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/timeout/ReadTimeoutHandler.java
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jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ipfilter/UniqueIpFilter.java
*
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslServerContext.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/CipherSuiteConverter.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java
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jar/io/netty/handler/ssl/OpenSslContext.java
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jar/io/netty/handler/ssl/util/LazyX509Certificate.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/SslContext.java
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jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionContext.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslSessionStats.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/JdkSslServerContext.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/JdkSslClientContext.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ipfilter/IpFilterRuleType.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/BouncyCastleSelfSignedCertGenerator.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java
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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/JdkApplicationProtocolNegotiator.java
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*

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslX509KeyManagerFactory.java

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/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslCachingX509KeyManagerFactory.java

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslCertificateCompressionAlgorithm.java

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java

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/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/traffic/TrafficCounter.java

* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/traffic/package-info.java

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- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/SimpleKeyManagerFactory.java
- *
- /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/address/DynamicAddressConnectHandler.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/KeyManagerFactoryWrapper.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslPrivateKeyMethod.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/SslMasterKeyHandler.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/TrustManagerFactoryWrapper.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/PseudoRandomFunction.java

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Found in path(s):

- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ipfilter/IpSubnetFilter.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/address/ResolveAddressHandler.java
- *
- /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ipfilter/IpSubnetFilterRuleComparator.java
- * /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/SslHandshakeTimeoutException.java

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/SslClosedEngineException.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactoryBuilder.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/logging/ByteBufFormat.java
```

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Found in path(s):

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/META-INF/native-
image/io.netty.handler.native-image.properties
```

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```
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-
jar/io/netty/handler/ssl/OpenSslCertificateCompressionConfig.java
```

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* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolAccessor.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/OpenSslSessionTicketKey.java
*
/opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolNegotiationHandler.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ClientAuth.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/util/LazyJavaxX509Certificate.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/SslContextBuilder.java
* /opt/cola/permits/1450558634_1666656304.8194156/0/netty-handler-4-1-81-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolNames.java

1.312 netty-resolver 4.1.81.Final

1.312.1 Available under license :

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* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/HostsFileEntries.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/ResolvedAddressTypes.java

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* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/AbstractAddressResolver.java

*

/opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/HostsFileEntriesResolver.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/InetSocketAddressResolver.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/DefaultAddressResolverGroup.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/InetNameResolver.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/CompositeNameResolver.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/AddressResolver.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/HostsFileParser.java

* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-

jar/io/netty/resolver/DefaultNameResolver.java

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* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/NameResolver.java
* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/AddressResolverGroup.java
* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/SimpleNameResolver.java
*

/opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/NoopAddressResolver.java
* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/package-info.java
* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/NoopAddressResolverGroup.java

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* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-
jar/io/netty/resolver/RoundRobinInetAddressResolver.java

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* /opt/cola/permits/1450558570_1666656275.1979263/0/netty-resolver-4-1-81-final-sources-jar/META-INF/maven/io.netty/netty-resolver/pom.xml
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```

1.313 kotlin 1.6.21

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Version.kt", "src/kotlin/util/Lateinit.kt", "src/kotlin/util/Lazy.kt", "src/kotlin/util/Numbers.kt", "src/kotlin/util/Suspend
.kt", "src/kotlin/util/Tuples.kt", "unsigned/src/kotlin/UIntRange.kt", "unsigned/src/kotlin/UIterators.kt", "unsigned/src/k
otlin/ULongRange.kt", "unsigned/src/kotlin/UMath.kt", "unsigned/src/kotlin/UNumbers.kt", "unsigned/src/kotlin/UPr
ogressionUtil.kt", "unsigned/src/kotlin/UStrings.kt", "unsigned/src/kotlin/annotations/Unsigned.kt", "common/src/kotl
in/MathH.kt"], "sourcesContent": ["(function
(root, factory) {\n if (typeof define === 'function' && define.amd) {\n define('kotlin', ['exports'], factory);\n
}\n else if (typeof exports === 'object') {\n factory(module.exports);\n }\n else {\n root.kotlin = {};\n
factory(root.kotlin);\n }\n}(this, function (Kotlin) {\n var _ = Kotlin;\n\n insertContent();\n});\n", "/*\n *
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is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\nKotlin.isBooleanArray = function (a) {\n return (Array.isArray(a) || a instanceof Int8Array) && a.\$type\$
=== \"BooleanArray\"\n};\n\nKotlin.isByteArray = function (a) {\n return a instanceof Int8Array && a.\$type\$
!=== \"BooleanArray\"\n};\n\nKotlin.isShortArray = function (a) {\n return a instanceof
Int16Array\n};\n\nKotlin.isCharArray = function (a) {\n return a instanceof Uint16Array
&& a.\$type\$ === \"CharArray\"\n};\n\nKotlin.isIntArray = function (a) {\n return a instanceof
Int32Array\n};\n\nKotlin.isFloatArray = function (a) {\n return a instanceof
Float32Array\n};\n\nKotlin.isDoubleArray = function (a) {\n return a instanceof
Float64Array\n};\n\nKotlin.isLongArray = function (a) {\n return Array.isArray(a) && a.\$type\$ ===

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"LongArray"\n};\n\nKotlin.isArray = function (a) {\n  return Array.isArray(a) &&
!a.$type$;\n};\n\nKotlin.isArrayish = function (a) {\n  return Array.isArray(a) ||
ArrayBuffer.isView(a);\n};\n\nKotlin.arrayToString = function (a) {\n  if (a === null) return "null"\n  var
toString = Kotlin.isCharArray(a) ? String.fromCharCode : Kotlin.toString;\n  return "[" +
Array.prototype.map.call(a, function(e) { return toString(e); }).join(", ") + "]";\n};\n\nKotlin.arrayDeepToString
= function (arr) {\n  return Kotlin.kotlin.collections.contentDeepToStringImpl(arr);\n};\n\nKotlin.arrayEquals =
function (a, b) {\n
  if (a === b) {\n    return true;\n  }\n  if (a === null || b === null || !Kotlin.isArrayish(b) || a.length !==
b.length) {\n    return false;\n  }\n  for (var i = 0, n = a.length; i < n; i++) {\n    if (!Kotlin.equals(a[i], b[i]))
{\n      return false;\n    }\n  }\n  return true;\n};\n\nKotlin.arrayDeepEquals = function (a, b) {\n  return
Kotlin.kotlin.collections.contentDeepEqualsImpl(a, b);\n};\n\nKotlin.arrayHashCode = function (arr) {\n  if (arr
=== null) return 0\n  var result = 1;\n  for (var i = 0, n = arr.length; i < n; i++) {\n    result = ((31 * result | 0) +
Kotlin.hashCode(arr[i])) | 0;\n  }\n  return result;\n};\n\nKotlin.arrayDeepHashCode = function (arr) {\n  return
Kotlin.kotlin.collections.contentDeepHashCodeImpl(arr);\n};\n\nKotlin.primitiveArraySort = function (array) {\n
array.sort(Kotlin.doubleCompareTo);\n};\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors. \n
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\nKotlin.getCallableRef = function(name, f) {\n  f.callableName = name;\n  return
f;\n};\n\nKotlin.getPropertyCallableRef = function(name, paramCount, getter, setter) {\n  getter.get = getter;\n
getter.set = setter;\n  getter.callableName = name;\n  return getPropertyRefClass(getter, setter,
propertyRefClassMetadataCache[paramCount]);\n};\n\nfunction getPropertyRefClass(obj, setter, cache) {\n
obj.$metadata$ = getPropertyRefMetadata(typeof setter === "function" ? cache.mutable : cache.immutable);\n
obj.constructor = obj;\n  return obj;\n};\n\nvar propertyRefClassMetadataCache = [\n  {\n    mutable: { value:
null, implementedInterface: function () {\n      return Kotlin.kotlin.reflect.KMutableProperty0 }\n    },\n
immutable: { value: null, implementedInterface: function () {\n      return Kotlin.kotlin.reflect.KProperty0
}\n    }\n  },\n  {\n    mutable: { value: null, implementedInterface: function () {\n      return
Kotlin.kotlin.reflect.KMutableProperty1 }\n    },\n    immutable: { value: null, implementedInterface: function
() {\n      return Kotlin.kotlin.reflect.KProperty1 }\n    }\n  };\n};\n\nfunction getPropertyRefMetadata(cache)
{\n  if (cache.value === null) {\n    cache.value = {\n      interfaces: [cache.implementedInterface()],\n
baseClass: null,\n      functions: {},\n      properties: {},\n      types: {},\n      staticMembers: {}\n
};\n  }\n  return cache.value;\n};\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors. \n
 * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\nKotlin.toShort = function (a) {\n  return (a & 0xFFFF) << 16 >>
16;\n};\n\nKotlin.toByte = function (a) {\n
  return (a & 0xFF) << 24 >> 24;\n};\n\nKotlin.toChar = function (a) {\n  return a &
0xFFFF;\n};\n\nKotlin.numberToLong = function (a) {\n  return a instanceof Kotlin.Long ? a :
Kotlin.Long.fromNumber(a);\n};\n\nKotlin.numberToInt = function (a) {\n  return a instanceof Kotlin.Long ?
a.toInt() : Kotlin.doubleToInt(a);\n};\n\nKotlin.numberToShort = function (a) {\n  return
Kotlin.toShort(Kotlin.numberToInt(a));\n};\n\nKotlin.numberToByte = function (a) {\n  return
Kotlin.toByte(Kotlin.numberToInt(a));\n};\n\nKotlin.numberToDouble = function (a) {\n  return
+a;\n};\n\nKotlin.numberToChar = function (a) {\n  return
Kotlin.toChar(Kotlin.numberToInt(a));\n};\n\nKotlin.doubleToInt = function(a) {\n  if (a > 2147483647) return
2147483647;\n  if (a < -2147483648) return -2147483648;\n  return a | 0;\n};\n\nKotlin.toBoxedChar = function
(a) {\n  if (a == null) return a;\n  if (a instanceof Kotlin.BoxedChar) return a;\n  return new
Kotlin.BoxedChar(a);\n};\n\nKotlin.unboxChar
= function(a) {\n  if (a == null) return a;\n  return Kotlin.toChar(a);\n};\n", "/*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors. \n
 * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n
*/\n\nKotlin.equals = function (obj1, obj2) {\n  if (obj1

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== null) {\n    return obj2 == null;\n } \n\n if (obj2 == null) {\n    return false;\n } \n\n if (obj1 !== obj1)
{\n    return obj2 !== obj2;\n } \n\n if (typeof obj1 === \"object\" && typeof obj1.equals === \"function\") {\n
    return obj1.equals(obj2);\n } \n\n if (typeof obj1 === \"number\" && typeof obj2 === \"number\") {\n
return obj1 === obj2 && (obj1 !== 0 || 1 / obj1 === 1 / obj2)\n } \n\n return obj1 ===
obj2;\n};\n\nKotlin.hashCode = function (obj) {\n if (obj == null) {\n    return 0;\n } \n var objType = typeof
obj;\n if (\"object\" === objType) {\n
    return \"function\" === typeof obj.hashCode ? obj.hashCode() : getObjectHashCode(obj);\n } \n if
(\"function\" === objType) {\n    return getObjectHashCode(obj);\n } \n if (\"number\" === objType) {\n
return Kotlin.numberHashCode(obj);\n } \n if (\"boolean\" === objType) {\n    return Number(obj)\n } \n\n
var str = String(obj);\n return getStringHashCode(str);\n};\n\nKotlin.toString = function (o) {\n if (o == null)
{\n    return \"null\";\n } \n else if (Kotlin.isArrayish(o)) {\n    return \"[...]\";\n } \n else {\n    return
o.toString();\n } \n};\n\n/** @const *\nvar POW_2_32 = 4294967296;\n// TODO: consider switching to Symbol
type once we are on ES6.\n/** @const *\nvar OBJECT_HASH_CODE_PROPERTY_NAME =
\"kotlinHashCodeValue$\";\n\nfunction getObjectHashCode(obj) {\n if
(! (OBJECT_HASH_CODE_PROPERTY_NAME in obj)) {\n    var hash = (Math.random() * POW_2_32) | 0; //
Make 32-bit signed integer.\n    Object.defineProperty(obj,
OBJECT_HASH_CODE_PROPERTY_NAME, { value: hash, enumerable: false });\n } \n return
obj[OBJECT_HASH_CODE_PROPERTY_NAME];\n}\n\nfunction getStringHashCode(str) {\n var hash = 0;\n
for (var i = 0; i < str.length; i++) {\n    var code = str.charCodeAt(i);\n    hash = (hash * 31 + code) | 0; // Keep
it 32-bit.\n } \n return hash;\n}\n\nKotlin.identityHashCode = getObjectHashCode;\n\", /*\n * Copyright 2010-
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the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n// Copyright 2009 The Closure
Library Authors. All Rights Reserved.\n// Licensed under the Apache License, Version 2.0 (the \"License\");\n//
you may not use this file except in compliance with the License.\n// You may obtain a copy of the License at\n//
http://www.apache.org/licenses/LICENSE-2.0\n// Unless required by applicable law
or agreed to in writing, software\n// distributed under the License is distributed on an \"AS-IS\" BASIS,\n//
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n\n/**\n * Constructs a
64-bit two's-complement integer, given its low and high 32-bit\n * values as *signed* integers. See the from*
functions below for more\n * convenient ways of constructing Longs.\n *\n * The internal representation of a long is
the two given signed, 32-bit values.\n * We use 32-bit pieces because these are the size of integers on which\n *
Javascript performs bit-operations. For operations like addition and\n * multiplication, we split each number into
16-bit pieces, which can easily be\n * multiplied within Javascript's floating-point representation without overflow\n *
or change in sign.\n *\n * In the algorithms below, we frequently reduce the negative case to the\n * positive case
by negating the input(s) and then post-processing the result.\n * Note that we must ALWAYS check
specially whether those values are MIN_VALUE\n * (-2^63) because -MIN_VALUE == MIN_VALUE (since
2^63 cannot be represented as\n * a positive number, it overflows back into a negative). Not handling this\n * case
would often result in infinite recursion.\n *\n * @param {number} low The low (signed) 32 bits of the long.\n *
@param {number} high The high (signed) 32 bits of the long.\n * @constructor\n * @final\n *\nKotlin.Long =
function(low, high) {\n /**\n * @type {number}\n * @private\n *\n this.low_ = low | 0; // force into 32
signed bits.\n\n /**\n * @type {number}\n * @private\n *\n this.high_ = high | 0; // force into 32 signed
bits.\n};\n\nKotlin.Long.$metadata$ = {\n kind: \"class\", \n simpleName: \"Long\", \n interfaces: []\n};\n\n//
NOTE: Common constant values ZERO, ONE, NEG_ONE, etc. are defined below the\n// from* methods on which
they depend.\n\n/**\n * A cache of the Long representations of small integer values.\n * @type {!Object}\n *
@private\n *\nKotlin.Long.IntCache_ = {};\n\n/**\n * Returns a Long representing the given (32-bit) integer value.\n *
@param {number} value The 32-bit integer in question.\n * @return {!Kotlin.Long} The corresponding Long
value.\n *\nKotlin.Long.fromInt = function(value) {\n if (-128 <= value && value < 128) {\n    var cachedObj =
Kotlin.Long.IntCache_[value];\n    if (cachedObj) {\n        return cachedObj;\n    } \n } \n\n var obj = new

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= Kotlin.Long.fromInt(1 << 24);\n\n/** @return {number} The value, assuming it is a 32-bit integer.
*\nKotlin.Long.prototype.toInt = function() {\n return this.low_;\n};\n\n/** @return {number} The closest
floating-point representation to this value. *\nKotlin.Long.prototype.toNumber = function() {\n return this.high_ *
Kotlin.Long.TWO_PWR_32_DBL_ +\n    this.getLowBitsUnsigned();\n};\n\n/** @return {number} The 32-bit
hashCode of this value. *\nKotlin.Long.prototype.hashCode = function() {\n return this.high_ ^
this.low_;\n};\n\n/**\n * @param {number=} opt_radix The radix in which the text should be written.\n * @return
{string} The textual representation of this value.\n * @override\n *\nKotlin.Long.prototype.toString =
function(opt_radix) {\n var radix = opt_radix || 10;\n if (radix < 2 || 36 < radix) {\n throw Error('radix out of
range: ' + radix);\n }\n\n if (this.isZero()) {\n return '0';\n }\n\n if (this.isNegative()) {\n if
(this.equalsLong(Kotlin.Long.MIN_VALUE))
{\n // We need to change the Long value before it can be negated, so we remove\n // the bottom-most digit in
this base and then recurse to do the rest.\n var radixLong = Kotlin.Long.fromNumber(radix);\n var div =
this.div(radixLong);\n var rem = div.multiply(radixLong).subtract(this);\n return div.toString(radix) +
rem.toInt().toString(radix);\n } else {\n return '-' + this.negate().toString(radix);\n }\n }\n\n // Do several (6)
digits each time through the loop, so as to\n // minimize the calls to the very expensive emulated div.\n var
radixToPower = Kotlin.Long.fromNumber(Math.pow(radix, 6));\n\n var rem = this;\n var result = '';\n while (true)
{\n var remDiv = rem.div(radixToPower);\n var intVal =
rem.subtract(remDiv.multiply(radixToPower)).toInt();\n var digits = intVal.toString(radix);\n rem = remDiv;\n
if (rem.isZero()) {\n return digits + result;\n } else {\n while (digits.length
< 6) {\n digits = '0' + digits;\n }\n result = '' + digits + result;\n }\n }\n\n\n/** @return {number}
The high 32-bits as a signed value. *\nKotlin.Long.prototype.getHighBits = function() {\n return
this.high_;\n};\n\n\n/** @return {number} The low 32-bits as a signed value.
*\nKotlin.Long.prototype.getLowBits = function() {\n return this.low_;\n};\n\n\n/** @return {number} The low
32-bits as an unsigned value. *\nKotlin.Long.prototype.getLowBitsUnsigned = function() {\n return (this.low_ >=
0) ?\n    this.low_ : Kotlin.Long.TWO_PWR_32_DBL_ + this.low_;\n};\n\n\n/**\n * @return {number} Returns
the number of bits needed to represent the absolute\n * value of this Long.\n
*\nKotlin.Long.prototype.getNumBitsAbs = function() {\n if (this.isNegative()) {\n if
(this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return 64;\n } else {\n return
this.negate().getNumBitsAbs();\n }\n } else {\n var val = this.high_ != 0 ? this.high_
: this.low_;\n for (var bit = 31; bit > 0; bit--) {\n if ((val & (1 << bit)) != 0) {\n break;\n }\n }\n
return this.high_ != 0 ? bit + 33 : bit + 1;\n }\n};\n\n\n/** @return {boolean} Whether this value is zero.
*\nKotlin.Long.prototype.isZero = function() {\n return this.high_ == 0 && this.low_ == 0;\n};\n\n\n/** @return
{boolean} Whether this value is negative. *\nKotlin.Long.prototype.isNegative = function() {\n return this.high_ <
0;\n};\n\n\n/** @return {boolean} Whether this value is odd. *\nKotlin.Long.prototype.isOdd = function() {\n
return (this.low_ & 1) == 1;\n};\n\n\n/**\n * @param {Kotlin.Long} other Long to compare against.\n * @return
{boolean} Whether this Long equals the other.\n *\nKotlin.Long.prototype.equalsLong = function(other) {\n return
(this.high_ == other.high_) && (this.low_ == other.low_);\n};\n\n\n/**\n * @param {Kotlin.Long} other Long to
compare against.\n * @return {boolean} Whether this Long does not equal the other.\n
*\nKotlin.Long.prototype.notEqualsLong = function(other) {\n return (this.high_ != other.high_) || (this.low_ !=
other.low_);\n};\n\n\n/**\n * @param {Kotlin.Long} other Long to compare against.\n * @return {boolean}
Whether this Long is less than the other.\n *\nKotlin.Long.prototype.lessThan = function(other) {\n return
this.compare(other) < 0;\n};\n\n\n/**\n * @param {Kotlin.Long} other Long to compare against.\n * @return
{boolean} Whether this Long is less than or equal to the other.\n *\nKotlin.Long.prototype.lessThanOrEqual =
function(other) {\n return this.compare(other) <= 0;\n};\n\n\n/**\n * @param {Kotlin.Long} other Long to
compare against.\n * @return {boolean} Whether this Long is greater than the other.\n
*\nKotlin.Long.prototype.greaterThan = function(other) {\n return this.compare(other) > 0;\n};\n\n\n/**\n *
@param {Kotlin.Long} other Long to compare against.\n * @return {boolean} Whether this Long is greater than or
equal to the other.\n *\nKotlin.Long.prototype.greaterThanOrEqual

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= function(other) {\n return this.compare(other) >= 0;\n};\n\n/n/**\n * Compares this Long with the given one.\n *
@param {Kotlin.Long} other Long to compare against.\n * @return {number} 0 if they are the same, 1 if the this is
greater, and -1\n * if the given one is greater.\n */\nKotlin.Long.prototype.compare = function(other) {\n if
(this.equalsLong(other)) {\n return 0;\n }\n\n var thisNeg = this.isNegative();\n var otherNeg =
other.isNegative();\n if (thisNeg && !otherNeg) {\n return -1;\n }\n if (!thisNeg && otherNeg) {\n return 1;\n
}\n\n // at this point, the signs are the same, so subtraction will not overflow\n if (this.subtract(other).isNegative())
{\n return -1;\n } else {\n return 1;\n }\n};\n\n/n/**\n * @return {!Kotlin.Long} The negation of this value.
*\nKotlin.Long.prototype.negate = function() {\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return
Kotlin.Long.MIN_VALUE;\n } else {\n return this.not().add(Kotlin.Long.ONE);\n
}\n};\n\n/n/**\n * Returns the sum of this and the given Long.\n * @param {Kotlin.Long} other Long to add to
this one.\n * @return {!Kotlin.Long} The sum of this and the given Long.\n */\nKotlin.Long.prototype.add =
function(other) {\n // Divide each number into 4 chunks of 16 bits, and then sum the chunks.\n\n var a48 =
this.high_ >>> 16;\n var a32 = this.high_ & 0xFFFF;\n var a16 = this.low_ >>> 16;\n var a00 = this.low_ &
0xFFFF;\n\n var b48 = other.high_ >>> 16;\n var b32 = other.high_ & 0xFFFF;\n var b16 = other.low_ >>> 16;\n
var b00 = other.low_ & 0xFFFF;\n\n var c48 = 0, c32 = 0, c16 = 0, c00 = 0;\n c00 += a00 + b00;\n c16 += c00
>>> 16;\n c00 &= 0xFFFF;\n c16 += a16 + b16;\n c32 += c16 >>> 16;\n c16 &= 0xFFFF;\n c32 += a32 + b32;\n
c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n c48 += a48 + b48;\n c48 &= 0xFFFF;\n return
Kotlin.Long.fromBits((c16 << 16) | c00, (c48 << 16) | c32);\n};\n\n/n/**\n * Returns the difference of this and the
given Long.\n * @param {Kotlin.Long} other Long to subtract from this.\n * @return {!Kotlin.Long} The
difference of this and the given Long.\n */\nKotlin.Long.prototype.subtract = function(other) {\n return
this.add(other.negate());\n};\n\n/n/**\n * Returns the product of this and the given long.\n * @param {Kotlin.Long}
other Long to multiply with this.\n * @return {!Kotlin.Long} The product of this and the other.\n
*/\nKotlin.Long.prototype.multiply = function(other) {\n if (this.isZero()) {\n return Kotlin.Long.ZERO;\n } else
if (other.isZero()) {\n return Kotlin.Long.ZERO;\n }\n\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n
return other.isOdd() ? Kotlin.Long.MIN_VALUE : Kotlin.Long.ZERO;\n } else if
(other.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return this.isOdd() ? Kotlin.Long.MIN_VALUE :
Kotlin.Long.ZERO;\n }\n\n if (this.isNegative()) {\n if (other.isNegative()) {\n return
this.negate().multiply(other.negate());\n } else {\n return this.negate().multiply(other);\n
}\n } else if (other.isNegative()) {\n return this.multiply(other.negate()).negate();\n }\n\n // If both longs are
small, use float multiplication\n if (this.lessThan(Kotlin.Long.TWO_PWR_24_) &&\n
other.lessThan(Kotlin.Long.TWO_PWR_24_)) {\n return Kotlin.Long.fromNumber(this.toNumber() *
other.toNumber());\n }\n\n // Divide each long into 4 chunks of 16 bits, and then add up 4x4 products.\n // We can
skip products that would overflow.\n\n var a48 = this.high_ >>> 16;\n var a32 = this.high_ & 0xFFFF;\n var a16 =
this.low_ >>> 16;\n var a00 = this.low_ & 0xFFFF;\n\n var b48 = other.high_ >>> 16;\n var b32 = other.high_ &
0xFFFF;\n var b16 = other.low_ >>> 16;\n var b00 = other.low_ & 0xFFFF;\n\n var c48 = 0, c32 = 0, c16 = 0, c00
= 0;\n c00 += a00 * b00;\n c16 += c00 >>> 16;\n c00 &= 0xFFFF;\n c16 += a16 * b00;\n c32 += c16 >>> 16;\n
c16 &= 0xFFFF;\n c16 += a00 * b16;\n c32 += c16 >>> 16;\n c16 &= 0xFFFF;\n c32 +=
a32 * b00;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n c32 += a16 * b16;\n c48 += c32 >>> 16;\n c32 &=
0xFFFF;\n c32 += a00 * b32;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n c48 += a48 * b00 + a32 * b16 + a16 *
b32 + a00 * b48;\n c48 &= 0xFFFF;\n return Kotlin.Long.fromBits((c16 << 16) | c00, (c48 << 16) |
c32);\n};\n\n/n/**\n * Returns this Long divided by the given one.\n * @param {Kotlin.Long} other Long by which
to divide.\n * @return {!Kotlin.Long} This Long divided by the given one.\n */\nKotlin.Long.prototype.div =
function(other) {\n if (other.isZero()) {\n throw Error('division by zero');\n } else if (this.isZero()) {\n return
Kotlin.Long.ZERO;\n }\n\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n if
(other.equalsLong(Kotlin.Long.ONE) ||\n other.equalsLong(Kotlin.Long.NEG_ONE)) {\n return
Kotlin.Long.MIN_VALUE; // recall that -MIN_VALUE == MIN_VALUE\n } else if
(other.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return Kotlin.Long.ONE;\n }
}

```



```

return ia === 1 / b ? 0 : (ia < 0 ? -1 : 1);
}

return a !== a ? (b !== b ? 0 : 1) : -1;
}

Kotlin.charInc = function (value) {
return Kotlin.toChar(value+1);
};

Kotlin.charDec = function (value) {
return Kotlin.toChar(value-1);
};

Kotlin.imul = Math.imul || imul;

Kotlin.imulEmulated = imul;

function imul(a, b) {
return ((a & 0xffff0000) * (b & 0xffff) + (a & 0xffff) * (b | 0)) | 0;
}

function() {
var buf = new ArrayBuffer(8);
var bufFloat64 = new Float64Array(buf);
var bufFloat32 = new Float32Array(buf);
var bufInt32 = new Int32Array(buf);
var lowIndex = 0;
var highIndex = 1;

bufFloat64[0] = -1; // bff00000_00000000
if (bufInt32[lowIndex] !== 0) {
lowIndex = 1;
highIndex = 0;
}

Kotlin.doubleToBits = function (value) {
return Kotlin.doubleToRawBits(isNaN(value) ? NaN : value);
};

Kotlin.doubleToRawBits = function (value) {
bufFloat64[0] = value;
return Kotlin.Long.fromBits(bufInt32[lowIndex], bufInt32[highIndex]);
};

Kotlin.doubleFromBits = function (value) {
bufInt32[lowIndex] = value.low_;
bufInt32[highIndex] = value.high_;
return bufFloat64[0];
};

Kotlin.floatToBits = function (value) {
return Kotlin.floatToRawBits(isNaN(value) ? NaN : value);
};

Kotlin.floatToRawBits = function (value) {
bufFloat32[0] = value;
return bufInt32[0];
};

Kotlin.floatFromBits = function (value) {
bufInt32[0] = value;
return bufFloat32[0];
};

// returns zero value for number with positive sign bit
and non-zero value for number with negative sign bit.
Kotlin.doubleSignBit = function (value) {
bufFloat64[0] = value;
return bufInt32[highIndex] & 0x80000000;
};

Kotlin.numberHashCode = function (obj) {
if ((obj | 0) === obj) {
return obj | 0;
}
else {
bufFloat64[0] = obj;
return (bufInt32[highIndex] * 31 | 0) + bufInt32[lowIndex] | 0;
}
}

Kotlin.ensureNotNull = function (x) {
return x != null ? x : Kotlin.throwNPE();
};

"/**
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
nif (typeof String.prototype.startsWith === "undefined") {
Object.defineProperty(String.prototype, "startsWith", {
value: function (searchString, position) {
position = position || 0;
return this.lastIndexOf(searchString, position) === position;
}
});

nif (typeof String.prototype.endsWith === "undefined") {
Object.defineProperty(String.prototype, "endsWith", {
value: function (searchString, position) {
var subjectString = this.toString();
if (position === undefined || position > subjectString.length) {
position = subjectString.length;
}
position -= searchString.length;
var lastIndex = subjectString.indexOf(searchString, position);
return lastIndex !== -1 && lastIndex === position;
}
});

// ES6 Math polyfills
nif (typeof Math.sign === "undefined") {
Math.sign = function (x) {
x = +x; // convert to a number
if (x === 0 || isNaN(x)) {
return Number(x);
}
return x > 0 ? 1 : -1;
};

nif (typeof Math.trunc === "undefined") {
Math.trunc = function (x) {
if (isNaN(x)) {
return NaN;
}
if (x > 0) {
return Math.floor(x);
}
return Math.ceil(x);
};

}

function() {
var epsilon = 2.220446049250313E-16;
var taylor_2_bound = Math.sqrt(epsilon);
var taylor_n_bound = Math.sqrt(taylor_2_bound);

var upper_taylor_2_bound = 1/taylor_2_bound;
var upper_taylor_n_bound = 1/taylor_n_bound;

if (typeof Math.sinh === "undefined") {
Math.sinh = function (x) {
if (Math.abs(x) < taylor_n_bound) {
var result = x;
if (Math.abs(x) > taylor_2_bound) {
result += (x * x * x) / 6;
}
return result;
}
else {
var y = Math.exp(x);
var y1 = 1 / y;
if (!isFinite(y)) return Math.exp(x - Math.LN2);
if (!isFinite(y1)) return -Math.exp(-x - Math.LN2);
return (y - y1) / 2;
}
};

}

if (typeof Math.cosh === "undefined") {
Math.cosh = function (x) {
var y = Math.exp(x);
var y1 = 1 / y;
if (!isFinite(y) || !isFinite(y1)) return Math.exp(Math.abs(x) - Math.LN2);
return (y + y1) / 2;
};

}

if (typeof Math.tanh === "undefined") {
Math.tanh = function (x) {
if (Math.abs(x) < taylor_n_bound) {
var result = x;
if (Math.abs(x) > taylor_2_bound) {
result -= (x * x * x) / 3;
}
return result;
}
else {
var a = Math.exp(+x), b = Math.exp(-x);
return a === Infinity ? 1 : b === Infinity ? -1 : (a - b) / (a + b);
}
};
}
}

```

```

}\n    };\n    }\n\n // Inverse hyperbolic function implementations derived from boost special math functions,\n // Copyright Eric Ford & Hubert Holin 2001.\n\n if (typeof Math.asinh === \"undefined\") {\n     var asinh =\n function(x) {\n     if (x >= +taylor_n_bound)\n         {\n             if (x > upper_taylor_n_bound)\n                 {\n                     //\n approximation by laurent series in 1/x at 0+ order from -1 to 0\n                 return Math.log(x) + Math.LN2;\n                 }\n             else\n                 {\n                     // approximation by laurent series in 1/x at 0+ order\n from -1 to 1\n                 return Math.log(x * 2 + (1 / (x * 2)));\n                 }\n             }\n         else if (x <= -\n taylor_n_bound)\n         {\n             return -asinh(-x);\n         }\n         else\n             {\n                 //\n approximation by taylor series in x at 0 up to order 2\n                 var result = x;\n                 if (Math.abs(x) >=\n taylor_2_bound)\n                 {\n                     var x3 = x * x * x;\n                     // approximation by taylor series in x at\n 0 up to order 4\n                 result\n                 -= x3 / 6;\n                 }\n             return result;\n         }\n     };\n\n Math.asinh = asinh;\n }\n\n if (typeof\n Math.acosh === \"undefined\") {\n     Math.acosh = function(x) {\n         if (x < 1)\n             {\n                 return\n NaN;\n             }\n         else if (x - 1 >= taylor_n_bound)\n             {\n                 if (x > upper_taylor_2_bound)\n                 {\n                     // approximation by laurent series in 1/x at 0+ order from -1 to 0\n                 return\n Math.log(x) + Math.LN2;\n                 }\n             else\n                 {\n                 return Math.log(x + Math.sqrt(x * x -\n 1));\n                 }\n             }\n         else\n             {\n                 var y = Math.sqrt(x - 1);\n                 //\n approximation by taylor series in y at 0 up to order 2\n                 var result = y;\n                 if (y >=\n taylor_2_bound)\n                 {\n                     var y3 = y * y *\n y;\n                     // approximation by taylor series in y at 0 up to order 4\n                 result -= y3 / 12;\n                 }\n             return Math.sqrt(2) * result;\n         }\n     };\n\n }\n\n if (typeof Math.atanh === \"undefined\")\n {\n     Math.atanh = function(x) {\n         if (Math.abs(x) < taylor_n_bound) {\n             var result = x;\n             if (Math.abs(x) > taylor_2_bound) {\n                 result += (x * x * x) / 3;\n             }\n             return result;\n         }\n         return Math.log((1 + x) / (1 - x)) / 2;\n     };\n\n }\n\n if (typeof Math.log1p === \"undefined\") {\n     Math.log1p = function(x) {\n         if (Math.abs(x) < taylor_n_bound) {\n             var x2 = x * x;\n             var x3 = x2 * x;\n             var x4 = x3 * x;\n             // approximation by taylor series in x at 0 up to order 4\n             return (-x4 / 4 + x3 / 3 - x2 / 2 + x);\n         }\n         return Math.log(x + 1);\n     };\n\n }\n\n if (typeof Math.expm1 === \"undefined\") {\n     Math.expm1 = function(x) {\n         if (Math.abs(x) < taylor_n_bound) {\n             var x2 = x * x;\n             var\n x3 = x2 * x;\n             var x4 = x3 * x;\n             // approximation by taylor series in x at 0 up to order 4\n             return (x4 / 24 + x3 / 6 + x2 / 2 + x);\n         }\n         return Math.exp(x) - 1;\n     };\n\n }\n\n }\n\n if (typeof\n Math.hypot === \"undefined\") {\n     Math.hypot = function() {\n         var y = 0;\n         var length =\n arguments.length;\n         for (var i = 0; i < length; i++) {\n             if (arguments[i] === Infinity || arguments[i] ===\n -Infinity) {\n                 return Infinity;\n             }\n             y += arguments[i] * arguments[i];\n         }\n         return\n Math.sqrt(y);\n     };\n\n }\n\n if (typeof Math.log10 === \"undefined\") {\n     Math.log10 = function(x) {\n         return Math.log(x) * Math.LOG10E;\n     };\n\n }\n\n if (typeof Math.log2 === \"undefined\") {\n     Math.log2 =\n function(x) {\n         return Math.log(x) * Math.LOG2E;\n     };\n\n }\n\n if (typeof Math.clz32 === \"undefined\") {\n     Math.clz32 = (function(log, LN2) {\n         return function(x) {\n             var asUInt = x >>> 0;\n             if (asUInt\n === 0) {\n                 return 32;\n             }\n             return 31 - (log(asUInt) / LN2 | 0) | 0; // the \"| 0\" acts like\n math.floor\n         };\n     })(Math.log, Math.LN2);\n\n }\n\n // For HtmlUnit and PhantomJs\n if (typeof\n ArrayBuffer.isView === \"undefined\") {\n     ArrayBuffer.isView = function(a) {\n         return a != null &&\n a.__proto__ != null && a.__proto__.__proto__ === Int8Array.prototype.__proto__;\n     };\n\n }\n\n if (typeof\n Array.prototype.fill === \"undefined\") {\n     // Polyfill from https://developer.mozilla.org/en-\n US/docs/Web/JavaScript/Reference/Global_Objects/Array/fill#Polyfill\n     Object.defineProperty(Array.prototype,\n 'fill', {\n         value: function (value) {\n             // Steps 1-2.\n             if (this == null) {\n                 throw new\n TypeError('this is null or not defined');\n             }\n             var O = Object(this);\n             // Steps 3-5.\n             var len = O.length >>> 0;\n             // Steps 6-7.\n             var start = arguments[1];\n             var relativeStart = start

```



```

(ctor === iface) return true;\n\n    var metadata = ctor.$metadata$;\n    if (metadata != null) {\n        var interfaces =
metadata.interfaces;\n        for (var i = 0; i < interfaces.length; i++) {\n            if
(isInheritanceFromInterface(interfaces[i], iface)) {\n                return true;\n            }\n        }\n    }\n\n    var
superPrototype
= ctor.prototype != null ? Object.getPrototypeOf(ctor.prototype) : null;\n    var superConstructor = superPrototype
!= null ? superPrototype.constructor : null;\n    return superConstructor != null &&
isInheritanceFromInterface(superConstructor, iface);\n}\n\n/**\n * @param {*} object\n * @param
{Function|Object} klass\n * @returns {Boolean}\n */\nKotlin.isType = function (object, klass) {\n    if (klass ===
Object) {\n        switch (typeof object) {\n            case \"string\":\n                case \"number\":\n                case
\"boolean\":\n                case \"function\":\n                    return true;\n                default:\n                    return object instanceof
Object;\n            }\n        }\n    }\n\n    if (object == null || klass == null || (typeof object !== 'object' && typeof object !==
'function')) {\n        return false;\n    }\n\n    if (typeof klass === \"function\" && object instanceof klass) {\n
return true;\n    }\n\n    var proto = Object.getPrototypeOf(klass);\n
var constructor = proto != null ? proto.constructor : null;\n    if (constructor != null && \"$metadata$\" in
constructor) {\n        var metadata = constructor.$metadata$;\n        if (metadata.kind === Kotlin.Kind.OBJECT) {\n
return object === klass;\n        }\n    }\n\n    var klassMetadata = klass.$metadata$;\n\n    // In WebKit
(JavaScriptCore) for some interfaces from DOM typeof returns \"object\", nevertheless they can be used in RHS of
instanceof\n    if (klassMetadata == null) {\n        return object instanceof klass;\n    }\n\n    if (klassMetadata.kind
=== Kotlin.Kind.INTERFACE && object.constructor != null) {\n        return
isInheritanceFromInterface(object.constructor, klass);\n    }\n\n    return false;\n};\n\nKotlin.isNumber = function (a)
{\n    return typeof a === \"number\" || a instanceof Kotlin.Long;\n};\n\nKotlin.isChar = function (value) {\n    return
value instanceof Kotlin.BoxedChar;\n};\n\nKotlin.isComparable = function (value) {\n    var type = typeof
value;\n\n    return type === \"string\" ||\n        type === \"boolean\" ||\n        Kotlin.isNumber(value) ||\n        Kotlin.isType(value, Kotlin.kotlin.Comparable);\n};\n\nKotlin.isCharSequence = function (value) {\n    return
typeof value === \"string\" || Kotlin.isType(value, Kotlin.kotlin.CharSequence);\n};\n\n/*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get
declarations directly under the module\n\n@PublishedApi\nnexternal internal fun <T> Array(size: Int):
Array<T>\n\n@JsName(\"newArray\")\nfun <T> newArray(size: Int, initialValue: T) = fillArrayVal(Array<T>(size),
initialValue)\n\n@JsName(\"newArrayF\")\ninline fun <T> arrayWithFun(size: Int, init: (Int) -> T) =
fillArrayFun(Array<T>(size), init)\n\n@JsName(\"fillArray\")\ninline fun <T> fillArrayFun(array: Array<T>, init:
(Int)
-> T): Array<T> {\n    for (i in 0..array.size - 1) {\n        array[i] = init(i)\n    }\n    return
array\n}\n\n@JsName(\"booleanArray\")\nfun booleanArray(size: Int, init: dynamic): Array<Boolean> {\n    val
result: dynamic = Array<Boolean>(size)\n    result.`$type$` = \"BooleanArray\"\n    return when (init) {\n        null,
true -> fillArrayVal(result, false)\n        false -> result\n        else -> fillArrayFun<Boolean>(result, init)\n    }\n}\n\n@JsName(\"booleanArrayF\")\ninline fun booleanArrayWithFun(size: Int, init: (Int) -> Boolean):
Array<Boolean> = fillArrayFun(booleanArray(size, false),
init)\n\n@JsName(\"charArray\")\n@Suppress(\"UNUSED_PARAMETER\")\nfun charArray(size: Int, init:
dynamic): Array<Char> {\n    val result = js(\"new Uint16Array(size)\")\n    result.`$type$` = \"CharArray\"\n    return when (init) {\n        null, true, false -> result // For consistency\n        else -> fillArrayFun<Char>(result,
init)\n    }\n}\n\n@JsName(\"charArrayF\")\ninline fun charArrayWithFun(size:
Int, init: (Int) -> Char): Array<Char> {\n    val array = charArray(size, null)\n    for (i in 0..array.size - 1) {\n
@Suppress(\"UNUSED_VARIABLE\") // used in js block\n        val value = init(i)\n        js(\"array[i] = value;\")\n    }\n    return array\n}\n\n@JsName(\"untypedCharArrayF\")\ninline fun untypedCharArrayWithFun(size: Int, init:
(Int) -> Char): Array<Char> {\n    val array = Array<Char>(size)\n    for (i in 0..array.size - 1) {\n
@Suppress(\"UNUSED_VARIABLE\") // used in js block\n        val value = init(i)\n        js(\"array[i] = value;\")\n    }\n    return array\n}\n\n@JsName(\"longArray\")\nfun longArray(size: Int, init: dynamic): Array<Long> {\n    val

```

```

result: dynamic = Array<Long>(size)\n result.`$type$` = `LongArray`\n return when (init) {\n null, true ->
fillArrayVal(result, 0L)\n false -> result\n else -> fillArrayFun<Long>(result, init)\n
}\n}\n\n@JsName(`longArrayF`)\n\ninline fun longArrayWithFun(size:
Int, init: (Int) -> Long): Array<Long> = fillArrayFun(longArray(size, false), init)\n\nprivate fun <T>
fillArrayVal(array: Array<T>, initialValue: T): Array<T> {\n for (i in 0..array.size - 1) {\n array[i] = initialValue\n
}\n return array\n}`, /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin\n\npublic class Enum<T> : Comparable<Enum<T>>
{\n @JsName(`name$`) private var _name: String = ``\n @JsName(`ordinal$`) private var _ordinal: Int =
0\n\n val name: String\n get() = _name\n\n val ordinal: Int\n get() = _ordinal\n\n override fun
compareTo(other: Enum<T>) = ordinal.compareTo(other.ordinal)\n\n override fun equals(other: Any?) = this ===
other\n\n override fun hashCode(): Int = js(`Kotlin.identityHashCode`)(this)\n\n override fun
toString() = name\n\n companion object\n}`, /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.js.internal\n\n@JsName(`DoubleCompanionObject`)\n\ninternal object DoubleCompanionObject {\n
@JsName(`MIN_VALUE`)\n const val MIN_VALUE: Double = 4.9E-324\n\n
@JsName(`MAX_VALUE`)\n const val MAX_VALUE: Double = 1.7976931348623157E308\n\n
@JsName(`POSITIVE_INFINITY`)\n @Suppress(`DIVISION_BY_ZERO`)\n const val
POSITIVE_INFINITY: Double = 1.0 / 0.0\n\n @JsName(`NEGATIVE_INFINITY`)\n
@Suppress(`DIVISION_BY_ZERO`)\n const val NEGATIVE_INFINITY: Double = -1.0 / 0.0\n\n
@JsName(`NaN`)\n @Suppress(`DIVISION_BY_ZERO`)\n const val NaN: Double = -(0.0 / 0.0)\n\n
@JsName(`SIZE_BYTES`)\n const val SIZE_BYTES = 8\n\n @JsName(`SIZE_BITS`)\n const val
SIZE_BITS
= 64\n}\n\n@JsName(`FloatCompanionObject`)\n\ninternal object FloatCompanionObject {\n
@JsName(`MIN_VALUE`)\n const val MIN_VALUE: Float = 1.4E-45F\n\n @JsName(`MAX_VALUE`)\n
const val MAX_VALUE: Float = 3.4028235E38F\n\n @JsName(`POSITIVE_INFINITY`)\n
@Suppress(`DIVISION_BY_ZERO`)\n const val POSITIVE_INFINITY: Float = 1.0F / 0.0F\n\n
@JsName(`NEGATIVE_INFINITY`)\n @Suppress(`DIVISION_BY_ZERO`)\n const val
NEGATIVE_INFINITY: Float = -1.0F / 0.0F\n\n @JsName(`NaN`)\n
@Suppress(`DIVISION_BY_ZERO`)\n const val NaN: Float = -(0.0F / 0.0F)\n\n
@JsName(`SIZE_BYTES`)\n const val SIZE_BYTES = 4\n\n @JsName(`SIZE_BITS`)\n const val
SIZE_BITS = 32\n}\n\n@JsName(`IntCompanionObject`)\n\ninternal object IntCompanionObject {\n
@JsName(`MIN_VALUE`)\n val MIN_VALUE: Int = -2147483647 - 1\n\n @JsName(`MAX_VALUE`)\n
val MAX_VALUE: Int = 2147483647\n\n @JsName(`SIZE_BYTES`)\n const val SIZE_BYTES = 4\n\n
@JsName(`SIZE_BITS`)\n const val SIZE_BITS = 32\n}\n\n@JsName(`LongCompanionObject`)\n\ninternal
object LongCompanionObject {\n @JsName(`MIN_VALUE`)\n val MIN_VALUE: Long =
js(`Kotlin.Long.MIN_VALUE`)\n\n @JsName(`MAX_VALUE`)\n val MAX_VALUE: Long =
js(`Kotlin.Long.MAX_VALUE`)\n\n @JsName(`SIZE_BYTES`)\n const val SIZE_BYTES = 8\n\n
@JsName(`SIZE_BITS`)\n const val SIZE_BITS = 64\n}\n\n@JsName(`ShortCompanionObject`)\n\ninternal
object ShortCompanionObject {\n @JsName(`MIN_VALUE`)\n val MIN_VALUE: Short = -32768\n\n
@JsName(`MAX_VALUE`)\n val MAX_VALUE: Short = 32767\n\n @JsName(`SIZE_BYTES`)\n const
val SIZE_BYTES = 2\n\n @JsName(`SIZE_BITS`)\n const val SIZE_BITS =
16\n}\n\n@JsName(`ByteCompanionObject`)\n\ninternal object ByteCompanionObject {\n
@JsName(`MIN_VALUE`)\n val MIN_VALUE: Byte = -128\n\n @JsName(`MAX_VALUE`)\n val
MAX_VALUE: Byte = 127\n\n @JsName(`SIZE_BYTES`)\n const
val SIZE_BYTES = 1\n\n @JsName(`SIZE_BITS`)\n const val SIZE_BITS =
8\n}\n\n@JsName(`CharCompanionObject`)\n\ninternal object CharCompanionObject {\n

```

```

@JsName("MIN_VALUE")\n public const val MIN_VALUE: Char = "\u0000"\n
@JsName("MAX_VALUE")\n public const val MAX_VALUE: Char = "\uFFFF"\n
@JsName("MIN_HIGH_SURROGATE")\n public const val MIN_HIGH_SURROGATE: Char = "\uD800"\n
@JsName("MAX_HIGH_SURROGATE")\n public const val MAX_HIGH_SURROGATE: Char =
"\uDBFF"\n
@JsName("MIN_LOW_SURROGATE")\n public const val MIN_LOW_SURROGATE: Char =
"\uDC00"\n
@JsName("MAX_LOW_SURROGATE")\n public const val MAX_LOW_SURROGATE: Char
= "\uDFFF"\n
@JsName("MIN_SURROGATE")\n public const val MIN_SURROGATE: Char =
MIN_HIGH_SURROGATE\n
@JsName("MAX_SURROGATE")\n public const val MAX_SURROGATE:
Char = MAX_LOW_SURROGATE\n
@JsName("SIZE_BYTES")\n const val SIZE_BYTES = 2\n
@JsName("SIZE_BITS")\n const
val SIZE_BITS = 16\n
internal object StringCompanionObject { }\n
internal object
BooleanCompanionObject { }\n
"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n
@file:kotlin.jvm.JvmMultifileClass\n
@file:kotlin.jvm.JvmName("ArraysKt")\n
package
kotlin.collections\n
/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n
/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n
/\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the
size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n */\n
@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component1(): T
{\n return get(0)\n}\n\n/**\n
* Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*/\n
@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component1(): Byte {\n return
get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*/\n
@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component1(): Short {\n return
get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*/\n
@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component1(): Int {\n return
get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size
of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is
unspecified.\n */\n
@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component1(): Long {\n
return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1,
throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*/\n
@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component1(): Float {\n return
get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*/\n
@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component1(): Double {\n return
get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the size of this array is less than 1, throws an
[IndexOutOfBoundsException]
except in Kotlin/JS\n * where the behavior is unspecified.\n */\n
@kotlin.internal.InlineOnly\npublic inline operator
fun BooleanArray.component1(): Boolean {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n *
\n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where
the behavior is unspecified.\n */\n
@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component1():
Char {\n return get(0)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less
than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*/\n
@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component2(): T {\n return

```

`get(1)` Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `ByteArray.component2(): Byte` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `ShortArray.component2(): Short` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `IntArray.component2(): Int` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `LongArray.component2(): Long` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `FloatArray.component2(): Float` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `DoubleArray.component2(): Double` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `BooleanArray.component2(): Boolean` {

 return `get(1)`

 Returns 2nd *element* from the array. If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `CharArray.component2(): Char` {

 return `get(1)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `<T> Array<out T>.component3(): T` {

 return `get(2)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `ByteArray.component3(): Byte` {

 return `get(2)`

 Returns 3rd *element* from the array.

 If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `ShortArray.component3(): Short` {

 return `get(2)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `IntArray.component3(): Int` {

 return `get(2)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `LongArray.component3(): Long` {

 return `get(2)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `FloatArray.component3(): Float` {

 return `get(2)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `DoubleArray.component3(): Double` {

 return `get(2)`

 Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`@kotlin.internal.InlineOnly` public inline operator fun `BooleanArray.component3(): Boolean` {

 return

`get(2)` Returns 3rd *element* from the array. If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`CharArray.component3(): Char` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`T.component4(): T` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`ByteArray.component4(): Byte` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`ShortArray.component4(): Short` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`IntArray.component4(): Int` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`LongArray.component4(): Long` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`FloatArray.component4(): Float` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`DoubleArray.component4(): Double` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`BooleanArray.component4(): Boolean` Returns 4th *element* from the array. If the size of this array is less than 4, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`CharArray.component4(): Char` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`<T> Array<out T>.component5(): T` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`ByteArray.component5(): Byte` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`ShortArray.component5(): Short` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`IntArray.component5(): Int` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`LongArray.component5(): Long` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`FloatArray.component5(): Float` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`get(4)` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`DoubleArray.component5(): Double` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`BooleanArray.component5(): Boolean` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`CharArray.component5(): Char` Returns 5th *element* from the array. If the size of this array is less than 5, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS where the behavior is unspecified.

`contains(element: T): Boolean` Returns `true` if [element] is found in the array.

`indexOf(element): Int` Returns the index of the first occurrence of [element] in the array. If [element] is not found, returns `-1`.

`contains(element: Byte): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Short): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Int): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Long): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Float): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Double): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Boolean): Boolean` Returns `true` if [element] is found in the array.

`contains(element: Char): Boolean` Returns `true` if [element] is found in the array.

`elementAt(index: Int): T` Returns an element at the given [index] or throws an `[IndexOutOfBoundsException]` if the [index] is out of bounds of this array.

`elementAt(index: Int): Byte` Returns an element at the given [index] or throws an `[IndexOutOfBoundsException]` if the [index] is out of bounds of this array.

`elementAt(index: Int): Short` Returns an element at the given [index] or throws an `[IndexOutOfBoundsException]` if the [index] is out of bounds of this array.

`elementAt(index: Int): Int` Returns an element at the given [index] or throws an `[IndexOutOfBoundsException]` if the [index] is out of bounds of this array.

`elementAt(index: Int): Long` Returns an element at the given [index] or throws an `[IndexOutOfBoundsException]` if the [index] is out of bounds of this array.

```

expect fun FloatArray.elementAt(index: Int): Float\n\n/**\n * Returns an element at the given [index] or throws an
[IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun DoubleArray.elementAt(index: Int): Double\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun BooleanArray.elementAt(index: Int):
Boolean\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun CharArray.elementAt(index: Int): Char\n\n/**\n * Returns an element at the given [index] or
the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Array<out T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    return
if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the
given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n *
@sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Byte): Byte {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Short): Short {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at
the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n *
\n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Int): Int {\n    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result
of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Long): Long {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.elementAtOrElse(index: Int, defaultValue: (Int) ->
Float): Float {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.elementAtOrElse(index: Int, defaultValue: (Int) ->
Double): Double {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic
inline fun BooleanArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Boolean): Boolean {\n    return if
(index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the
given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n *
@sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or
`null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

<T> Array<out T>.elementAtOrNull(index: Int): T? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given
[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.elementAtOrNull(index: Int): Byte? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.elementAtOrNull(index: Int): Short? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.elementAtOrNull(index: Int): Int? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an element at
the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.elementAtOrNull(index: Int): Long? {\n    return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.elementAtOrNull(index: Int): Float? {\n    return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.elementAtOrNull(index: Int): Double? {\n    return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.elementAtOrNull(index: Int): Boolean? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.elementAtOrNull(index: Int): Char? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns the first
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.find(predicate: (T) -> Boolean): T? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns the first element
matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.find(predicate: (Byte) -> Boolean): Byte? {\n    return
firstOrNull(predicate)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.find(predicate: (Short) -> Boolean): Short? {\n
return firstOrNull(predicate)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no
such element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.find(predicate: (Int) -> Boolean): Int? {\n    return
firstOrNull(predicate)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*\n\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.find(predicate: (Long) -> Boolean): Long? {\n    return firstOrNull(predicate)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.find(predicate: (Float) -> Boolean): Float? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun

```



```

DoubleArray.find(predicate: (Double) -> Boolean): Double? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nBooleanArray.find(predicate:\n (Boolean) -> Boolean): Boolean? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the first element\n matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nCharArray.find(predicate: (Char) -> Boolean): Char? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the\n last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out\n T>.findLast(predicate: (T) -> Boolean): T? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element\n matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nByteArray.findLast(predicate: (Byte) -> Boolean): Byte? {\n\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no\n such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.findLast(predicate: (Short) -> Boolean): Short? {\n\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no\n such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.findLast(predicate: (Int) -> Boolean): Int? {\n  return\n lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such\n element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.findLast(predicate: (Long) -> Boolean): Long? {\n\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nFloatArray.findLast(predicate: (Float) -> Boolean): Float? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns\n the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nDoubleArray.findLast(predicate: (Double) -> Boolean): Double? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nBooleanArray.findLast(predicate: (Boolean) -> Boolean): Boolean? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element\n matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.find\n */\n@kotlin.internal.InlineOnly\npublic inline fun\nCharArray.findLast(predicate: (Char) -> Boolean): Char? {\n  return lastOrNull(predicate)\n}\n\n/**\n * Returns\n first element.\n * \n * @throws [NoSuchElementException] if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic fun <T> Array<out\n T>.first(): T {\n  if (isEmpty())\n    throw NoSuchElementException("Array is empty.")\n  return\n this[0]\n}\n\n/**\n * Returns first element.\n * \n * @throws [NoSuchElementException] if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic fun ByteArray.first(): Byte {\n  if (isEmpty())\n    throw NoSuchElementException("Array is\n empty.")\n  return this[0]\n}\n\n/**\n * Returns first element.\n * \n * @throws [NoSuchElementException] if the\n array is empty.\n */\n@kotlin.internal.InlineOnly\npublic fun ShortArray.first(): Short {\n  if (isEmpty())\n    throw\n NoSuchElementException("Array is empty.")\n  return this[0]\n}\n\n/**\n * Returns first element.\n * \n * @throws [NoSuchElementException] if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic fun IntArray.first(): Int {\n  if (isEmpty())\n    throw NoSuchElementException("Array is empty.")\n  return\n this[0]\n}\n\n/**\n * Returns first element.\n * \n * @throws [NoSuchElementException] if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic fun LongArray.first(): Long {\n  if (isEmpty())\n    throw NoSuchElementException("Array is

```

```

empty.}\n return this[0]\n}\n\n/**\n * Returns first element.\n * @throws [NoSuchElementException] if the
array is empty.\n */\npublic fun FloatArray.first(): Float {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.}\n return this[0]\n}\n\n/**\n * Returns first element.\n * @throws
[NoSuchElementException] if the array is empty.\n */\npublic fun DoubleArray.first(): Double {\n if
(isEmpty())\n throw NoSuchElementException("Array is empty.}\n return this[0]\n}\n\n/**\n * Returns first
element.\n
* @throws [NoSuchElementException] if the array is empty.\n */\npublic fun BooleanArray.first(): Boolean {\n
if (isEmpty())\n throw NoSuchElementException("Array is empty.}\n return this[0]\n}\n\n/**\n * Returns
first element.\n * @throws [NoSuchElementException] if the array is empty.\n */\npublic fun CharArray.first():
Char {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.}\n return this[0]\n}\n\n/**\n
* Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n */\npublic inline fun <T> Array<out T>.first(predicate: (T) -> Boolean): T {\n for (element in
this) if (predicate(element)) return element\n throw NoSuchElementException("Array contains no element
matching the predicate.}\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n */\npublic inline fun ByteArray.first(predicate:
(Byte) -> Boolean): Byte {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Array contains no element matching the predicate.}\n}\n\n/**\n * Returns the first
element matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n
*/\npublic inline fun ShortArray.first(predicate: (Short) -> Boolean): Short {\n for (element in this) if
(predicate(element)) return element\n throw NoSuchElementException("Array contains no element matching the
predicate.}\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n */\npublic inline fun IntArray.first(predicate: (Int) ->
Boolean): Int {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Array contains no element matching the predicate.}\n}\n\n/**\n * Returns the first
element matching the given [predicate].\n
* @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun
LongArray.first(predicate: (Long) -> Boolean): Long {\n for (element in this) if (predicate(element)) return
element\n throw NoSuchElementException("Array contains no element matching the predicate.}\n}\n\n/**\n
* Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n */\npublic inline fun FloatArray.first(predicate: (Float) -> Boolean): Float {\n for (element in
this) if (predicate(element)) return element\n throw NoSuchElementException("Array contains no element
matching the predicate.}\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n */\npublic inline fun DoubleArray.first(predicate:
(Double) -> Boolean): Double {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Array
contains no element matching the predicate.}\n}\n\n/**\n * Returns the first element matching the given
[predicate].\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun
BooleanArray.first(predicate: (Boolean) -> Boolean): Boolean {\n for (element in this) if (predicate(element))
return element\n throw NoSuchElementException("Array contains no element matching the
predicate.}\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n */\npublic inline fun CharArray.first(predicate: (Char) ->
Boolean): Char {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Array contains no element matching the predicate.}\n}\n\n/**\n * Returns the first
non-null value produced by [transform] function being applied to elements of this array in iteration order.\n *
or throws [NoSuchElementException] if no non-null
value was produced.\n * \n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n
*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any> Array<out
T>.firstNotNullOf(transform: (T) -> R?): R {\n return firstNotNullOfOrNull(transform) ?: throw

```

```

NoSuchElementException("No element of the array was transformed to a non-null value.")\n\n/**\n * Returns
the first non-null value produced by [transform] function being applied to elements of this array in iteration order,\n
 * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any> Array<out
T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n    for (element in this) {\n        val result =
transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return null\n}\n\n/**\n *
Returns the first
element, or `null` if the array is empty.\n */\npublic fun <T> Array<out T>.firstOrNull(): T? {\n    return if
(isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n */\npublic fun
ByteArray.firstOrNull(): Byte? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or
`null` if the array is empty.\n */\npublic fun ShortArray.firstOrNull(): Short? {\n    return if (isEmpty()) null else
this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n */\npublic fun IntArray.firstOrNull():
Int? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is
empty.\n */\npublic fun LongArray.firstOrNull(): Long? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n *
Returns the first element, or `null` if the array is empty.\n */\npublic fun FloatArray.firstOrNull(): Float? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n */\npublic fun DoubleArray.firstOrNull(): Double? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n */\npublic fun BooleanArray.firstOrNull(): Boolean? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n */\npublic fun CharArray.firstOrNull(): Char? {\n
return
if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if
element was not found.\n */\npublic inline fun <T> Array<out T>.firstOrNull(predicate: (T) -> Boolean): T? {\n
for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element
matching the given [predicate], or `null` if element was not found.\n */\npublic inline fun
ByteArray.firstOrNull(predicate: (Byte) -> Boolean): Byte? {\n    for (element in this)
if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n */\npublic inline fun ShortArray.firstOrNull(predicate: (Short) ->
Boolean): Short? {\n    for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if element was not found.\n */\npublic inline fun
IntArray.firstOrNull(predicate: (Int) -> Boolean): Int? {\n    for (element in this) if (predicate(element)) return
element\n    return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element
was not found.\n */\npublic inline fun LongArray.firstOrNull(predicate: (Long) -> Boolean): Long? {\n    for
(element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element
matching the given [predicate], or `null` if element was not found.\n */\npublic
inline fun FloatArray.firstOrNull(predicate: (Float) -> Boolean): Float? {\n    for (element in this) if
(predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n */\npublic inline fun DoubleArray.firstOrNull(predicate: (Double) -
> Boolean): Double? {\n    for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if element was not found.\n */\npublic inline fun
BooleanArray.firstOrNull(predicate: (Boolean) -> Boolean): Boolean? {\n    for (element in this) if
(predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n */\npublic inline fun CharArray.firstOrNull(predicate: (Char) ->
Boolean): Char? {\n    for (element in this) if (predicate(element)) return element\n    return
null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue] function if the
[index] is out of bounds of this array.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.getOrNull(index: Int, defaultValue: (Int) -> T): T? {\n    return if (index >= 0 && index <= lastIndex) get(index)
else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the

```

```

[defaultValue] function if the [index] is out of bounds of this array.\n *
\n@kotlin.internal.InlineOnly\npublic inline
fun ByteArray.getOrNull(index: Int, defaultValue: (Int) -> Byte): Byte {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.getOrNull(index: Int, defaultValue: (Int) -> Short):
Short {\n  return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns
an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of
this array.\n *
\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.getOrNull(index: Int, defaultValue: (Int) ->
Int): Int {\n  return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n *
\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.getOrNull(index: Int,
defaultValue: (Int) -> Long): Long {\n  return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *
\n@kotlin.internal.InlineOnly\npublic
inline fun FloatArray.getOrNull(index: Int, defaultValue: (Int) -> Float): Float {\n  return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result
of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.getOrNull(index: Int, defaultValue: (Int) ->
Double): Double {\n  return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n *
\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.getOrNull(index: Int,
defaultValue: (Int) -> Boolean): Boolean {\n  return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling
the [defaultValue] function if the [index] is out of bounds of this array.\n *
\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.getOrNull(index: Int, defaultValue: (Int) -> Char): Char {\n  return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if
the [index] is out of bounds of this array.\n *
\n * @sample samples.collections.Collections.Elements.getOrNull\n
\npublic fun <T> Array<out T>.getOrNull(index: Int): T? {\n  return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of
this array.\n *
\n * @sample samples.collections.Collections.Elements.getOrNull\n
\npublic fun
ByteArray.getOrNull(index: Int): Byte? {\n  return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n *
\n * @sample samples.collections.Collections.Elements.getOrNull\n
\npublic fun
ShortArray.getOrNull(index: Int): Short? {\n  return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n *
\n * @sample samples.collections.Collections.Elements.getOrNull\n
\npublic fun IntArray.getOrNull(index: Int):
Int? {\n  return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the
given [index] or `null` if the [index] is out of bounds of this array.\n *
\n * @sample
samples.collections.Collections.Elements.getOrNull\n
\npublic fun LongArray.getOrNull(index: Int): Long? {\n  return if (index >= 0 && index <= lastIndex) get(index)
else null\n}\n\n/**\n * Returns an element at the given
[index] or `null` if the [index] is out of bounds of this array.\n *
\n * @sample
samples.collections.Collections.Elements.getOrNull\n
\npublic fun FloatArray.getOrNull(index: Int): Float? {\n  return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of
this array.\n *
\n * @sample samples.collections.Collections.Elements.getOrNull\n
\npublic fun
DoubleArray.getOrNull(index: Int): Double? {\n  return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n *
\n * @sample samples.collections.Collections.Elements.getOrNull\n
\npublic fun BooleanArray.getOrNull(index:

```

```

Int): Boolean? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun CharArray.getOrNull(index: Int): Char?
{\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns first index of
[element], or -1 if the array does not contain element.\n */\npublic fun <@kotlin.internal.OnlyInputTypes T>
Array<out T>.indexOf(element: T): Int {\n    if (element == null) {\n        for (index in indices) {\n            if
(this[index] == null) {\n                return index\n            }\n        }\n    } else {\n        for (index in indices) {\n
if (element == this[index]) {\n                return index\n            }\n        }\n    }\n    return -1\n}\n\n/**\n * Returns
first index of [element], or -1 if the array does not contain element.\n */\npublic fun ByteArray.indexOf(element:
Byte): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n
return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\npublic fun
ShortArray.indexOf(element:
Short): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n
return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\npublic fun
IntArray.indexOf(element: Int): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return
index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain
element.\n */\npublic fun LongArray.indexOf(element: Long): Int {\n    for (index in indices) {\n        if (element ==
this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if
the array does not contain element.\n */\n@Deprecated("The function has unclear behavior when searching for NaN
or zero values and will be removed soon. Use 'indexOfFirst { it == element }' instead to continue using this
behavior, or '.asList().indexOf(element:
T)' to get the same search behavior as in a list.", ReplaceWith("\\index\\OfFirst { it == element
}\\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\npublic fun
FloatArray.indexOf(element: Float): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n
return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not
contain element.\n */\n@Deprecated("The function has unclear behavior when searching for NaN or zero values
and will be removed soon. Use 'indexOfFirst { it == element }' instead to continue using this behavior, or
'.asList().indexOf(element: T)' to get the same search behavior as in a list.", ReplaceWith("\\index\\OfFirst { it ==
element }\\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\npublic fun
DoubleArray.indexOf(element: Double): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n
return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not
contain element.\n */\npublic fun BooleanArray.indexOf(element: Boolean): Int {\n    for (index in indices) {\n
if (element == this[index]) {\n        return index\n    }\n    return -1\n}\n\n/**\n * Returns first index of
[element], or -1 if the array does not contain element.\n */\npublic fun CharArray.indexOf(element: Char): Int {\n
for (index in indices) {\n    if (element == this[index]) {\n        return index\n    }\n    return -
1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain
such element.\n */\npublic inline fun <T> Array<out T>.indexOfFirst(predicate: (T) -> Boolean): Int {\n    for
(index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n *
Returns index of the first element
matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun
ByteArray.indexOfFirst(predicate: (Byte) -> Boolean): Int {\n    for (index in indices) {\n        if
(predicate(this[index])) {\n        return index\n    }\n    return -1\n}\n\n/**\n * Returns index of the first
element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun
ShortArray.indexOfFirst(predicate: (Short) -> Boolean): Int {\n    for (index in indices) {\n        if
(predicate(this[index])) {\n        return index\n    }\n    return -1\n}\n\n/**\n * Returns index of the first
element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun
IntArray.indexOfFirst(predicate: (Int) -> Boolean): Int {\n    for (index in indices) {\n        if (predicate(this[index]))
{\n        return index\n    }\n    return -1\n}\n\n/**\n *

```

Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun LongArray.indexOfFirst(predicate: (Long) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun FloatArray.indexOfFirst(predicate: (Float) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun DoubleArray.indexOfFirst(predicate: (Double) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun BooleanArray.indexOfFirst(predicate: (Boolean) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun CharArray.indexOfFirst(predicate: (Char) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun <T> Array<out T>.indexOfLast(predicate: (T) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun ByteArray.indexOfLast(predicate: (Byte) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun ShortArray.indexOfLast(predicate: (Short) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun IntArray.indexOfLast(predicate: (Int) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun LongArray.indexOfLast(predicate: (Long) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun FloatArray.indexOfLast(predicate: (Float) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun DoubleArray.indexOfLast(predicate: (Double) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun BooleanArray.indexOfLast(predicate: (Boolean) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.

```

*public inline fun CharArray.indexOfLast(predicate: (Char) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

```

* Returns the last element.

```

* @throws NoSuchElementException if the array is empty.
* @sample samples.collections.Collections.Elements.last
*public fun <T> Array<out T>.last(): T {
    if (isEmpty()) {
        throw NoSuchElementException("Array is empty.")
    }
    return this[lastIndex]
}

```

* Returns the last element.

```

* @throws NoSuchElementException if the array is empty.
* @sample samples.collections.Collections.Elements.last
*public fun ByteArray.last(): Byte {
    if (isEmpty()) {

```

```

throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun ShortArray.last(): Short {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun IntArray.last(): Int {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun LongArray.last():
Long {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun FloatArray.last(): Float {\n
if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n *
Returns the last element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun DoubleArray.last(): Double
{\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun BooleanArray.last():
Boolean {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun CharArray.last(): Char {\n
if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n *
Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such
element is found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun <T>
Array<out T>.last(predicate:
(T) -> Boolean): T {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ByteArray.last(predicate: (Byte) -> Boolean):
Byte {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element)) return
element\n }\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ShortArray.last(predicate:
(Short) -> Boolean): Short {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun IntArray.last(predicate: (Int) -> Boolean): Int
{\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element)) return
element\n }\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun LongArray.last(predicate:
(Long) -> Boolean): Long {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @throws

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NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun FloatArray.last(predicate: (Float) -> Boolean):
Float {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element))
return element\n }\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline
fun DoubleArray.last(predicate: (Double) -> Boolean): Double {\n for (index in this.indices.reversed()) {\n
val element = this[index]\n if (predicate(element)) return element\n }\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
* \n * @sample samples.collections.Collections.Elements.last\n *^\npublic inline fun BooleanArray.last(predicate:
(Boolean) -> Boolean): Boolean {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*^\npublic inline fun CharArray.last(predicate: (Char) -> Boolean): Char {\n for (index in this.indices.reversed())
{\n val element = this[index]\n if (predicate(element)) return element\n }\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns last index
of [element], or -1 if the array does not contain element.\n *^\npublic fun <@kotlin.internal.OnlyInputTypes T>
Array<out T>.lastIndexOf(element: T): Int {\n if (element == null) {\n for (index in indices.reversed()) {\n
if (this[index] == null) {\n return index\n }\n }\n } else {\n for (index in
indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n }\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n *^\npublic fun
ByteArray.lastIndexOf(element: Byte): Int
{\n for (index in indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n }\n
return -1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n *^\npublic fun
ShortArray.lastIndexOf(element: Short): Int {\n for (index in indices.reversed()) {\n if (element ==
this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if
the array does not contain element.\n *^\npublic fun IntArray.lastIndexOf(element: Int): Int {\n for (index in
indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n
* Returns last index of [element], or -1 if the array does not contain element.\n *^\npublic fun
LongArray.lastIndexOf(element: Long): Int {\n for (index in indices.reversed()) {\n if (element ==
this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n
*^\n@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed
soon. Use 'indexOfLast { it == element }' instead to continue using this behavior, or '.asList().lastIndexOf(element:
T)' to get the same search behavior as in a list.", ReplaceWith("indexOfLast { it == element
}"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\npublic fun
FloatArray.lastIndexOf(element: Float): Int {\n for (index in indices.reversed()) {\n if (element ==
this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if
the array does not contain element.\n *^\n@Deprecated("The function has unclear behavior when searching for NaN
or zero values and will be removed soon. Use 'indexOfLast { it == element }' instead to continue using this
behavior, or '.asList().lastIndexOf(element:
T)' to get the same search behavior as in a list.", ReplaceWith("indexOfLast { it == element
}"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\npublic fun
DoubleArray.lastIndexOf(element: Double): Int {\n for (index in indices.reversed()) {\n if (element ==

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this[index]) {\n      return index\n    }\n  }\n  return -1\n}\n\n/**\n * Returns last index of [element], or -1 if
the array does not contain element.\n */\npublic fun BooleanArray.lastIndexOf(element: Boolean): Int {\n  for
(index in indices.reversed()) {\n    if (element == this[index]) {\n      return index\n    }\n  }\n  return -
1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n */\npublic fun
CharArray.lastIndexOf(element: Char): Int {\n  for (index in indices.reversed()) {\n    if (element == this[index])
{\n      return index\n    }\n  }\n  return -1\n}\n\n/**\n
* Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> Array<out T>.lastOrNull(): T? {\n  return if
(isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n */\npublic fun ByteArray.lastOrNull(): Byte? {\n  return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n */\npublic fun ShortArray.lastOrNull(): Short? {\n  return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n */\npublic fun IntArray.lastOrNull(): Int? {\n  return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the
array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun
LongArray.lastOrNull(): Long? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic
fun FloatArray.lastOrNull(): Float? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic
fun DoubleArray.lastOrNull(): Double? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the
last element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*/\npublic fun BooleanArray.lastOrNull(): Boolean? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n
* Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic fun CharArray.lastOrNull(): Char? {\n  return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n
* Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> Array<out T>.lastOrNull(predicate: (T) ->
Boolean): T? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ByteArray.lastOrNull(predicate: (Byte) ->
Boolean): Byte? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element
matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ShortArray.lastOrNull(predicate: (Short) ->
Boolean): Short? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun IntArray.lastOrNull(predicate: (Int) ->
Boolean): Int? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun LongArray.lastOrNull(predicate:
(Long) -> Boolean): Long? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun FloatArray.lastOrNull(predicate: (Float) ->

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Boolean): Float? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun DoubleArray.lastOrNull(predicate: (Double) ->
Boolean): Double? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun
BooleanArray.lastOrNull(predicate: (Boolean) -> Boolean): Boolean? {\n  for (index in this.indices.reversed()) {\n
  val element = this[index]\n    if (predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns
the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun CharArray.lastOrNull(predicate: (Char) ->
Boolean): Char? {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if
(predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns a random element from this array.\n
* \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Array<out T>.random(): T {\n  return random(Random)\n}\n\n/**\n * Returns a random element
from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.random(): Byte {\n  return
random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun ShortArray.random(): Short {\n  return random(Random)\n}\n\n/**\n * Returns a random element from
this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.random(): Int {\n  return
random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.random(): Long {\n  return random(Random)\n}\n\n/**\n * Returns a random element from
this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.random(): Float {\n  return
random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.random(): Double {\n  return random(Random)\n}\n\n/**\n * Returns a random element
from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.random(): Boolean {\n
  return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.random(): Char {\n  return random(Random)\n}\n\n/**\n * Returns a random element from
this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is
empty.\n */\n\n@SinceKotlin("1.3")\npublic fun <T> Array<out T>.random(random: Random): T {\n  if
(isEmpty())\n    throw NoSuchElementException("Array is empty.")\n  return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n\n@SinceKotlin("1.3")\npublic fun ByteArray.random(random: Random): Byte {\n  if (isEmpty())\n    throw
NoSuchElementException("Array is empty.")\n  return get(random.nextInt(size))\n}\n\n/**\n * Returns a random
element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this
array is empty.\n */\n\n@SinceKotlin("1.3")\npublic fun ShortArray.random(random: Random): Short {\n  if
(isEmpty())\n    throw NoSuchElementException("Array is empty.")\n  return get(random.nextInt(size))\n}\n\n/**\n
* Returns a random element from this array using the specified source of randomness.\n * \n * @throws

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NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\npublic fun IntArray.random(random:
Random): Int {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\npublic
fun LongArray.random(random: Random): Long {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random
element from this array using the specified source
of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*/\n@SinceKotlin("1.3")\npublic fun FloatArray.random(random: Random): Float {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random
element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if
this array is empty.\n */\n@SinceKotlin("1.3")\npublic fun DoubleArray.random(random: Random): Double {\n
if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\npublic
fun BooleanArray.random(random: Random): Boolean {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws
NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\npublic fun
CharArray.random(random: Random): Char {\n if (isEmpty())\n throw NoSuchElementException("Array is
empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array, or `null` if
this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <T> Array<out T>.randomOrNull(): T? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this array, or `null` if this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun ByteArray.randomOrNull(): Byte? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random
element from this array, or `null`
if this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun ShortArray.randomOrNull(): Short? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this array, or `null` if this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun IntArray.randomOrNull(): Int? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random
element from this array, or `null` if this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun LongArray.randomOrNull(): Long? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this array, or `null` if this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun FloatArray.randomOrNull():
Float? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this
array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun DoubleArray.randomOrNull(): Double? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this array, or `null` if this array is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun BooleanArray.randomOrNull(): Boolean? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this array, or `null` if this array is empty.\n

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*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.randomOrNull(): Char? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T> Array<out T>.randomOrNull(random: Random): T? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ByteArray.randomOrNull(random: Random): Byte? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ShortArray.randomOrNull(random: Random): Short? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun IntArray.randomOrNull(random: Random): Int? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun LongArray.randomOrNull(random: Random): Long? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun FloatArray.randomOrNull(random: Random): Float? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun DoubleArray.randomOrNull(random: Random): Double? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun BooleanArray.randomOrNull(random: Random): Boolean? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun CharArray.randomOrNull(random: Random): Char? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\n*\npublic fun <T> Array<out T>.single(): T {\n    return when (size) {\n        0 -> throw NoSuchElementException("Array is empty.")\n        1 -> this[0]\n        else -> throw IllegalArgumentException("Array has more than one element.")\n    }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\n*\npublic fun ByteArray.single(): Byte {\n    return when (size) {\n        0 -> throw NoSuchElementException("Array is empty.")\n        1 -> this[0]\n        else -> throw IllegalArgumentException("Array has more than one element.")\n    }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\n*\npublic fun ShortArray.single(): Short {\n    return when (size) {\n        0 -> throw NoSuchElementException("Array

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is empty.}")\n    1 -> this[0]\n    else -> throw IllegalArgumentException("Array has more than one
element.")\n  }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more
than one element.\n */\npublic fun IntArray.single(): Int {\n    return when (size) {\n        0 -> throw
NoSuchElementException("Array is empty.")\n        1 -> this[0]\n        else -> throw
IllegalArgumentException("Array has more than one element.")\n    }\n}\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n */\npublic fun LongArray.single(): Long
{\n    return when (size) {\n        0 -> throw NoSuchElementException("Array is empty.")\n        1 -> this[0]\n
else -> throw IllegalArgumentException("Array has more than one element.")\n    }\n}\n}\n\n/**\n * Returns the
single element, or throws an exception if the array is empty or has more than one element.\n */\npublic
fun FloatArray.single(): Float {\n    return when (size) {\n        0 -> throw NoSuchElementException("Array is
empty.")\n        1 -> this[0]\n        else -> throw IllegalArgumentException("Array has more than one element.")\n
    }\n}\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one
element.\n */\npublic fun DoubleArray.single(): Double {\n    return when (size) {\n        0 -> throw
NoSuchElementException("Array is empty.")\n        1 -> this[0]\n        else -> throw
IllegalArgumentException("Array has more than one element.")\n    }\n}\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n */\npublic fun BooleanArray.single():
Boolean {\n    return when (size) {\n        0 -> throw NoSuchElementException("Array is empty.")\n        1 ->
this[0]\n        else -> throw IllegalArgumentException("Array has more than one element.")\n    }\n}\n}\n\n/**\n *
Returns the single element, or throws an exception if the array is empty or has more than one element.\n */\n
public fun CharArray.single(): Char {\n    return when (size) {\n        0 -> throw
NoSuchElementException("Array is empty.")\n        1 -> this[0]\n        else -> throw
IllegalArgumentException("Array has more than one element.")\n    }\n}\n}\n\n/**\n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.\n */\npublic
inline fun <T> Array<out T>.single(predicate: (T) -> Boolean): T {\n    var single: T? = null\n    var found = false\n
for (element in this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException("Array
contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if
(!found) throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n
return single as T\n}\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if
there is no or more than one matching element.\n */\npublic inline fun ByteArray.single(predicate: (Byte) ->
Boolean): Byte {\n    var single: Byte? = null\n    var found = false\n    for (element in this) {\n        if
(predicate(element)) {\n            if (found) throw IllegalArgumentException("Array contains more than one
matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n
return single as Byte\n}\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception
if there is no or more than one matching element.\n */\npublic inline fun ShortArray.single(predicate: (Short) ->
Boolean): Short {\n    var single: Short? = null\n    var found = false\n    for (element in this) {\n        if
(predicate(element)) {\n            if (found) throw IllegalArgumentException("Array
contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n
if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n
return single as Short\n}\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception
if there is no or more than one matching element.\n */\npublic inline fun IntArray.single(predicate: (Int) ->
Boolean): Int {\n    var single: Int? = null\n    var found = false\n    for (element in
this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException("Array contains more
than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found)
throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n
return single as Int\n}\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception
if there is no or more than one matching element.\n */\n

```

```

*^/npublic inline fun LongArray.single(predicate: (Long) -> Boolean): Long {^/n  var single: Long? = null^/n  var
found = false^/n  for (element in this) {^/n    if (predicate(element)) {^/n      if (found) throw
IllegalArgumentException("Array contains more than one matching element.")^/n      single = element^/n
found = true^/n    }^/n  }^/n  if (!found) throw NoSuchElementException("Array contains no element matching
the predicate.")^/n  @Suppress("UNCHECKED_CAST")^/n  return single as Long^/n}^/n/n/**^/n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.^/n *^/npublic inline fun FloatArray.single(predicate: (Float) -> Boolean): Float {^/n  var
single: Float? = null^/n  var found = false^/n  for (element in this) {^/n    if (predicate(element)) {^/n      if
(found) throw IllegalArgumentException("Array contains more than one matching element.")^/n      single =
element^/n      found = true^/n    }^/n  }^/n  if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")^/n  @Suppress("UNCHECKED_CAST")^/n  return single as Float^/n}^/n/n/**^/n
* Returns the single element matching the given [predicate], or throws exception if there is no or more than one
matching element.^/n *^/npublic inline fun DoubleArray.single(predicate: (Double) -> Boolean): Double {^/n  var
single: Double? = null^/n  var found = false^/n  for (element in this) {^/n    if (predicate(element)) {^/n      if
(found) throw IllegalArgumentException("Array contains more than one matching element.")^/n      single =
element^/n      found = true^/n    }^/n  }^/n  if (!found) throw
NoSuchElementException("Array contains no element matching the predicate.")^/n
@Suppress("UNCHECKED_CAST")^/n  return single as Double^/n}^/n/n/**^/n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.^/n *^/npublic
inline fun BooleanArray.single(predicate: (Boolean) -> Boolean): Boolean {^/n  var single: Boolean? = null^/n  var
found = false^/n  for (element in this) {^/n    if (predicate(element)) {^/n      if (found) throw
IllegalArgumentException("Array contains more than one matching element.")^/n      single = element^/n
found = true^/n    }^/n  }^/n  if (!found) throw NoSuchElementException("Array contains no element matching
the predicate.")^/n  @Suppress("UNCHECKED_CAST")^/n  return single as Boolean^/n}^/n/n/**^/n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.^/n *^/npublic
inline fun CharArray.single(predicate: (Char) -> Boolean): Char {^/n  var single: Char? = null^/n  var found =
false^/n  for (element in this) {^/n    if (predicate(element)) {^/n      if (found) throw
IllegalArgumentException("Array contains more than one matching element.")^/n      single = element^/n
found = true^/n    }^/n  }^/n  if (!found) throw NoSuchElementException("Array contains no element matching
the predicate.")^/n  @Suppress("UNCHECKED_CAST")^/n  return single as Char^/n}^/n/n/**^/n * Returns single
element, or `null` if the array is empty or has more than one element.^/n *^/npublic fun <T> Array<out
T>.singleOrNull(): T? {^/n  return if (size == 1) this[0] else null^/n}^/n/n/**^/n * Returns single element, or `null` if
the array is empty or has more than one element.^/n *^/npublic fun ByteArray.singleOrNull(): Byte? {^/n  return if
(size == 1) this[0] else null^/n}^/n/n/**^/n * Returns single element, or `null` if the array is empty or has
more than one element.^/n *^/npublic fun ShortArray.singleOrNull(): Short? {^/n  return if (size == 1) this[0] else
null^/n}^/n/n/**^/n * Returns single element, or `null` if the array is empty or has more than one element.^/n *^/npublic
fun IntArray.singleOrNull(): Int? {^/n  return if (size == 1) this[0] else null^/n}^/n/n/**^/n * Returns single element, or
`null` if the array is empty or has more than one element.^/n *^/npublic fun LongArray.singleOrNull(): Long? {^/n
return if (size == 1) this[0] else null^/n}^/n/n/**^/n * Returns single element, or `null` if the array is empty or has more
than one element.^/n *^/npublic fun FloatArray.singleOrNull(): Float? {^/n  return if (size == 1) this[0] else
null^/n}^/n/n/**^/n * Returns single element, or `null` if the array is empty or has more than one element.^/n *^/npublic
fun DoubleArray.singleOrNull(): Double? {^/n  return if (size == 1) this[0] else null^/n}^/n/n/**^/n * Returns single
element, or `null` if the array is empty or has more than one
element.^/n *^/npublic fun BooleanArray.singleOrNull(): Boolean? {^/n  return if (size == 1) this[0] else
null^/n}^/n/n/**^/n * Returns single element, or `null` if the array is empty or has more than one element.^/n *^/npublic
fun CharArray.singleOrNull(): Char? {^/n  return if (size == 1) this[0] else null^/n}^/n/n/**^/n * Returns the single
element matching the given [predicate], or `null` if element was not found or more than one element was found.^/n

```

```

*public inline fun <T> Array<out T>.singleOrNull(predicate: (T) -> Boolean): T? {
    var single: T? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun ByteArray.singleOrNull(predicate:
(Byte) -> Boolean): Byte? {
    var single: Byte? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun ShortArray.singleOrNull(predicate: (Short) -> Boolean): Short? {
    var single: Short? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun IntArray.singleOrNull(predicate:
(Int) -> Boolean): Int? {
    var single: Int? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun LongArray.singleOrNull(predicate: (Long) -> Boolean): Long? {
    var single: Long? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun FloatArray.singleOrNull(predicate:
(Float) -> Boolean): Float? {
    var single: Float? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun DoubleArray.singleOrNull(predicate: (Double) -> Boolean): Double? {
    var single: Double? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun BooleanArray.singleOrNull(predicate: (Boolean) -> Boolean): Boolean? {
    var single: Boolean? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.

*public inline fun CharArray.singleOrNull(predicate: (Char) -> Boolean): Char? {
    var single: Char? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single = element
            found = true
        }
    }
    if (!found) return null
    return single
}

Returns a list containing all elements except first [n] elements.

@throws
IllegalArgumentEception if
[n] is negative.

@sample
samples.collections.Collections.Transformations.drop

*public fun <T>
Array<out T>.drop(n: Int): List<T> {
    require(n >= 0) { "Requested element count $n is less than zero." }
    return takeLast((size - n).coerceAtLeast(0))
}

Returns a list containing all elements except first [n]
elements.

@throws
IllegalArgumentEception if [n] is negative.

@sample
samples.collections.Collections.Transformations.drop

*public fun ByteArray.drop(n: Int): List<Byte> {
    require(n >= 0) { "Requested element count $n is less than zero." }
    return takeLast((size -
n).coerceAtLeast(0))
}

Returns a list containing all elements except first [n] elements.

@throws

```

```

IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun ShortArray.drop(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
} \n return takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n]
elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun IntArray.drop(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun LongArray.drop(n: Int): List<Long> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*^npublic fun FloatArray.drop(n: Int): List<Float> {\n require(n >= 0) { \"Requested element count $n is less
than zero.\" }\n return takeLast(((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements
except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun DoubleArray.drop(n: Int): List<Double> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun BooleanArray.drop(n: Int): List<Boolean>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n
* Returns a list containing all elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n]
is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n *^npublic fun
CharArray.drop(n: Int): List<Char> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
return takeLast(((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n]
elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun <T> Array<out T>.dropLast(n: Int): List<T>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*^npublic fun ByteArray.dropLast(n: Int): List<Byte> {\n require(n >= 0) { \"Requested element count $n is less
than zero.\" }\n return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except
last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun ShortArray.dropLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *^npublic fun IntArray.dropLast(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list
containing all elements except last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n *
\n * @sample samples.collections.Collections.Transformations.drop\n *^npublic fun LongArray.dropLast(n: Int):
List<Long> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws

```



```

IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun FloatArray.dropLast(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun DoubleArray.dropLast(n:
Int): List<Double> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun BooleanArray.dropLast(n: Int):
List<Boolean> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun CharArray.dropLast(n: Int): List<Char> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T> Array<out
T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n  for (index in lastIndex downTo 0) {\n    if
(!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns
a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ByteArray.dropLastWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun
ShortArray.dropLastWhile(predicate: (Short) -> Boolean): List<Short> {\n  for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n    return take(index + 1)\n  }\n}\n  return emptyList()\n}\n\n/**\n *
Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun IntArray.dropLastWhile(predicate:
(Int) -> Boolean): List<Int> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun LongArray.dropLastWhile(predicate:
(Long) -> Boolean): List<Long> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index]))
{\n    return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all
elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun FloatArray.dropLastWhile(predicate:
(Float) -> Boolean): List<Float> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun DoubleArray.dropLastWhile(predicate:
(Double) -> Boolean): List<Double> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing
all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun
BooleanArray.dropLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n  for (index in lastIndex
downTo 0) {\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return

```

```

emptyList()\n\n\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n\n\n public inline fun
CharArray.dropLastWhile(predicate: (Char) -> Boolean): List<Char> {\n    for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n        return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n\n *
Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n\n\n public inline fun <T> Array<out T>.dropWhile(predicate: (T) -> Boolean): List<T> {\n    var yielding = false\n
val list = ArrayList<T>()\n    for (item in this)\n        if (yielding)\n            list.add(item)\n        else if
(!predicate(item)) {\n            list.add(item)\n            yielding = true\n        }\n    return list\n}\n\n\n * Returns a list
containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n\n\n public inline fun ByteArray.dropWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n    var yielding = false\n    val list = ArrayList<Byte>()\n    for (item in this)\n
if (yielding)\n        list.add(item)\n    else if (!predicate(item)) {\n        list.add(item)\n        yielding =
true\n    }\n    return list\n}\n\n\n * Returns a list containing all elements except first elements that satisfy the
given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n\n\n public inline fun
ShortArray.dropWhile(predicate: (Short) -> Boolean): List<Short> {\n    var yielding = false\n    val list =
ArrayList<Short>()\n    for (item in this)\n        if (yielding)\n            list.add(item)\n        else if (!predicate(item))
{\n            list.add(item)\n            yielding = true\n        }\n    return list\n}\n\n\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n\n\n public inline fun IntArray.dropWhile(predicate: (Int) ->
Boolean): List<Int> {\n    var yielding = false\n    val list = ArrayList<Int>()\n    for (item in this)\n        if
(yielding)\n            list.add(item)\n        else if (!predicate(item)) {\n            list.add(item)\n            yielding = true\n
        }\n    return list\n}\n\n\n * Returns a list containing all elements except
first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n\n\n public inline fun LongArray.dropWhile(predicate:
(Long) -> Boolean): List<Long> {\n    var yielding = false\n    val list = ArrayList<Long>()\n    for (item in this)\n
if (yielding)\n        list.add(item)\n    else if (!predicate(item)) {\n        list.add(item)\n        yielding =
true\n    }\n    return list\n}\n\n\n * Returns a list containing all elements except first elements that satisfy the
given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n\n\n public inline fun
FloatArray.dropWhile(predicate: (Float) -> Boolean): List<Float> {\n    var yielding = false\n    val list =
ArrayList<Float>()\n    for (item in this)\n        if (yielding)\n            list.add(item)\n        else if (!predicate(item))
{\n            list.add(item)\n            yielding = true\n        }\n    return list\n}\n\n\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n\n\n public inline fun DoubleArray.dropWhile(predicate:
(Double) -> Boolean): List<Double> {\n    var yielding = false\n    val list = ArrayList<Double>()\n    for (item in
this)\n        if (yielding)\n            list.add(item)\n        else if (!predicate(item)) {\n            list.add(item)\n
yielding = true\n        }\n    return list\n}\n\n\n * Returns a list containing all elements except first elements that
satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n\n\n public
inline fun BooleanArray.dropWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n    var yielding = false\n
val list = ArrayList<Boolean>()\n    for (item in this)\n        if (yielding)\n            list.add(item)\n        else if
(!predicate(item)) {\n            list.add(item)\n            yielding = true\n        }\n    return list\n}\n\n\n * Returns a list containing all elements
except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n\n\n public inline fun CharArray.dropWhile(predicate:
(Char) -> Boolean): List<Char> {\n    var yielding = false\n    val list = ArrayList<Char>()\n    for (item in this)\n
if (yielding)\n        list.add(item)\n    else if (!predicate(item)) {\n        list.add(item)\n        yielding =
true\n    }\n    return list\n}\n\n\n * Returns a list containing only elements matching the given [predicate].\n * \n *

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\n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun <T> Array<out
T>.filter(predicate: (T) -> Boolean): List<T> {\n    return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns
a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*/\npublic inline fun ByteArray.filter(predicate: (Byte) -> Boolean): List<Byte> {\n    return
filterTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
ShortArray.filter(predicate: (Short) -> Boolean): List<Short> {\n    return filterTo(ArrayList<Short>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun IntArray.filter(predicate: (Int) -> Boolean):
List<Int> {\n    return filterTo(ArrayList<Int>(), predicate)\n}\n\n/**\n * Returns a list containing only elements
matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline
fun LongArray.filter(predicate: (Long) -> Boolean): List<Long> {\n    return filterTo(ArrayList<Long>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun FloatArray.filter(predicate: (Float) ->
Boolean): List<Float> {\n    return filterTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list containing
only elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*/\npublic inline fun DoubleArray.filter(predicate: (Double) -> Boolean): List<Double> {\n    return
filterTo(ArrayList<Double>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
BooleanArray.filter(predicate: (Boolean) -> Boolean): List<Boolean> {\n    return filterTo(ArrayList<Boolean>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n
\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun CharArray.filter(predicate:
(Char) -> Boolean): List<Char> {\n    return filterTo(ArrayList<Char>(), predicate)\n}\n\n/**\n * Returns a list
containing only elements matching the given [predicate].\n * @param [predicate] function that takes the index of an
element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun <T> Array<out
T>.filterIndexed(predicate: (index: Int, T) -> Boolean): List<T> {\n    return filterIndexedTo(ArrayList<T>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*/\npublic inline fun ByteArray.filterIndexed(predicate: (index: Int, Byte) -> Boolean): List<Byte> {\n    return
filterIndexedTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun ShortArray.filterIndexed(predicate:
(index: Int, Short) -> Boolean): List<Short> {\n    return filterIndexedTo(ArrayList<Short>(), predicate)\n}\n\n/**\n
* Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n *
\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
IntArray.filterIndexed(predicate:
(index: Int, Int) -> Boolean): List<Int> {\n    return filterIndexedTo(ArrayList<Int>(), predicate)\n}\n\n/**\n
* Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n *
\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
LongArray.filterIndexed(predicate: (index: Int, Long) -> Boolean): List<Long> {\n    return
filterIndexedTo(ArrayList<Long>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and

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returns the result of predicate evaluation on the element.

```

samples.collections.Collections.Filtering.filterIndexed
public inline fun FloatArray.filterIndexed(predicate:
(index: Int, Float) ->
Boolean): List<Float> {
    return filterIndexedTo(ArrayList<Float>(), predicate)
}
Returns a list
containing only elements matching the given [predicate].
@param [predicate] function that takes the index of an
element and the element itself
and returns the result of predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexed
public inline fun DoubleArray.filterIndexed(predicate:
(index: Int, Double) -> Boolean): List<Double> {
    return filterIndexedTo(ArrayList<Double>(),
predicate)
}
Returns a list containing only elements matching the given [predicate].
@param
[predicate] function that takes the index of an element and the element itself
and returns the result of predicate
evaluation on the element.
samples.collections.Collections.Filtering.filterIndexed
public inline fun BooleanArray.filterIndexed(predicate: (index: Int, Boolean) -> Boolean): List<Boolean> {
    return filterIndexedTo(ArrayList<Boolean>(), predicate)
}
Returns a list containing only elements
matching the given [predicate].
@param [predicate] function that takes the index of an element and the element
itself
and returns the result of predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexed
public inline fun CharArray.filterIndexed(predicate:
(index: Int, Char) -> Boolean): List<Char> {
    return filterIndexedTo(ArrayList<Char>(), predicate)
}
Appends all elements matching the given [predicate] to the given [destination].
@param [predicate] function that
takes the index of an element and the element itself
and returns the result of predicate evaluation on the
element.
samples.collections.Collections.Filtering.filterIndexedTo
public inline fun <T, C :
MutableCollection<in T>> Array<out T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean):
C {
    forEachIndexed { index, element ->
        if (predicate(index, element)) destination.add(element)
    }
    return destination
}
Appends all elements matching the given [predicate] to the given [destination].
@param [predicate] function that takes the index of an element and the element itself
and returns the result of
predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexedTo
public inline fun <C : MutableCollection<in Byte>> ByteArray.filterIndexedTo(destination: C, predicate:
(index: Int, Byte) -> Boolean): C {
    forEachIndexed { index, element ->
        if (predicate(index, element))
destination.add(element)
    }
    return destination
}
Appends all elements matching the given
[predicate] to the given [destination].
@param [predicate] function that takes the index of an element and the
element itself
and returns the result of predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexedTo
public inline fun <C :
MutableCollection<in Short>> ShortArray.filterIndexedTo(destination: C, predicate: (index: Int, Short) ->
Boolean): C {
    forEachIndexed { index, element ->
        if (predicate(index, element))
destination.add(element)
    }
    return destination
}
Appends all elements matching the given
[predicate] to the given [destination].
@param [predicate] function that takes the index of an element and the
element itself
and returns the result of predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexedTo
public inline fun <C : MutableCollection<in Int>>
IntArray.filterIndexedTo(destination: C, predicate: (index: Int, Int) -> Boolean): C {
    forEachIndexed { index,
element ->
        if (predicate(index, element)) destination.add(element)
    }
    return destination
}
Appends all elements
matching the given [predicate] to the given [destination].
@param [predicate] function that takes the index of an
element and the element itself
and returns the result of predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexedTo
public inline fun <C : MutableCollection<in Long>>
LongArray.filterIndexedTo(destination: C, predicate: (index: Int, Long) -> Boolean): C {
    forEachIndexed {
index, element ->
        if (predicate(index, element)) destination.add(element)
    }
    return
destination
}
Appends all elements matching the given [predicate] to the given [destination].
@param
[predicate] function that takes the index of an element and the element itself
and returns the result of
predicate evaluation on the element.
samples.collections.Collections.Filtering.filterIndexedTo

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containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n *^\npublic
inline fun BooleanArray.filterNot(predicate: (Boolean) -> Boolean): List<Boolean> {\n return
filterNotTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *^\npublic inline fun
CharArray.filterNot(predicate: (Char) -> Boolean): List<Char> {\n return filterNotTo(ArrayList<Char>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements that are not `null`.\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNull\n *^\npublic fun <T : Any> Array<out T?>.filterNotNull():
List<T> {\n return filterNotNullTo(ArrayList<T>())\n}\n\n/**\n * Appends all elements that are not `null` to the
given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterNotNullTo\n *^\npublic fun <C
: MutableCollection<in T>, T : Any> Array<out T?>.filterNotNullTo(destination: C): C {\n for (element in this) if
(element != null) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*^\npublic inline fun <T, C : MutableCollection<in T>> Array<out T>.filterNotTo(destination: C, predicate: (T) ->
Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : MutableCollection<in
Byte>> ByteArray.filterNotTo(destination: C, predicate: (Byte) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*^\npublic inline fun <C : MutableCollection<in Short>> ShortArray.filterNotTo(destination: C, predicate: (Short) -
> Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterNotTo(destination: C, predicate: (Int) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : MutableCollection<in Long>>
LongArray.filterNotTo(destination: C, predicate: (Long) -> Boolean): C {\n for (element in this) if
(!predicate(element))
destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not matching the given
[predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*^\npublic inline fun <C : MutableCollection<in Float>> FloatArray.filterNotTo(destination: C, predicate: (Float) ->
Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : MutableCollection<in
Double>> DoubleArray.filterNotTo(destination: C, predicate: (Double) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*^\npublic inline fun <C : MutableCollection<in Boolean>> BooleanArray.filterNotTo(destination: C, predicate:
(Boolean) -> Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : MutableCollection<in
Char>> CharArray.filterNotTo(destination: C, predicate: (Char) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n

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*^public inline fun <T, C : MutableCollection<in T>> Array<out T>.filterTo(destination: C, predicate: (T) ->
Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n
  return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n *^public inline fun <C : MutableCollection<in
Byte>> ByteArray.filterTo(destination: C, predicate: (Byte) -> Boolean): C {\n  for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*^public inline fun <C : MutableCollection<in Short>> ShortArray.filterTo(destination: C, predicate: (Short) ->
Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^public
inline fun <C : MutableCollection<in Int>> IntArray.filterTo(destination: C, predicate: (Int) -> Boolean): C {\n
for (element in this) if (predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends
all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *^public inline fun <C : MutableCollection<in Long>>
LongArray.filterTo(destination: C, predicate: (Long) -> Boolean): C {\n  for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*^public inline fun <C : MutableCollection<in Float>> FloatArray.filterTo(destination: C, predicate: (Float) ->
Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^public inline fun <C : MutableCollection<in Double>>
DoubleArray.filterTo(destination: C, predicate: (Double) -> Boolean): C {\n  for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*^public inline fun <C : MutableCollection<in Boolean>> BooleanArray.filterTo(destination: C, predicate:
(Boolean) -> Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *^public inline fun <C : MutableCollection<in
Char>> CharArray.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n  for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Returns a list containing elements
at indices in the specified [indices] range.\n *^public fun <T> Array<out T>.slice(indices: IntRange): List<T> {\n
if (indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n *^public
fun ByteArray.slice(indices: IntRange): List<Byte> {\n  if (indices.isEmpty()) return listOf()\n  return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
indices in the specified [indices] range.\n *^public fun ShortArray.slice(indices: IntRange): List<Short> {\n  if
(indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n *^public
fun IntArray.slice(indices: IntRange): List<Int> {\n  if (indices.isEmpty()) return listOf()\n  return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
indices in the specified [indices] range.\n *^public fun LongArray.slice(indices: IntRange): List<Long> {\n  if
(indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n *^public
fun FloatArray.slice(indices: IntRange): List<Float> {\n  if (indices.isEmpty()) return listOf()\n  return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
indices in the specified [indices] range.\n *^public fun DoubleArray.slice(indices: IntRange):

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List<Double> {\n  if (indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n */\npublic
fun BooleanArray.slice(indices: IntRange): List<Boolean> {\n  if (indices.isEmpty()) return listOf()\n  return
copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at
indices in the specified [indices] range.\n */\npublic fun CharArray.slice(indices: IntRange): List<Char> {\n  if
(indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n */\npublic fun <T> Array<out
T>.slice(indices: Iterable<Int>): List<T> {\n  val size = indices.collectionSizeOrDefault(10)\n  if (size == 0)
return emptyList()\n  val list = ArrayList<T>(size)\n  for (index in indices) {\n
list.add(get(index))\n  }\n  return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*/\npublic fun ByteArray.slice(indices: Iterable<Int>): List<Byte> {\n  val size =
indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n  val list = ArrayList<Byte>(size)\n
for (index in indices) {\n  list.add(get(index))\n  }\n  return list\n}\n\n/**\n * Returns a list containing elements at
specified [indices].\n */\npublic fun ShortArray.slice(indices: Iterable<Int>): List<Short> {\n  val size =
indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n  val list = ArrayList<Short>(size)\n
for (index in indices) {\n  list.add(get(index))\n  }\n  return list\n}\n\n/**\n * Returns a list containing
elements at specified [indices].\n */\npublic fun IntArray.slice(indices: Iterable<Int>): List<Int> {\n  val size =
indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n
val list = ArrayList<Int>(size)\n  for (index in indices) {\n  list.add(get(index))\n  }\n  return
list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n */\npublic fun LongArray.slice(indices:
Iterable<Int>): List<Long> {\n  val size = indices.collectionSizeOrDefault(10)\n  if (size == 0) return
emptyList()\n  val list = ArrayList<Long>(size)\n  for (index in indices) {\n  list.add(get(index))\n  }\n
return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n */\npublic fun
FloatArray.slice(indices: Iterable<Int>): List<Float> {\n  val size = indices.collectionSizeOrDefault(10)\n  if (size
== 0) return emptyList()\n  val list = ArrayList<Float>(size)\n  for (index in indices) {\n
list.add(get(index))\n  }\n  return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*/\npublic fun DoubleArray.slice(indices: Iterable<Int>): List<Double> {\n  val size
= indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n  val list = ArrayList<Double>(size)\n
for (index in indices) {\n  list.add(get(index))\n  }\n  return list\n}\n\n/**\n * Returns a list containing
elements at specified [indices].\n */\npublic fun BooleanArray.slice(indices: Iterable<Int>): List<Boolean> {\n  val
size = indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n  val list =
ArrayList<Boolean>(size)\n  for (index in indices) {\n  list.add(get(index))\n  }\n  return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n */\npublic fun CharArray.slice(indices: Iterable<Int>):
List<Char> {\n  val size = indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n  val list =
ArrayList<Char>(size)\n  for (index in indices) {\n  list.add(get(index))\n  }\n  return list\n}\n\n/**\n *
Returns an array containing elements of this array at specified
[indices].\n */\npublic fun <T> Array<T>.sliceArray(indices: Collection<Int>): Array<T> {\n  val result =
arrayOfNulls(this, indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements
of this array at specified [indices].\n */\npublic fun ByteArray.sliceArray(indices: Collection<Int>): ByteArray {\n
val result = ByteArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements
of this array at specified [indices].\n */\npublic fun ShortArray.sliceArray(indices: Collection<Int>): ShortArray {\n
val result = ShortArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns
an array containing elements of this array at specified [indices].\n */\npublic fun IntArray.sliceArray(indices:
Collection<Int>): IntArray {\n  val result = IntArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in
indices) {\n  result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array

```



```

containing elements of this array at specified [indices].\n *\npublic fun LongArray.sliceArray(indices:
Collection<Int>): LongArray {\n    val result = LongArray(indices.size)\n    var targetIndex = 0\n    for (sourceIndex
in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n *\npublic fun FloatArray.sliceArray(indices:
Collection<Int>): FloatArray {\n    val result = FloatArray(indices.size)\n    var targetIndex = 0\n    for (sourceIndex
in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n *\npublic
fun DoubleArray.sliceArray(indices: Collection<Int>): DoubleArray {\n    val result = DoubleArray(indices.size)\n    var targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n *\npublic fun
BooleanArray.sliceArray(indices: Collection<Int>): BooleanArray {\n    val result = BooleanArray(indices.size)\n    var targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n *\npublic fun
CharArray.sliceArray(indices: Collection<Int>): CharArray {\n    val result = CharArray(indices.size)\n    var
targetIndex = 0\n    for (sourceIndex in indices) {\n        result[targetIndex++] = this[sourceIndex]\n    }\n    return result\n}\n\n/**\n * Returns an array containing
elements at indices in the specified [indices] range.\n *\npublic fun <T> Array<T>.sliceArray(indices: IntRange):
Array<T> {\n    if (indices.isEmpty()) return copyOfRange(0, 0)\n    return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices]
range.\n *\npublic fun ByteArray.sliceArray(indices: IntRange): ByteArray {\n    if (indices.isEmpty()) return
ByteArray(0)\n    return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array
containing elements at indices in the specified [indices] range.\n *\npublic fun ShortArray.sliceArray(indices:
IntRange): ShortArray {\n    if (indices.isEmpty()) return ShortArray(0)\n    return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices]
range.\n *\npublic fun IntArray.sliceArray(indices: IntRange): IntArray {\n    if (indices.isEmpty()) return
IntArray(0)\n    return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array
containing elements at indices in the specified [indices] range.\n *\npublic fun LongArray.sliceArray(indices:
IntRange): LongArray {\n    if (indices.isEmpty()) return LongArray(0)\n    return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices]
range.\n *\npublic fun FloatArray.sliceArray(indices: IntRange): FloatArray {\n    if (indices.isEmpty()) return
FloatArray(0)\n    return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array
containing elements at indices in the specified [indices] range.\n *\npublic fun DoubleArray.sliceArray(indices:
IntRange): DoubleArray {\n    if (indices.isEmpty()) return DoubleArray(0)\n    return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices]
range.\n *\npublic fun BooleanArray.sliceArray(indices: IntRange): BooleanArray {\n    if (indices.isEmpty())
return BooleanArray(0)\n    return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an
array containing elements at indices in the specified [indices] range.\n *\npublic fun CharArray.sliceArray(indices:
IntRange): CharArray {\n    if (indices.isEmpty()) return CharArray(0)\n    return copyOfRange(indices.start,
indices.endInclusive + 1)\n}\n\n/**\n * Returns a list containing first [n] elements.\n *\n * @throws
IllegalArgumentOutOfRangeException if [n] is negative.\n *\n * @sample
samples.collections.Collections.Transformations.take\n *\npublic fun <T> Array<out T>.take(n: Int): List<T> {\n    require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<T>(n)\n    for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
[n] elements.\n *\n * @throws IllegalArgumentOutOfRangeException if [n] is negative.\n *\n * @sample
samples.collections.Collections.Transformations.take\n *\npublic fun ByteArray.take(n: Int): List<Byte> {\n    require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=

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size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<Byte>(n)\n  for
(item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic fun ShortArray.take(n: Int): List<Short> {\n  require(n >= 0) { \"Requested element count $n is less
than zero.\" }\n  if (n == 0) return emptyList()\n  if (n >= size) return toList()\n  if (n == 1) return
listOf(this[0])\n  var count = 0\n  val list = ArrayList<Short>(n)\n  for (item in this) {\n    list.add(item)\n
if (++count == n)\n    break\n  }\n  return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic fun IntArray.take(n: Int): List<Int> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<Int>(n)\n
for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic fun LongArray.take(n: Int): List<Long> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<Long>(n)\n
for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic fun FloatArray.take(n: Int): List<Float> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list =
ArrayList<Float>(n)\n  for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return
list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic fun DoubleArray.take(n: Int): List<Double> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n  if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var
count = 0\n  val list = ArrayList<Double>(n)\n  for (item in this) {\n    list.add(item)\n    if (++count == n)\n
break\n  }\n  return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic fun BooleanArray.take(n: Int): List<Boolean>
{\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  if (n
>= size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<Boolean>(n)\n
for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n *
Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\npublic fun CharArray.take(n: Int): List<Char>
{\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  if (n
>= size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<Char>(n)\n
for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n *
Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample
samples.collections.Collections.Transformations.take\n
*\npublic fun <T> Array<out T>.takeLast(n: Int): List<T>
{\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  val
size = size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list =
ArrayList<T>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns
a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\npublic fun ByteArray.takeLast(n: Int): List<Byte> {\n

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require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1) return
listOf(this[size - 1])\n    val list = ArrayList<Byte>(n)\n    for (index in size - n until size)\nlist.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\n\npublic fun ShortArray.takeLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val size =
size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(this[size - 1])\n    val list = ArrayList<Short>(n)\n
for (index in size - n until size)\n        list.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\n\npublic fun IntArray.takeLast(n: Int): List<Int> {\n    require(n >= 0) {
\"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size)
return toList()\n    if (n == 1) return
listOf(this[size - 1])\n    val list = ArrayList<Int>(n)\n    for (index in size - n until size)\n        list.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic fun
LongArray.takeLast(n: Int): List<Long> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1) return
listOf(this[size - 1])\n    val list = ArrayList<Long>(n)\n    for (index in size - n until size)\nlist.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic fun
FloatArray.takeLast(n: Int): List<Float> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1) return
listOf(this[size - 1])\n    val list = ArrayList<Float>(n)\n    for (index in size - n until size)\nlist.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\n\npublic fun DoubleArray.takeLast(n: Int): List<Double>
{\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val
size = size\n
    if (n >= size) return toList()\n    if (n == 1) return
listOf(this[size - 1])\n    val list = ArrayList<Double>(n)\n    for
(index in size - n until size)\n        list.add(this[index])\n    return list\n}\n\n/**\n * Returns a list containing last [n]
elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\n\npublic fun BooleanArray.takeLast(n: Int):
List<Boolean> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return
emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(this[size - 1])\n    val
list = ArrayList<Boolean>(n)\n    for (index in size - n until size)\n        list.add(this[index])\n    return list\n}\n\n/**\n *
Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\n\npublic
fun CharArray.takeLast(n: Int): List<Char> {\n    require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1)
return
listOf(this[size - 1])\n    val list = ArrayList<Char>(n)\n    for (index in size - n until size)\nlist.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last elements satisfying the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic inline fun <T>
Array<out T>.takeLastWhile(predicate: (T) -> Boolean): List<T> {\n    for (index in lastIndex downTo 0) {\n        if
(!predicate(this[index])) {\n            return drop(index + 1)\n        }\n    }\n    return toList()\n}\n\n/**\n * Returns a
list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n */\n\npublic inline fun ByteArray.takeLastWhile(predicate:

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(Byte) -> Boolean): List<Byte> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    } \n  } \n  return toList()\n}\n\n/**\n * Returns a list containing last elements\n satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun ShortArray.takeLastWhile(predicate: (Short) -> Boolean): List<Short> {\n  for (index in lastIndex\n downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    } \n  } \n  return\n toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic inline fun IntArray.takeLastWhile(predicate: (Int)\n -> Boolean): List<Int> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return\n drop(index + 1)\n    } \n  } \n  return\n toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic inline fun LongArray.takeLastWhile(predicate:\n (Long) -> Boolean): List<Long> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return\n drop(index + 1)\n    } \n  } \n  return toList()\n}\n\n/**\n * Returns a list containing last elements\n satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun FloatArray.takeLastWhile(predicate: (Float) -> Boolean): List<Float> {\n  for (index in lastIndex\n downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    } \n  } \n  return\n toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun DoubleArray.takeLastWhile(predicate: (Double) -> Boolean): List<Double> {\n  for (index in lastIndex\n downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    } \n  } \n  return\n toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic inline fun\n BooleanArray.takeLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n  for (index in lastIndex\n downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    } \n  } \n  return\n toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic inline fun CharArray.takeLastWhile(predicate:\n (Char) -> Boolean): List<Char> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return\n drop(index + 1)\n    } \n  } \n  return toList()\n}\n\n/**\n * Returns a list containing first elements\n satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun <T> Array<out T>.takeWhile(predicate: (T) -> Boolean): List<T> {\n  val list = ArrayList<T>()\n  for\n (item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun ByteArray.takeWhile(predicate: (Byte)\n -> Boolean): List<Byte> {\n  val list = ArrayList<Byte>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n * Returns a list containing first elements satisfying the\n given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun ShortArray.takeWhile(predicate: (Short) -> Boolean): List<Short> {\n  val list =\n ArrayList<Short>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun IntArray.takeWhile(predicate: (Int) ->\n Boolean): List<Int> {\n  val list = ArrayList<Int>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n * Returns a list containing first elements satisfying the\n given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun LongArray.takeWhile(predicate: (Long) -> Boolean): List<Long> {\n  val list = ArrayList<Long>()\n  for (item\n in this) {\n    if\n (!predicate(item))\n      break\n    list.add(item)\n  } \n  return list\n}\n\n/**\n * Returns a list containing\n first elements satisfying the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.take\n */\n\npublic\n inline fun FloatArray.takeWhile(predicate:

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than [toIndex].\n *\n@SinceKotlin("1.4")\npublic fun DoubleArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint
    = (fromIndex + toIndex) / 2\n    if (fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index
    in fromIndex until midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n
    this[reverseIndex] = tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified
    range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
    of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
    or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
    than [toIndex].\n *\n@SinceKotlin("1.4")\npublic fun BooleanArray.reverse(fromIndex: Int, toIndex: Int): Unit
    {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
    (fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n
    for (index in fromIndex until midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n
    this[reverseIndex] = tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified
    range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
    of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
    or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
    than [toIndex].\n *\n@SinceKotlin("1.4")\npublic fun CharArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
    (fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until midPoint) {\n
        val tmp = this[index]\n        this[index] = this[reverseIndex]\n
    this[reverseIndex] = tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Returns a list with elements in reversed
    order.\n *\npublic fun <T> Array<out T>.reversed(): List<T> {\n    if (isEmpty()) return emptyList()\n    val list =
    toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun ByteArray.reversed(): List<Byte> {\n    if (isEmpty()) return emptyList()\n    val list =
    toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun ShortArray.reversed(): List<Short> {\n    if (isEmpty()) return emptyList()\n    val list =
    toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun IntArray.reversed(): List<Int> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n
    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements
    in reversed order.\n *\npublic fun LongArray.reversed(): List<Long> {\n    if (isEmpty()) return emptyList()\n
    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed
    order.\n *\npublic fun FloatArray.reversed(): List<Float> {\n    if (isEmpty()) return emptyList()\n    val list =
    toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun DoubleArray.reversed(): List<Double> {\n    if (isEmpty()) return emptyList()\n    val list =
    toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun BooleanArray.reversed(): List<Boolean> {\n    if (isEmpty()) return emptyList()\n    val list =
    toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\npublic fun CharArray.reversed(): List<Char> {\n    if (isEmpty()) return
    emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns an array with
    elements of this array in reversed order.\n *\npublic fun <T> Array<T>.reversedArray(): Array<T> {\n    if
    (isEmpty()) return this\n    val result = arrayOfNulls(this, size)\n    val lastIndex = lastIndexOf\n    for (i in
    0..lastIndex)\n        result[lastIndex - i] = this[i]\n    return result\n}\n\n/**\n * Returns an array with elements of this
    array in reversed order.\n *\npublic fun ByteArray.reversedArray(): ByteArray {\n    if (isEmpty()) return this\n
    val result = ByteArray(size)\n    val lastIndex = lastIndexOf\n    for (i in 0..lastIndex)\n        result[lastIndex - i] =
    this[i]\n    return result\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n *\npublic fun
    ShortArray.reversedArray(): ShortArray {\n    if (isEmpty()) return this\n    val result = ShortArray(size)\n    val
    lastIndex = lastIndexOf\n    for (i in 0..lastIndex)\n

```


https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm

```

*^@SinceKotlin("1.4")\npublic fun IntArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo 1)
{\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n * \n * See:

```

https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm

```

*^@SinceKotlin("1.4")\npublic fun LongArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo
1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n * \n * See:

```

https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm

```

*^@SinceKotlin("1.4")\npublic fun
FloatArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo 1) {\n    val j = random.nextInt(i +
1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles elements
in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:

```

https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm

```

*^@SinceKotlin("1.4")\npublic fun DoubleArray.shuffle(random: Random): Unit {\n  for (i in lastIndex
downTo 1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n * \n * See:

```

https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm

```

*^@SinceKotlin("1.4")\npublic fun BooleanArray.shuffle(random: Random): Unit {\n  for (i in
lastIndex downTo 1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random]
instance as the source of randomness.\n * \n * See:

```

https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm

```

*^@SinceKotlin("1.4")\npublic fun CharArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo
1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Sorts elements in the array in-place according to natural sort order of the value returned by specified
[selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each
other after sorting.\n * \n\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortBy(crossinline selector: (T) -
> R?): Unit {\n  if (size >
1) sortWith(compareBy(selector))\n}\n\n/**\n * Sorts elements in the array in-place descending according to
natural sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that
equal elements preserve their order relative to each other after sorting.\n * \n\npublic inline fun <T, R :
Comparable<R>> Array<out T>.sortByDescending(crossinline selector: (T) -> R?): Unit {\n  if (size > 1)
sortWith(compareByDescending(selector))\n}\n\n/**\n * Sorts elements in the array in-place descending according
to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative
to each other after sorting.\n * \n\npublic fun <T : Comparable<T>> Array<out T>.sortDescending(): Unit {\n
sortWith(reverseOrder())\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural
sort order.\n * \n\npublic fun ByteArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort
order.\n * \n\npublic fun ShortArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort order.\n * \n\npublic fun
IntArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements
in the array in-place descending according to their natural sort order.\n * \n\npublic fun LongArray.sortDescending():
Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements in the array in-place
descending according to their natural sort order.\n * \n\npublic fun FloatArray.sortDescending(): Unit {\n  if (size >

```

```

1) {\n    sort()\n    reverse()\n }{\n}\n\n/**\n * Sorts elements in the array in-place descending according to
their natural sort order.\n */\npublic fun
    DoubleArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Sorts
elements in the array in-place descending according to their natural sort order.\n */\npublic fun
    CharArray.sortDescending(): Unit {\n    if (size > 1) {\n        sort()\n        reverse()\n    }\n}\n\n/**\n * Returns a list
of all elements sorted according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements
preserve their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>> Array<out
T>.sorted(): List<T> {\n    return sortedArray().asList()\n}\n\n/**\n * Returns a list of all elements sorted according
to their natural sort order.\n */\npublic fun ByteArray.sorted(): List<Byte> {\n    return toTypedArray().apply {
    sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic
fun ShortArray.sorted(): List<Short> {\n    return toTypedArray().apply
    { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n
*/\npublic fun IntArray.sorted(): List<Int> {\n    return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n *
Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun LongArray.sorted():
List<Long> {\n    return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted
according to their natural sort order.\n */\npublic fun FloatArray.sorted(): List<Float> {\n    return
toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural
sort order.\n */\npublic fun DoubleArray.sorted(): List<Double> {\n    return toTypedArray().apply { sort()
}.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun
CharArray.sorted(): List<Char> {\n    return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n *
Returns an array with all elements of this array sorted according to their natural sort order.\n * \n * The sort is
_stable_. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T :
Comparable<T>> Array<T>.sortedArray(): Array<T> {\n    if (isEmpty()) return this\n    return this.copyOf().apply
{ sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun ByteArray.sortedArray(): ByteArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply {
    sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun ShortArray.sortedArray(): ShortArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply {
    sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun IntArray.sortedArray():
    IntArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with
all elements of this array sorted according to their natural sort order.\n */\npublic fun LongArray.sortedArray():
    LongArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array
with all elements of this array sorted according to their natural sort order.\n */\npublic fun FloatArray.sortedArray():
    FloatArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array
with all elements of this array sorted according to their natural sort order.\n */\npublic fun
    DoubleArray.sortedArray(): DoubleArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun CharArray.sortedArray(): CharArray {\n    if (isEmpty()) return this\n
    return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted
descending according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve
their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>>
    Array<T>.sortedArrayDescending(): Array<T> {\n    if (isEmpty()) return this\n    return this.copyOf().apply {
    sortWith(reverseOrder()) }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending
according to their natural sort order.\n */\npublic fun ByteArray.sortedArrayDescending(): ByteArray {\n    if
(isEmpty()) return this\n    return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all
elements of this array sorted descending according to their natural sort order.\n */\npublic fun
    ShortArray.sortedArrayDescending(): ShortArray {\n    if (isEmpty()) return this\n    return this.copyOf().apply {
    sortDescending() }\n}\n\n/**\n

```

* Returns an array with all elements of this array sorted descending according to their natural sort order.\n

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*\npublic fun IntArray.sortedArrayDescending(): IntArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n *\npublic fun LongArray.sortedArrayDescending(): LongArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n *\npublic fun FloatArray.sortedArrayDescending(): FloatArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n *\npublic fun DoubleArray.sortedArrayDescending(): DoubleArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n**\n * Returns an array with all elements of this array sorted descending according to their natural sort order.\n *\npublic fun CharArray.sortedArrayDescending(): CharArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n**\n * Returns an array with all elements of this array sorted according the specified [comparator].\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n *\npublic fun <T> Array<out T>.sortedArrayWith(comparator: Comparator<in T>): Array<out T> {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortWith(comparator) }\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortedBy(crossinline selector: (T) -> R?): List<T> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> ByteArray.sortedBy(crossinline selector: (Byte) -> R?): List<Byte> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> ShortArray.sortedBy(crossinline selector: (Short) -> R?): List<Short> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> IntArray.sortedBy(crossinline selector: (Int) -> R?): List<Int> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> LongArray.sortedBy(crossinline selector: (Long) -> R?): List<Long> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> FloatArray.sortedBy(crossinline selector: (Float) -> R?): List<Float> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> DoubleArray.sortedBy(crossinline selector: (Double) -> R?): List<Double> {\n  return sortedWith(compareBy(selector))\n}\n\n**\n * Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>> BooleanArray.sortedBy(crossinline selector: (Boolean) -> R?): List<Boolean> {\n  return

```


DoubleArray.sortedDescending(): List<Double> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n */\npublic fun

CharArray.sortedDescending():

List<Char> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n * \n * The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T> Array<out T>.sortedWith(comparator: Comparator<in T>): List<T> {\n return sortedArrayWith(comparator).asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun ByteArray.sortedWith(comparator: Comparator<in Byte>): List<Byte> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun ShortArray.sortedWith(comparator: Comparator<in Short>): List<Short> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun IntArray.sortedWith(comparator: Comparator<in Int>): List<Int> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun LongArray.sortedWith(comparator: Comparator<in Long>): List<Long> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun FloatArray.sortedWith(comparator: Comparator<in Float>): List<Float> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun DoubleArray.sortedWith(comparator: Comparator<in Double>): List<Double> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun BooleanArray.sortedWith(comparator: Comparator<in Boolean>): List<Boolean> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n */\npublic fun CharArray.sortedWith(comparator: Comparator<in Char>): List<Char> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun <T> Array<out T>.asList(): List<T>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun ByteArray.asList(): List<Byte>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun ShortArray.asList(): List<Short>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun IntArray.asList(): List<Int>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun LongArray.asList(): List<Long>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun FloatArray.asList(): List<Float>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun DoubleArray.asList(): List<Double>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun BooleanArray.asList(): List<Boolean>\n\n/**\n * Returns a [List] that wraps the original array.\n */\npublic expect fun CharArray.asList(): List<Char>\n\n/**\n * Returns `true` if the two specified arrays are *deeply* equal to one another, \n * i.e. contain the same number of the same elements in the same order.\n * \n * If two corresponding elements are nested arrays, they are also compared deeply.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * The elements of other types are compared for equality with the [equals][Any.equals] function.\n * \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic expect infix fun <T> Array<out T>.contentDeepEquals(other: Array<out T>): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *deeply* equal to one another, \n * i.e. contain the same number of the same elements in the same order.\n * \n * The specified arrays are also considered deeply equal if both are `null`.\n * \n * If two corresponding elements are nested arrays, they are also compared deeply.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * The elements of other types are compared for equality with the [equals][Any.equals] function.\n * \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n@SinceKotlin("1.4")\npublic expect infix fun <T> Array<out T>?.contentDeepEquals(other:

Array<out T>?): Boolean\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * Since Kotlin("1.1")\n @kotlin.internal.LowPriorityInOverloadResolution\n public expect fun <T> Array<out T>.contentDeepHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * Since Kotlin("1.4")\n public expect fun <T> Array<out T>?.contentDeepHashCode(): Int\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `"[...]"` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n * \n * Since Kotlin("1.1")\n @kotlin.internal.LowPriorityInOverloadResolution\n public expect fun <T> Array<out T>.contentDeepToString(): String\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `"[...]"` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n * \n * Since Kotlin("1.4")\n public expect fun <T> Array<out T>?.contentDeepToString(): String\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * Since Kotlin("1.1")\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun <T> Array<out T>.contentEquals(other: Array<out T>): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * Since Kotlin("1.1")\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun ByteArray.contentEquals(other: ByteArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * Since Kotlin("1.1")\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun ShortArray.contentEquals(other: ShortArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * Since Kotlin("1.1")\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun IntArray.contentEquals(other: IntArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * Since Kotlin("1.1")\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun LongArray.contentEquals(other: LongArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * Since Kotlin("1.1")\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun

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avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
expect infix fun FloatArray.contentEquals(other:
FloatArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n
* i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for
equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself
and `-0.0` is not equal to `0.0`.\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun
DoubleArray.contentEquals(other: DoubleArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun
BooleanArray.contentEquals(other: BooleanArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@Deprecated("Use Kotlin compiler 1.4 to
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
expect infix fun CharArray.contentEquals(other: CharArray): Boolean\n\n/**\n * Returns `true` if the two specified
arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same
order.\n * \n * The elements are compared for equality
with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `
-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun <T> Array<out
T>?.contentEquals(other: Array<out T>?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix
fun ByteArray?.contentEquals(other: ByteArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating
point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*/\n@SinceKotlin("1.4")\npublic expect infix fun ShortArray?.contentEquals(other: ShortArray?):
Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain
the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the
[equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not
equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun IntArray?.contentEquals(other: IntArray?):
Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain
the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the
[equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0`
is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun LongArray?.contentEquals(other:
LongArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n
* i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for
equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself
and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun
FloatArray?.contentEquals(other: FloatArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect

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`infix fun DoubleArray?.contentEquals(other: DoubleArray?): Boolean`
`\n\n**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun BooleanArray?.contentEquals(other: BooleanArray?): Boolean`
`\n\n**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\npublic expect infix fun CharArray?.contentEquals(other: CharArray?): Boolean`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun <T> Array<out T>.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun ByteArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun ShortArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun IntArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun LongArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun FloatArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun DoubleArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun BooleanArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun CharArray.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun <T> Array<out T>?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun ByteArray?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun ShortArray?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun IntArray?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun LongArray?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun FloatArray?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun DoubleArray?.contentHashCode(): Int`
`\n\n**\n * Returns a hash code based on the contents of this array as if it is [List].\n */\n@SinceKotlin("1.4")\npublic expect fun`


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*\n@SinceKotlin("1.4")\npublic expect fun IntArray?.contentToString(): String\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@SinceKotlin("1.4")\npublic expect fun
LongArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified
array as if it is [List].\n
 * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\npublic expect fun FloatArray?.contentToString(): String\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@SinceKotlin("1.4")\npublic expect fun
DoubleArray?.contentToString(): String\n\n/**\n * Returns a string representation of the contents of the specified
array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@SinceKotlin("1.4")\npublic expect fun BooleanArray?.contentToString(): String\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@SinceKotlin("1.4")\npublic expect fun
CharArray?.contentToString(): String\n\n/**\n * Copies this array or its subrange
into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and
even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to
copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param
startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive)
of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n
 * \n * @return the [destination] array.\n *\n@SinceKotlin("1.3")\npublic expect
fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int
= size): Array<T>\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n
 * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the
destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the
[destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy,
0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n
 * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the
subrange doesn't fit into the [destination] array starting at the specified
[destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the
[destination] array.\n *\n@SinceKotlin("1.3")\npublic expect fun ByteArray.copyInto(destination: ByteArray,
destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ByteArray\n\n/**\n * Copies this array or its
subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the
[destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param
destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by
default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param
endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the
subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is
out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\npublic expect fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int =
0, startIndex: Int = 0, endIndex: Int = size): ShortArray\n\n/**\n * Copies this array or its subrange into the
[destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even

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specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @SinceKotlin("1.3")\n * \n * public expect fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): IntArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @SinceKotlin("1.3")\n * \n * public expect fun LongArray.copyInto(destination: LongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): LongArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @SinceKotlin("1.3")\n * \n * public expect fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): FloatArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n * \n * @SinceKotlin("1.3")\n * \n * public expect fun DoubleArray.copyInto(destination: DoubleArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): DoubleArray\n * \n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this

[toIndex].\n *\npublic expect fun ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun FloatArray.copyOfRange(fromIndex: Int, toIndex: Int): FloatArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray\n\n**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic expect fun CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray\n\n**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n@SinceKotlin("1.3")\npublic expect fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n@SinceKotlin("1.3")\npublic expect fun ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the

start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun LongArray.fill(element: Long, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\n@SinceKotlin("1.3")\npublic expect fun CharArray.fill(element: Char, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val <T> Array<out T>.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val ByteArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val ShortArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val IntArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val LongArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val FloatArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val DoubleArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val BooleanArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n * \n * @public val CharArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n/**\n * Returns `true`

```

if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.isEmpty(): Boolean
{\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
* Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun IntArray.isEmpty():
Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun LongArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
* Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun FloatArray.isEmpty():
Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is
empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.isEmpty(): Boolean {\n    return size ==
0\n}\n\n/**\n * Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun
CharArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is not empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.isNotEmpty(): Boolean {\n    return
!isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic inline
fun ByteArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not
empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.isNotEmpty(): Boolean {\n    return
!isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic
inline fun IntArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not
empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun LongArray.isNotEmpty(): Boolean {\n    return
!isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic inline
fun FloatArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not
empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.isNotEmpty(): Boolean {\n    return
!isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic inline
fun BooleanArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not
empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun CharArray.isNotEmpty(): Boolean {\n    return
!isEmpty()\n}\n\n/**\n * Returns the last valid index for the array.\n *^npublic val <T> Array<out
T>.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
ByteArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
ShortArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
IntArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
LongArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
FloatArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
DoubleArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
BooleanArray.lastIndex: Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n *^npublic val
CharArray.lastIndex: Int\n    get() = size
- 1\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n
*^@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator fun <T> Array<T>.plus(element: T):
Array<T>\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n
*^npublic expect operator fun ByteArray.plus(element: Byte): ByteArray\n\n/**\n * Returns an array containing all
elements of the original array and then the given [element].\n *^npublic expect operator fun
ShortArray.plus(element: Short): ShortArray\n\n/**\n * Returns an array containing all elements of the original
array and then the given [element].\n *^npublic expect operator fun IntArray.plus(element: Int): IntArray\n\n/**\n
* Returns an array containing all elements of the original array and then the given [element].\n *^npublic expect
operator fun LongArray.plus(element: Long): LongArray\n\n/**\n * Returns an array containing all elements of the
original array

```


and then the given [element].\n *^/npublic expect operator fun FloatArray.plus(element: Float): FloatArray\n/n/**\n * Returns an array containing all elements of the original array and then the given [element].\n *^/npublic expect operator fun DoubleArray.plus(element: Double): DoubleArray\n/n/**\n * Returns an array containing all elements of the original array and then the given [element].\n *^/npublic expect operator fun BooleanArray.plus(element: Boolean): BooleanArray\n/n/**\n * Returns an array containing all elements of the original array and then the given [element].\n *^/npublic expect operator fun CharArray.plus(element: Char): CharArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator fun <T> Array<T>.plus(elements: Collection<T>): Array<T>\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun ByteArray.plus(elements: Collection<Byte>): ByteArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun ShortArray.plus(elements: Collection<Short>): ShortArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun IntArray.plus(elements: Collection<Int>): IntArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun LongArray.plus(elements: Collection<Long>): LongArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun FloatArray.plus(elements: Collection<Float>): FloatArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun DoubleArray.plus(elements: Collection<Double>): DoubleArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun BooleanArray.plus(elements: Collection<Boolean>): BooleanArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n *^/npublic expect operator fun CharArray.plus(elements: Collection<Char>): CharArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator fun <T> Array<T>.plus(elements: Array<out T>): Array<T>\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun ByteArray.plus(elements: ByteArray): ByteArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun ShortArray.plus(elements: ShortArray): ShortArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun IntArray.plus(elements: IntArray): IntArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun LongArray.plus(elements: LongArray): LongArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun FloatArray.plus(elements: FloatArray): FloatArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun DoubleArray.plus(elements: DoubleArray): DoubleArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun BooleanArray.plus(elements: BooleanArray): BooleanArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun CharArray.plus(elements: CharArray): CharArray\n/n/**\n * Returns an array containing all elements of the original array and then the given [element].\n *^/n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T> Array<T>.plusElement(element: T): Array<T>\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun IntArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n

```

* \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^\npublic expect fun LongArray.sort():
Unit\n\n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^\npublic
expect fun ByteArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArray\n *^\npublic expect fun ShortArray.sort(): Unit\n\n/**\n * Sorts the
array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^\npublic expect fun
DoubleArray.sort(): Unit\n\n/**\n * Sorts the array in-place.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArray\n *^\npublic expect fun FloatArray.sort(): Unit\n\n/**\n * Sorts the
array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^\npublic expect fun
CharArray.sort(): Unit\n\n/**\n * Sorts the array in-place according to the natural order of its elements.\n * \n * The
sort is _stable_. It means that equal elements preserve their
order relative to each other after sorting.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArrayOfComparable\n *^\npublic expect fun <T : Comparable<T>>
Array<out T>.sort(): Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n * The sort is _stable_. It means that
equal elements preserve their order relative to each other after sorting.\n * \n * @param fromIndex the start of the
range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array
by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable\n *^\n@SinceKotlin("1.4")\npublic
expect fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a
range in the array in-place.\n
* \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the
range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex]
is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*^\n@SinceKotlin("1.4")\npublic expect fun ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n
* Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by
default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n
* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
* \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n *^\n@SinceKotlin("1.4")\npublic expect
fun ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n
* \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the
range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex]
is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*^\n@SinceKotlin("1.4")\npublic expect fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n
* Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by
default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n *^\n@SinceKotlin("1.4")\npublic expect fun
LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n
* \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the
range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex]
is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*^\n@SinceKotlin("1.4")\npublic expect fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size):

```

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Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to
sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n *\n@SinceKotlin(\`1.4\`)\npublic expect fun
DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n
* @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range
(exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin(\`1.4\`)\npublic expect fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n
* Sorts elements of the array in the specified range in-place.\n * The elements are sorted descending according to
their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve their order
relative to each other after sorting.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n *
@param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex]
is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex]
is greater than [toIndex].\n *\n@SinceKotlin(\`1.4\`)\npublic fun <T : Comparable<T>> Array<out
T>.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sortWith(reverseOrder(), fromIndex,
toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted
descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to
sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n@SinceKotlin(\`1.4\`)\npublic fun
ByteArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex,
toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted
descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to
sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n@SinceKotlin(\`1.4\`)\npublic fun
ShortArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex,
toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted
descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to
sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\n@SinceKotlin(\`1.4\`)\npublic
fun IntArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex,
toIndex)\n}\n\n/**\n *
Sorts elements of the array in the specified range in-place.\n * The elements are sorted descending according to
their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex
the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than
zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *\n@SinceKotlin(\`1.4\`)\npublic fun LongArray.sortDescending(fromIndex: Int, toIndex: Int):
Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in
the specified range in-place.\n * The elements are sorted descending according to their natural sort order.\n * \n *
@param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to
sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than
zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n *\n@SinceKotlin(\`1.4\`)\npublic fun FloatArray.sortDescending(fromIndex: Int, toIndex:

```

```

Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

/**
 * Sorts elements of the array
 in the specified range in-place.
 * The elements are sorted descending according to their natural sort order.
 *
 * @param fromIndex the start of the range (inclusive) to sort.
 * @param toIndex the end of the range (exclusive) to
 sort.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
 size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
public fun DoubleArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

/**
 * Sorts elements of the
 array in the specified range in-place.
 * The elements are sorted descending according to their natural sort order.
 *
 * @param fromIndex the start of the range (inclusive) to sort.
 * @param toIndex the end of the range
 (exclusive) to sort.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
 greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
public fun CharArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

/**
 * Sorts the array in-place according to the
 order specified by the given [comparator].
 * The sort is _stable_. It means that equal elements preserve their
 order relative to each other after sorting.
 */
public expect fun <T> Array<out T>.sortWith(comparator:
Comparator<in T>): Unit

/**
 * Sorts a range in the array in-place with the given [comparator].
 *
 * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.
 *
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the
 range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex]
 is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if
 [fromIndex] is greater than [toIndex].
 */
public expect fun <T> Array<out T>.sortWith(comparator:
Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Unit

/**
 * Returns an array of Boolean containing
 all of the elements of this generic array.
 */
public fun Array<out Boolean>.toBooleanArray(): BooleanArray {
    return BooleanArray(size) { index -> this[index] }
}

/**
 * Returns an array of Byte containing all of the
 elements of this generic array.
 */
public fun Array<out Byte>.toByteArray(): ByteArray
{
    return ByteArray(size) { index -> this[index] }
}

/**
 * Returns an array of Char containing all of the
 elements of this generic array.
 */
public fun Array<out Char>.toCharArray(): CharArray {
    return
CharArray(size) { index -> this[index] }
}

/**
 * Returns an array of Double containing all of the elements of
 this generic array.
 */
public fun Array<out Double>.toDoubleArray(): DoubleArray {
    return
DoubleArray(size) { index -> this[index] }
}

/**
 * Returns an array of Float containing all of the elements of
 this generic array.
 */
public fun Array<out Float>.toFloatArray(): FloatArray {
    return FloatArray(size) {
index -> this[index] }
}

/**
 * Returns an array of Int containing all of the elements of this generic array.
 */
public fun Array<out Int>.toIntArray(): IntArray {
    return IntArray(size) { index -> this[index] }
}

/**
 * Returns an array of Long containing all of the elements of this generic array.
 */
public fun
Array<out Long>.toLongArray(): LongArray {
    return LongArray(size) { index -> this[index] }
}

/**
 * Returns an array of Short containing all of the elements of this generic array.
 */
public fun Array<out
Short>.toShortArray(): ShortArray {
    return ShortArray(size) { index -> this[index] }
}

/**
 * Returns a
 *typed* object array containing all of the elements of this primitive array.
 */
public expect fun
ByteArray.toTypedArray(): Array<Byte>

/**
 * Returns a *typed* object array containing all of the elements of
 this primitive array.
 */
public expect fun ShortArray.toTypedArray(): Array<Short>

/**
 * Returns a
 *typed* object array containing all of the elements of this primitive array.
 */
public expect fun
IntArray.toTypedArray(): Array<Int>

/**
 * Returns a *typed* object array containing all of the elements of
 this primitive array.
 */
public expect fun LongArray.toTypedArray(): Array<Long>

/**
 * Returns a *typed*
 object array containing
 all of the elements of this primitive array.
 */
public expect fun FloatArray.toTypedArray():
Array<Float>

/**
 * Returns a *typed* object array containing all of the elements of this primitive array.
 */
public expect fun DoubleArray.toTypedArray(): Array<Double>

/**
 * Returns a *typed* object array
 containing all of the elements of this primitive array.
 */
public expect fun BooleanArray.toTypedArray():

```

```

Array<Boolean>\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n
*\n\npublic expect fun CharArray.toTypedArray(): Array<Char>\n\n/**\n * Returns a [Map] containing key-value
pairs provided by [transform] function\n * applied to elements of the given array.\n * \n * If any of two pairs would
have the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order
of the original array.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n
*\n\npublic
inline fun <T, K, V> Array<out T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n *\n\npublic inline fun <K, V>
ByteArray.associate(transform: (Byte) -> Pair<K, V>): Map<K, V> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have
the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the
original array.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n
*\n\npublic inline fun <K, V> ShortArray.associate(transform: (Short) -> Pair<K, V>): Map<K, V> {\n    val
capacity = mapCapacity(size).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n *\n\npublic inline fun <K, V>
IntArray.associate(transform: (Int) -> Pair<K, V>): Map<K, V> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return
associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing key-value
pairs provided by [transform] function\n * applied to elements of the given array.\n * \n * If any of two pairs would
have the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order
of the original array.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n
*\n\npublic inline fun <K, V> LongArray.associate(transform: (Long) -> Pair<K, V>): Map<K, V> {\n    val capacity
= mapCapacity(size).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n *\n\npublic inline fun <K, V> FloatArray.associate(transform: (Float) -> Pair<K, V>): Map<K, V> {\n    val
capacity = mapCapacity(size).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n *\n\npublic inline fun <K, V>
DoubleArray.associate(transform: (Double) -> Pair<K, V>): Map<K, V> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n *
applied to elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added
to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n *\n\npublic inline fun <K, V>

```

```

BooleanArray.associate(transform: (Boolean) -> Pair<K, V>): Map<K, V> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
CharArray.associate(transform: (Char) -> Pair<K,
V>): Map<K, V> {\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return
associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing the elements
from the given array indexed by the key\n * returned from [keySelector] function applied to each element.\n * \n * If
any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <T, K>
Array<out T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, T>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves
the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
ByteArray.associateBy(keySelector: (Byte) -> K): Map<K, Byte> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Byte>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
ShortArray.associateBy(keySelector: (Short) ->
K): Map<K, Short> {\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return
associateByTo(LinkedHashMap<K, Short>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the
elements from the given array indexed by the key\n * returned from [keySelector] function applied to each
element.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to
the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
IntArray.associateBy(keySelector: (Int) -> K): Map<K, Int> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Int>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements
would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map
preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
LongArray.associateBy(keySelector: (Long) -> K): Map<K, Long> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Long>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>

```

FloatArray.associateBy(keySelector:

```
(Float) -> K): Map<K, Float> {\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return  
associateByTo(LinkedHashMap<K, Float>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the  
elements from the given array indexed by the key\n * returned from [keySelector] function applied to each  
element.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to  
the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
```

```
DoubleArray.associateBy(keySelector: (Double) -> K): Map<K, Double> {\n  val capacity =  
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Double>(capacity),  
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n * returned from [keySelector] function applied to each element.\n
```

```
\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
```

```
BooleanArray.associateBy(keySelector: (Boolean) -> K): Map<K, Boolean> {\n  val capacity =  
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Boolean>(capacity),  
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n * returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key  
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration  
order of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
```

CharArray.associateBy(keySelector:

```
(Char) -> K): Map<K, Char> {\n  val capacity = mapCapacity(size).coerceAtLeast(16)\n  return  
associateByTo(LinkedHashMap<K, Char>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the  
values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given  
array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the  
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n */\npublic inline  
fun <T, K, V> Array<out T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {\n  val  
capacity = mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, V>(capacity),  
keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform]  
and indexed by [keySelector] functions applied to elements of the given array.\n * \n * If any two elements would  
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves  
the entry iteration order of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n */\npublic inline  
fun <K, V> ByteArray.associateBy(keySelector: (Byte) -> K, valueTransform: (Byte) -> V): Map<K, V> {\n  val  
capacity = mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, V>(capacity),  
keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform]  
and indexed by [keySelector] functions applied to elements of the given array.\n * \n * If any two elements would  
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves  
the entry iteration order of the original  
array.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n */\npublic inline  
fun <K, V> ShortArray.associateBy(keySelector: (Short) -> K, valueTransform: (Short) -> V): Map<K, V> {\n  val  
capacity = mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, V>(capacity),  
keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform]  
and indexed by [keySelector] functions applied to elements of the given array.\n * \n * If any two elements would  
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves
```

```

the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n * \n public inline
fun <K, V> IntArray.associateBy(keySelector: (Int) -> K, valueTransform: (Int) -> V): Map<K, V> {\n    val
capacity = mapCapacity(size).coerceAtLeast(16)\n
    return associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Returns a
[Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to
elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last
one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n
* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n
* \n public inline fun <K, V> LongArray.associateBy(keySelector: (Long) -> K, valueTransform: (Long) -> V):
Map<K, V> {\n    val capacity = mapCapacity(size).coerceAtLeast(16)\n    return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map]
containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of
the given array.\n
* \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n
* \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n * \n public inline
fun <K, V> FloatArray.associateBy(keySelector: (Float) -> K, valueTransform: (Float) -> V): Map<K, V> {\n    val
capacity = mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, V>(capacity),
keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform]
and indexed by [keySelector] functions applied to elements of the given array.\n * \n * If any two elements would
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves
the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n * \n public inline
fun <K, V> DoubleArray.associateBy(keySelector: (Double) -> K, valueTransform: (Double) ->
V): Map<K, V> {\n    val capacity = mapCapacity(size).coerceAtLeast(16)\n    return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map]
containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of
the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets
added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n * \n public
inline fun <K, V> BooleanArray.associateBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) ->
V): Map<K, V> {\n    val capacity = mapCapacity(size).coerceAtLeast(16)\n    return
associateByTo(LinkedHashMap<K,
V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Returns a [Map] containing the values provided by
[valueTransform] and indexed by [keySelector] functions applied to elements of the given array.\n * \n * If any two
elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The
returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n * \n public inline
fun <T, K, M : MutableMap<in K, in T>> Array<out T>.associateByTo(destination: M, keySelector: (T) -> K): M
{\n    for (element in this) {\n        destination.put(keySelector(element), element)\n    }\n    return

```


destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Byte>> ByteArray.associateByTo(destination: M, keySelector: (Byte) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Short>> ShortArray.associateByTo(destination: M, keySelector: (Short) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Int>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Long>> LongArray.associateByTo(destination: M, keySelector: (Long) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Float>> FloatArray.associateByTo(destination: M, keySelector: (Float) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Double>> DoubleArray.associateByTo(destination: M, keySelector: (Double) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Boolean>> BooleanArray.associateByTo(destination: M, keySelector: (Boolean) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any two elements would

have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n * \n * \n * public inline fun <K, M :
MutableMap<in K, in Char>> CharArray.associateByTo(destination: M, keySelector: (Char) -> K): M {\n for
(element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n * \n * \n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the
given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n * \n * \n * public
inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateByTo(destination: M, keySelector: (T) ->
> K, valueTransform: (T) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n * \n * \n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the
map.\n * \n * @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n * \n * \n * public
inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateByTo(destination: M, keySelector: (Byte) ->
K, valueTransform: (Byte) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n * \n * \n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n * \n * \n * public
inline fun <K, V, M : MutableMap<in K, in V>> ShortArray.associateByTo(destination: M, keySelector: (Short) ->
K, valueTransform: (Short) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n * \n * \n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n * \n * \n * public
inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K,
valueTransform: (Int) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n * \n * \n * Populates and returns the [destination] mutable
map with

key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by the
[valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the same
key returned by [keySelector] the last one gets added to the map.\n * \n * @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n * \n * \n * public
inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateByTo(destination: M, keySelector: (Long) ->
K, valueTransform: (Long) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n * \n * \n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned

by [keySelector] the last one gets added to the map.\n * \n * @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n * \n * \n * public
inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateByTo(destination: M, keySelector: (Float) ->

```

K, valueTransform: (Float) -> V): M {\n  for (element in this) {\n    destination.put(keySelector(element),
valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateByTo(destination:
M, keySelector: (Double) -> K, valueTransform: (Double) -> V): M {\n  for (element in this) {\n
destination.put(keySelector(element), valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\n
public inline fun <K, V, M : MutableMap<in K, in V>> BooleanArray.associateByTo(destination: M,
keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): M {\n  for (element in this) {\n
destination.put(keySelector(element), valueTransform(element))\n  }\n  return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the
given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateByTo(destination: M, keySelector: (Char) ->
K, valueTransform: (Char) -> V): M {\n  for (element in this) {\n    destination.put(keySelector(element),
valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If
any of two pairs would have the same key the last one gets added
to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n */\npublic
inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateTo(destination: M, transform:
(T) -> Pair<K, V>): M {\n  for (element in this) {\n    destination += transform(element)\n  }\n  return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by
[transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key
the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n */\npublic inline fun <K, V, M :
MutableMap<in K, in V>> ByteArray.associateTo(destination: M, transform: (Byte) -> Pair<K, V>): M {\n  for
(element in this) {\n    destination += transform(element)\n  }\n  return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value
pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs
would have the same key the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n */\npublic inline fun <K, V, M :
MutableMap<in K, in V>> ShortArray.associateTo(destination: M, transform: (Short) -> Pair<K, V>): M {\n  for
(element in this) {\n    destination += transform(element)\n  }\n  return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each
element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateTo(destination: M, transform: (Int) -> Pair<K,
V>): M {\n  for
(element in this) {\n    destination += transform(element)\n  }\n  return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each

```

element of the given array.

If any of two pairs would have the same key the last one gets added to the map.

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo

```

*\npublic inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateTo(destination: M, transform: (Long) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *\npublic inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateTo(destination: M, transform: (Float) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *\npublic inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateTo(destination: M, transform: (Double) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *\npublic inline fun <K, V, M : MutableMap<in K, in V>> BooleanArray.associateTo(destination: M, transform: (Boolean) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n *\npublic inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateTo(destination: M, transform: (Char) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n *\n@SinceKotlin("1.4")\npublic inline fun <K, V> Array<out K>.associateWith(valueSelector: (K) -> V): Map<K, V> {\n val result = LinkedHashMap<K, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V> ByteArray.associateWith(valueSelector: (Byte) -> V): Map<Byte, V> {\n val result = LinkedHashMap<Byte, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V> ShortArray.associateWith(valueSelector: (Short) -> V): Map<Short, V> {\n val result = LinkedHashMap<Short, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result,

```

valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
IntArray.associateWith(valueSelector: (Int) -> V): Map<Int, V> {\n val result = LinkedHashMap<Int, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
LongArray.associateWith(valueSelector: (Long) -> V): Map<Long, V> {\n val result = LinkedHashMap<Long, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
FloatArray.associateWith(valueSelector: (Float) -> V): Map<Float, V> {\n val result = LinkedHashMap<Float, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
DoubleArray.associateWith(valueSelector: (Double) -> V): Map<Double, V> {\n val result = LinkedHashMap<Double, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
BooleanArray.associateWith(valueSelector: (Boolean) -> V): Map<Boolean, V> {\n val result = LinkedHashMap<Boolean, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
CharArray.associateWith(valueSelector: (Char) -> V): Map<Char, V> {\n val result = LinkedHashMap<Char, V>(mapCapacity(size).coerceAtMost(128)).coerceAtLeast(16)\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo\n */\n@SinceKotlin("1.4")\npublic inline fun <K, V, M : MutableMap<in K, in V>> Array<out

```

K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {
  for (element in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Byte, in V>>
ByteArray.associateWithTo(destination: M, valueSelector: (Byte) -> V): M {
  for (element in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic
inline fun <V, M : MutableMap<in Short, in V>> ShortArray.associateWithTo(destination: M, valueSelector:
(Short) -> V): M {
  for (element in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Int, in V>>
IntArray.associateWithTo(destination: M, valueSelector: (Int) -> V): M {
  for (element in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Long, in V>>
LongArray.associateWithTo(destination: M, valueSelector: (Long) -> V): M {
  for (element in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Float, in V>>
FloatArray.associateWithTo(destination: M, valueSelector: (Float) -> V): M {
  for (element in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample samples.collections.Collections.Transformations.associateWithTo

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <V, M : MutableMap<in Double, in V>>
DoubleArray.associateWithTo(destination: M, valueSelector: (Double) -> V): M {
  for (element
in this) {
    destination.put(element, valueSelector(element))
  }
  return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given array, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map.

@sample

samples.collections.Collections.Transformations.associateWithTo

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Boolean, in V>> BooleanArray.associateWithTo(destination: M, valueSelector: (Boolean) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided
```

```
by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Char, in V>> CharArray.associateWithTo(destination: M, valueSelector: (Char) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <T, C : MutableCollection<in T>> Array<out T>.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Byte>> ByteArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n
```

```
\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Short>> ShortArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Int>> IntArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Long>>
```

```
LongArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C :
```

```
MutableCollection<in Float>> FloatArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Double>>
```

```
DoubleArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C :
```

```
MutableCollection<in Boolean>> BooleanArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Char>> CharArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun <T> Array<out T>.toHashSet(): HashSet<T> {\n    return
```

```
toCollection(HashSet<T>(mapCapacity(size)))\n}\n\n/**\n
```

```
* Returns a new [HashSet] of all elements.\n *\npublic fun ByteArray.toHashSet(): HashSet<Byte> {\n    return toCollection(HashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun ShortArray.toHashSet(): HashSet<Short> {\n    return
```

```
toCollection(HashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun IntArray.toHashSet(): HashSet<Int> {\n    return
```

```
toCollection(HashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun LongArray.toHashSet(): HashSet<Long> {\n    return
```

```
toCollection(HashSet<Long>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun FloatArray.toHashSet(): HashSet<Float> {\n    return
```

```
toCollection(HashSet<Float>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun DoubleArray.toHashSet(): HashSet<Double> {\n    return
```

```
toCollection(HashSet<Double>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun BooleanArray.toHashSet(): HashSet<Boolean> {\n    return
```

```
toCollection(HashSet<Boolean>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun CharArray.toHashSet(): HashSet<Char> {\n    return
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toCollection(HashSet<Char>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun ByteArray.toHashSet(): HashSet<Byte> {\n    return
```

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toCollection(HashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun ShortArray.toHashSet(): HashSet<Short> {\n    return
```

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toCollection(HashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun IntArray.toHashSet(): HashSet<Int> {\n    return
```

```
toCollection(HashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n *\npublic fun LongArray.toHashSet(): HashSet<Long> {\n    return
```

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toCollection(HashSet<Boolean>(mapCapacity(size)))\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun CharArray.toHashSet(): HashSet<Char> {\n    return\n    toCollection(HashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/**\n * Returns a [List] containing all\n elements.\n */\npublic fun <T> Array<out T>.toList(): List<T> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all\n elements.\n */\npublic fun ByteArray.toList(): List<Byte> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun ShortArray.toList(): List<Short> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun IntArray.toList(): List<Int> {\n    return\n    when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun LongArray.toList(): List<Long> {\n    return when (size)\n    {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a\n [List] containing all elements.\n */\npublic fun FloatArray.toList(): List<Float> {\n    return when (size) {\n        0 ->\n        emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List]\n containing all elements.\n */\npublic fun DoubleArray.toList(): List<Double> {\n    return when (size) {\n        0 ->\n        emptyList()\n        1\n        -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun BooleanArray.toList(): List<Boolean> {\n    return when (size) {\n        0 -> emptyList()\n        1 ->\n        listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun CharArray.toList(): List<Char> {\n    return when (size) {\n        0 -> emptyList()\n        1 ->\n        listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a new [MutableList] filled with all\n elements of this array.\n */\npublic fun <T> Array<out T>.toMutableList(): MutableList<T> {\n    return\n    ArrayList(this.asCollection())\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun ByteArray.toMutableList(): MutableList<Byte> {\n    val list = ArrayList<Byte>(size)\n    for (item\n    in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList]\n filled with all elements of this array.\n */\npublic fun ShortArray.toMutableList(): MutableList<Short> {\n    val list\n    = ArrayList<Short>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new\n [MutableList] filled with all elements of this array.\n */\npublic fun IntArray.toMutableList(): MutableList<Int> {\n    val list = ArrayList<Int>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new\n [MutableList] filled with all elements of this array.\n */\npublic fun LongArray.toMutableList():\n    MutableList<Long> {\n    val list = ArrayList<Long>(size)\n    for (item in this) list.add(item)\n    return\n    list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun\n    FloatArray.toMutableList(): MutableList<Float> {\n    val list = ArrayList<Float>(size)\n    for (item in this)\n    list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of\n this array.\n */\npublic fun DoubleArray.toMutableList(): MutableList<Double> {\n    val list =\n    ArrayList<Double>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new\n [MutableList] filled with all elements of this array.\n */\npublic fun BooleanArray.toMutableList():\n    MutableList<Boolean> {\n    val list = ArrayList<Boolean>(size)\n    for (item in this) list.add(item)\n    return\n    list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun\n    CharArray.toMutableList(): MutableList<Char> {\n    val list = ArrayList<Char>(size)\n    for (item in this)\n    list.add(item)\n    return list\n}\n\n/**\n * Returns a [Set] of all elements.\n * * The returned set preserves the\n element iteration order of the original array.\n */\npublic fun <T> Array<out T>.toSet(): Set<T> {\n    return when\n    (size) {\n        0 -> emptySet()\n        1 -> setOf(this[0])\n        else ->\n        toCollection(LinkedHashSet<T>(mapCapacity(size)))\n    }\n}\n\n/**\n * Returns a [Set] of all elements.\n * * The returned set preserves the element iteration order of\n the original array.\n */\npublic fun ByteArray.toSet(): Set<Byte> {\n    return when (size) {\n        0 -> emptySet()\n        1 -> setOf(this[0])\n        else -> toCollection(LinkedHashSet<Byte>(mapCapacity(size)))\n    }\n}\n\n/**\n *

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Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the original array.\n
*\npublic fun ShortArray.toSet(): Set<Short> {\n    return when (size) {\n        0 -> emptySet()\n        1 ->
setOf(this[0])\n        else -> toCollection(LinkedHashSet<Short>(mapCapacity(size)))\n    }\n}\n\n**\n * Returns a
[Set] of all elements.\n * \n * The returned set preserves the element iteration order of the original array.\n *\npublic
fun IntArray.toSet(): Set<Int> {\n    return when (size) {\n        0 -> emptySet()\n        1 -> setOf(this[0])\n        else -
-> toCollection(LinkedHashSet<Int>(mapCapacity(size)))\n    }\n}\n\n**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of
the original array.\n *\npublic fun LongArray.toSet(): Set<Long> {\n    return when (size) {\n        0 ->
emptySet()\n        1 -> setOf(this[0])\n        else -> toCollection(LinkedHashSet<Long>(mapCapacity(size)))\n    }\n}\n\n**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the
original array.\n *\npublic fun FloatArray.toSet(): Set<Float> {\n    return when (size) {\n        0 -> emptySet()\n
        1 -> setOf(this[0])\n        else -> toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n    }\n}\n\n**\n *
Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the original array.\n
*\npublic fun DoubleArray.toSet(): Set<Double> {\n    return when (size) {\n        0 -> emptySet()\n        1 ->
setOf(this[0])\n        else -> toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n    }\n}\n\n**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of
the original array.\n *\npublic fun BooleanArray.toSet(): Set<Boolean> {\n    return when (size) {\n        0 ->
emptySet()\n        1 -> setOf(this[0])\n        else -> toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n    }\n}\n\n**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the
original array.\n *\npublic fun CharArray.toSet(): Set<Char> {\n    return when (size) {\n        0 -> emptySet()\n
        1 -> setOf(this[0])\n        else -> toCollection(LinkedHashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n    }\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on
each element of original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <T,
R> Array<out T>.flatMap(transform: (T) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R> ByteArray.flatMap(transform:
(Byte) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element of original array.\n *
\n * @sample samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R>
ShortArray.flatMap(transform: (Short) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R> IntArray.flatMap(transform:
(Int) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element of original array.\n *
\n * @sample samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R>
LongArray.flatMap(transform: (Long) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R> FloatArray.flatMap(transform:
(Float) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single
list of all elements yielded from results of [transform]
function being invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R>
DoubleArray.flatMap(transform: (Double) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being

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invoked on each element of original array.\n * \n * @sample

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samples.collections.Collections.Transformations.flatMap\n */\npublic inline fun <R>
BooleanArray.flatMap(transform: (Boolean) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n */\npublic inline fun <R> CharArray.flatMap(transform:
(Char) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of
original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic inline fun <T, R> Array<out
T>.flatMap(transform: (T) -> Sequence<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun
<T, R> Array<out T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample
samples.collections.Collections.Transformations.flatMapIndexed\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.flatMapIndexed(transform: (index: Int, Byte) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample
samples.collections.Collections.Transformations.flatMapIndexed\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ShortArray.flatMapIndexed(transform: (index: Int, Short) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample
samples.collections.Collections.Transformations.flatMapIndexed\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.flatMapIndexed(transform: (index: Int, Int) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample
samples.collections.Collections.Transformations.flatMapIndexed\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> LongArray.flatMapIndexed(transform: (index: Int, Long) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample
samples.collections.Collections.Transformations.flatMapIndexed\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.flatMapIndexed(transform: (index: Int, Float) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.flatMapIndexed(transform: (index: Int, Double) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the
original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.flatMapIndexed(transform: (index: Int, Boolean) -> Iterable<R>): List<R> {\n
return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded
from results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.flatMapIndexed(transform: (index: Int, Char)
-> Iterable<R>): List<R> {\n  return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a
single list of all elements yielded from results of [transform] function being invoked on each element\n * and its
index in the original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedSequence")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R> Array<out T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform: (index:
Int, T) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,
element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> ByteArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Byte) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val
list = transform(index++, element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends
all elements yielded from results of [transform] function being invoked on each element\n * and its index in the
original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> ShortArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Short) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,

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element)\n    destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <R, C : MutableCollection<in R>> IntArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Int) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++, element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> LongArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Long)
-> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++, element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> FloatArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Float) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n    destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and
its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> DoubleArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Double) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n    destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in
R>> BooleanArray.flatMapIndexedTo(destination: C, transform: (index: Int, Boolean) -> Iterable<R>): C {\n    var
index = 0\n    for (element in this) {\n        val list = transform(index++, element)\n    destination.addAll(list)\n
}\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> CharArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Char) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n    destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the
original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npub
lic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(index++, element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n */\npublic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapTo(destination: C,
transform: (T) -> Iterable<R>): C {\n    for (element in this) {\n
        val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> ByteArray.flatMapTo(destination: C,
transform: (Byte) -> Iterable<R>): C {\n    for (element in this) {\n
        val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> ShortArray.flatMapTo(destination: C, transform: (Short) -> Iterable<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results
of [transform] function being invoked on each element of original array, to the given [destination].\n */\npublic
inline fun <R, C : MutableCollection<in R>> IntArray.flatMapTo(destination: C, transform: (Int) -> Iterable<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
LongArray.flatMapTo(destination: C, transform: (Long) -> Iterable<R>): C {\n    for (element in this) {\n        val
list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
FloatArray.flatMapTo(destination: C, transform: (Float) -> Iterable<R>): C {\n    for (element in this) {\n        val
list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> DoubleArray.flatMapTo(destination: C,
transform: (Double) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> BooleanArray.flatMapTo(destination: C, transform: (Boolean) ->
Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> CharArray.flatMapTo(destination: C, transform: (Char) -> Iterable<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapSequenceTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Array<out T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n
        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the original array by the
key returned by the given [keySelector] function\n * applied to each element and returns a map where each group
key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order
of the keys produced from the original array.\n * \n * @sample

```

samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun <T, K> Array<out T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {\n return groupByTo(LinkedHashMap<K, MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n *

@sample samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun <K> ByteArray.groupBy(keySelector: (Byte) -> K): Map<K, List<Byte>> {\n return groupByTo(LinkedHashMap<K, MutableList<Byte>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */>\npublic

inline fun <K> ShortArray.groupBy(keySelector: (Short) -> K): Map<K, List<Short>> {\n return groupByTo(LinkedHashMap<K, MutableList<Short>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated

with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun <K> IntArray.groupBy(keySelector: (Int) -> K): Map<K, List<Int>> {\n return

groupByTo(LinkedHashMap<K, MutableList<Int>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample

samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun <K>

LongArray.groupBy(keySelector: (Long) -> K): Map<K, List<Long>> {\n return groupByTo(LinkedHashMap<K, MutableList<Long>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample

samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun <K>

FloatArray.groupBy(keySelector: (Float) -> K): Map<K, List<Float>> {\n return groupByTo(LinkedHashMap<K, MutableList<Float>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */>\npublic

inline fun <K> DoubleArray.groupBy(keySelector:

(Double) -> K): Map<K, List<Double>> {\n return groupByTo(LinkedHashMap<K, MutableList<Double>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun

<K> BooleanArray.groupBy(keySelector: (Boolean) -> K): Map<K, List<Boolean>> {\n return groupByTo(LinkedHashMap<K, MutableList<Boolean>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration

order of the keys produced from the original array.\n * \n * @sample

samples.collections.Collections.Transformations.groupBy\n */>\npublic inline fun <K>

DoubleArray.groupBy(keySelector:

```
(Double) -> K, valueTransform: (Double) -> V): Map<K, List<V>> {\n  return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n */\n\npublic inline fun <K, V> BooleanArray.groupBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): Map<K, List<V>> {\n  return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\n\npublic inline fun <K, V> CharArray.groupBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, List<V>> {\n  return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <T, K, M : MutableMap<in K, MutableList<T>>>
```

```
Array<out T>.groupByTo(destination: M, keySelector: (T) -> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<T>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <K, M : MutableMap<in K, MutableList<Byte>>> ByteArray.groupByTo(destination: M, keySelector: (Byte) -> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Byte>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <K, M : MutableMap<in K, MutableList<Short>>> ShortArray.groupByTo(destination: M, keySelector: (Short) -> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Short>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <K, M : MutableMap<in K, MutableList<Int>>> IntArray.groupByTo(destination: M, keySelector: (Int) -> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Int>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <K, M : MutableMap<in K, MutableList<Long>>> LongArray.groupByTo(destination: M, keySelector: (Long) -> K): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<Long>() }\n    list.add(element)\n  }\n  return destination\n}\n\n/**\n * Groups elements
```


of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * ^\npublic inline fun <K, M : MutableMap<in K, MutableList<Float>>> FloatArray.groupByTo(destination: M, keySelector: (Float) -> K): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<Float>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * ^\npublic inline fun <K, M : MutableMap<in K, MutableList<Double>>> DoubleArray.groupByTo(destination: M, keySelector: (Double) -> K): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<Double>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * ^\npublic inline fun <K, M : MutableMap<in K, MutableList<Boolean>>> BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<Boolean>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n * ^\npublic inline fun <K, M : MutableMap<in K, MutableList<Char>>> CharArray.groupByTo(destination: M, keySelector: (Char) -> K): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<Char>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n * ^\npublic inline fun <T, K, V, M : MutableMap<in K, MutableList<V>>> Array<out T>.groupByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n * ^\npublic inline fun <K, V, M : MutableMap<in K, MutableList<V>>> ByteArray.groupByTo(destination: M, keySelector: (Byte) -> K, valueTransform: (Byte) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n * ^\npublic inline fun <K, V, M : MutableMap<in K, MutableList<V>>> ShortArray.groupByTo(destination: M, keySelector: (Short) -> K, valueTransform: (Short) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key)

```

{ ArrayList<V>() }) list.add(valueTransform(element)) return destination}
}

/** Groups values returned by the [valueTransform] function applied to each element of the original array by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.
 */
@return The [destination] map.
 */
@sample
samples.collections.Collections.Transformations.groupByKeyAndValues

/** public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> IntArray.groupByTo(destination: M, keySelector: (Int) -> K, valueTransform: (Int) -> V): M {
for (element in this) {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
}
return destination}

/** Groups values returned by the [valueTransform] function applied to each element of the original array by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.
 */
@return The [destination] map.
 */
@sample
samples.collections.Collections.Transformations.groupByKeyAndValues

/** public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> LongArray.groupByTo(destination: M, keySelector: (Long) -> K, valueTransform: (Long) -> V): M {
for (element in this) {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
}
return destination}

/** Groups values returned by the [valueTransform] function applied to each element of the original array by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.
 */
@return The [destination] map.
 */
@sample
samples.collections.Collections.Transformations.groupByKeyAndValues

/** public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> FloatArray.groupByTo(destination: M, keySelector: (Float) -> K, valueTransform: (Float) -> V): M {
for (element in this) {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
}
return destination}

/** Groups values returned by the [valueTransform] function applied to each element of the original array by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.
 */
@return The [destination] map.
 */
@sample
samples.collections.Collections.Transformations.groupByKeyAndValues

/** public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> DoubleArray.groupByTo(destination: M, keySelector: (Double) -> K, valueTransform: (Double) -> V): M {
for (element in this) {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
}
return destination}

/** Groups values returned by the [valueTransform] function applied to each element of the original array by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.
 */
@return The [destination] map.
 */
@sample
samples.collections.Collections.Transformations.groupByKeyAndValues

/** public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): M {
for (element in this) {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
}
return destination}

/** Groups values returned by the [valueTransform] function applied to each element of the original array by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.
 */
@return The [destination] map.
 */
@sample
samples.collections.Collections.Transformations.groupByKeyAndValues

/** public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> CharArray.groupByTo(destination: M, keySelector: (Char) -> K, valueTransform: (Char) -> V): M {
for (element in this) {
    val key = keySelector(element)
    val list = destination.getOrPut(key) { ArrayList<V>() }
    list.add(valueTransform(element))
}
return destination}

/** Creates a [Grouping] source from an array to be used later
 */

```

with one of group-and-fold operations\n * using the specified [keySelector] function to extract a key from each element.\n * \n * @sample samples.collections.Grouping.groupingByEachCount\n

```

*^@SinceKotlin("1.1")\npublic inline fun <T, K> Array<out T>.groupingBy(crossinline keySelector: (T) -> K):
Grouping<T, K> {\n    return object : Grouping<T, K> {\n        override fun sourceIterator(): Iterator<T> =
this@groupingBy.iterator()\n        override fun keyOf(element: T): K = keySelector(element)\n    }\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.map\n *^@npublic inline fun <T, R>
Array<out T>.map(transform: (T) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element in the original
array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> ByteArray.map(transform: (Byte)
-> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> ShortArray.map(transform:
(Short) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> IntArray.map(transform: (Int) ->
R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results
of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> LongArray.map(transform:
(Long) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> FloatArray.map(transform: (Float)
-> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> DoubleArray.map(transform:
(Double) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R> BooleanArray.map(transform:
(Boolean) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list
containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.map\n *^@npublic inline fun <R>
CharArray.map(transform: (Char) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element and its index in
the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and
returns the result of the transform applied to the element.\n *^@npublic inline fun <T, R> Array<out
T>.mapIndexed(transform: (index: Int, T) -> R): List<R> {\n    return mapIndexedTo(ArrayList<R>(size),
transform)\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element and its index in
the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and
returns the result of the transform applied to the element.\n *^@npublic inline fun <R>
ByteArray.mapIndexed(transform: (index: Int, Byte) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *^@npublic inline fun <R> ShortArray.mapIndexed(transform: (index: Int, Short) -> R): List<R> {\n
return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying
the given [transform] function\n

```

* to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R> IntArray.mapIndexed(transform: (index: Int, Int) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R> LongArray.mapIndexed(transform: (index: Int, Long) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R> FloatArray.mapIndexed(transform: (index: Int, Float) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R> DoubleArray.mapIndexed(transform: (index: Int, Double) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R> BooleanArray.mapIndexed(transform: (index: Int, Boolean) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R> CharArray.mapIndexed(transform: (index: Int, Char) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing only the non-null results of applying the given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <T, R : Any> Array<out T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): List<R> {\n return mapIndexedNotNullTo(ArrayList<R>(), transform)\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n * and appends only the non-null results to the given [destination].\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <T, R : Any, C : MutableCollection<in R>> Array<out T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {\n forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }\n return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {\n var index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <R, C : MutableCollection<in R>> ByteArray.mapIndexedTo(destination: C, transform: (index: Int, Byte) -> R): C {\n var index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.

the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
ShortArray.mapIndexedTo(destination: C, transform: (index: Int, Short) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
IntArray.mapIndexedTo(destination: C, transform: (index: Int, Int) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
LongArray.mapIndexedTo(destination: C, transform: (index: Int, Long) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
FloatArray.mapIndexedTo(destination: C, transform: (index: Int, Float) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
DoubleArray.mapIndexedTo(destination: C, transform: (index: Int, Double) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
BooleanArray.mapIndexedTo(destination: C, transform: (index: Int, Boolean) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>>
CharArray.mapIndexedTo(destination: C, transform: (index: Int, Char) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}

```

Returns a list containing only the non-null results of applying the given [transform] function to each element in the original array.

@sample samples.collections.Collections.Transformations.mapNotNull

```

public inline fun <T, R : Any> Array<out T>.mapNotNull(transform: (T) -> R?): List<R> {
    return mapNotNullTo(ArrayList<R>(), transform)
}

```

Applies the given [transform] function to each element in the original array and appends only the non-null results to the given [destination].

```

public inline fun <T, R : Any, C : MutableCollection<in R>>
Array<out T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {
    forEach { element -> transform(element)?.let { destination.add(it) } }
    return destination
}

```

Applies the given [transform] function to each element of the original array and appends the results to the given [destination].

```

public inline fun <T, R, C : MutableCollection<in R>>
Array<out T>.mapTo(destination: C, transform: (T) -> R): C {
    for (item in this)
        destination.add(transform(item))
    return destination
}

```

Applies the given [transform] function to each element of the original array and appends the results to the given [destination].

```

public inline fun <R, C : MutableCollection<in R>>
ByteArray.mapTo(destination: C, transform: (Byte) -> R): C {
    for (item in this)
        destination.add(transform(item))
    return destination
}

```

```

destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and
appends the results to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
ShortArray.mapTo(destination: C, transform: (Short) -> R): C {\n  for (item in this)\n
destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in
R>> IntArray.mapTo(destination: C, transform: (Int) -> R): C {\n  for (item in this)\n
destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> LongArray.mapTo(destination: C, transform: (Long) -> R): C {\n  for (item in this)\n
destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to
each element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R,
C : MutableCollection<in R>> FloatArray.mapTo(destination: C, transform: (Float) -> R): C {\n  for (item in
this)\n  destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results
to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
DoubleArray.mapTo(destination: C, transform: (Double) -> R): C {\n  for (item in this)\n
destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> BooleanArray.mapTo(destination: C, transform: (Boolean) -> R): C {\n  for (item in
this)\n  destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n */\npublic
inline fun <R, C : MutableCollection<in R>> CharArray.mapTo(destination: C, transform: (Char) -> R): C {\n  for
(item in this)\n  destination.add(transform(item))\n  return destination\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and
the element itself.\n */\npublic fun <T> Array<out T>.withIndex(): Iterable<IndexedValue<T>> {\n  return
IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n
* into an [IndexedValue] containing the index of that element and the element itself.\n */\npublic fun
ByteArray.withIndex(): Iterable<IndexedValue<Byte>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n *
Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the
index of that element and the element itself.\n */\npublic fun ShortArray.withIndex():
Iterable<IndexedValue<Short>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n */\npublic fun IntArray.withIndex(): Iterable<IndexedValue<Int>> {\n  return IndexingIterable {
iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an
[IndexedValue] containing the index of that element and the element itself.\n */\npublic fun LongArray.withIndex():
Iterable<IndexedValue<Long>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n */\npublic fun FloatArray.withIndex(): Iterable<IndexedValue<Float>> {\n  return
IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n
* into an [IndexedValue] containing the index of that element and the element itself.\n */\npublic fun
DoubleArray.withIndex(): Iterable<IndexedValue<Double>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n
* Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the
index of that element and the element itself.\n */\npublic fun BooleanArray.withIndex():
Iterable<IndexedValue<Boolean>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy
[Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that
element and the element itself.\n */\npublic fun CharArray.withIndex(): Iterable<IndexedValue<Char>> {\n  return

```



```

samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic inline fun <K>
ShortArray.distinctBy(selector: (Short) -> K): List<Short> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Short>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having
distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same
order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic inline fun <K>
IntArray.distinctBy(selector: (Int) -> K): List<Int> {\n  val set = HashSet<K>()\n  val list = ArrayList<Int>()\n
for (e in this) {\n  val key = selector(e)\n  if (set.add(key))\n    list.add(e)\n }\n return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys returned by the given
[selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source
array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic inline
fun <K> LongArray.distinctBy(selector: (Long) -> K): List<Long> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Long>()\n
  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return
list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys returned by
the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the
source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic
inline fun <K> FloatArray.distinctBy(selector: (Float) -> K): List<Float> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Float>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic inline fun <K>
DoubleArray.distinctBy(selector: (Double) -> K): List<Double> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Double>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic inline fun <K>
BooleanArray.distinctBy(selector: (Boolean) -> K): List<Boolean> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Boolean>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns
a list containing only elements from the given array\n * having distinct keys returned by the given [selector]
function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n *
@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n *^\npublic inline fun <K>
CharArray.distinctBy(selector: (Char) -> K): List<Char> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Char>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified
collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set
containing all elements that are contained at least in one of these collections use [union].\n *^\npublic infix fun <T>
Array<out T>.intersect(other: Iterable<T>): Set<T> {\n  val set
= this.toMutableSet()\n  set.retainAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that
are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration
order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these
collections use [union].\n *^\npublic infix fun ByteArray.intersect(other: Iterable<Byte>): Set<Byte> {\n  val set =
this.toMutableSet()\n  set.retainAll(other)\n  return set\n}\n\n/**\n * Returns a set containing all elements that are
contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration

```


order of the original array.

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun ShortArray.intersect(other: Iterable<Short>): Set<Short> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by both this array and the specified collection.`

`The returned set preserves the element iteration order of the original array.`

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun IntArray.intersect(other: Iterable<Int>): Set<Int> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by both this array and the specified collection.`

`The returned set preserves the element iteration order of the original array.`

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun LongArray.intersect(other: Iterable<Long>): Set<Long> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by both this array and the specified collection.`

`The returned set preserves the element iteration order of the original array.`

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun FloatArray.intersect(other: Iterable<Float>): Set<Float> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by both this array and the specified collection.`

`The returned set preserves the element iteration order of the original array.`

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun DoubleArray.intersect(other: Iterable<Double>): Set<Double> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by both this array and the specified collection.`

`The returned set preserves the element iteration order of the original array.`

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun BooleanArray.intersect(other: Iterable<Boolean>): Set<Boolean> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by both this array and the specified collection.`

`The returned set preserves the element iteration order of the original array.`

`To get a set containing all elements that are contained at least in one of these collections use [union].`

```

public infix fun CharArray.intersect(other: Iterable<Char>): Set<Char> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by this array and not contained by the specified collection.`

`The returned set preserves the element iteration order of the original array.`

```

public infix fun <T> Array<out T>.subtract(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by this array and not contained by the specified collection.`

`The returned set preserves the element iteration order of the original array.`

```

public infix fun ByteArray.subtract(other: Iterable<Byte>): Set<Byte> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by this array and not contained by the specified collection.`

`The returned set preserves the element iteration order of the original array.`

```

public infix fun ShortArray.subtract(other: Iterable<Short>): Set<Short> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by this array and not contained by the specified collection.`

`The returned set preserves the element iteration order of the original array.`

```

public infix fun IntArray.subtract(other: Iterable<Int>): Set<Int> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by this array and not contained by the specified collection.`

`The returned set preserves the element iteration order of the original array.`

```

public infix fun LongArray.subtract(other: Iterable<Long>): Set<Long> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}

```

`Returns a set containing all elements that are contained by this array and not contained by the specified collection.`

`The returned set preserves the`

element iteration order of the original array.\n

```
*/\npublic infix fun FloatArray.subtract(other: Iterable<Float>): Set<Float> {\n    val set = this.toMutableSet()\n    set.removeAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic infix fun DoubleArray.subtract(other: Iterable<Double>): Set<Double> {\n    val set = this.toMutableSet()\n    set.removeAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic infix fun BooleanArray.subtract(other: Iterable<Boolean>): Set<Boolean> {\n    val set = this.toMutableSet()\n    set.removeAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this array
```

```
and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic infix fun CharArray.subtract(other: Iterable<Char>): Set<Char> {\n    val set = this.toMutableSet()\n    set.removeAll(other)\n    return set\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun <T> Array<out T>.toMutableSet(): MutableSet<T> {\n    return
```

```
toCollection(LinkedHashSet<T>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun ByteArray.toMutableSet(): MutableSet<Byte> {\n    return
```

```
toCollection(LinkedHashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun ShortArray.toMutableSet(): MutableSet<Short> {\n    return
```

```
toCollection(LinkedHashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun IntArray.toMutableSet(): MutableSet<Int> {\n    return
```

```
toCollection(LinkedHashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun LongArray.toMutableSet(): MutableSet<Long> {\n    return
```

```
toCollection(LinkedHashSet<Long>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun FloatArray.toMutableSet(): MutableSet<Float> {\n    return
```

```
toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun DoubleArray.toMutableSet(): MutableSet<Double> {\n    return
```

```
toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun BooleanArray.toMutableSet(): MutableSet<Boolean> {\n    return
```

```
toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given array.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun CharArray.toMutableSet():
```

```
MutableSet<Char> {\n    return
```

```
toCollection(LinkedHashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun <T> Array<out T>.union(other: Iterable<T>): Set<T> {\n    val set =
```

```
this.toMutableSet()\n    set.addAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original array.\n * Those
```



```

* Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun IntArray.all(predicate: (Int) -> Boolean):
Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true\n}\n\n/**\n * Returns `true` if
all elements match the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n
*\npublic inline fun LongArray.all(predicate: (Long) -> Boolean): Boolean {\n  for (element in this) if
(!predicate(element)) return false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n *\npublic inline fun
FloatArray.all(predicate: (Float) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\npublic inline fun DoubleArray.all(predicate: (Double) -> Boolean): Boolean {\n  for (element in this) if
(!predicate(element)) return false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n *\npublic inline fun
BooleanArray.all(predicate: (Boolean) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element))
return false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n *\npublic inline fun CharArray.all(predicate: (Char) -> Boolean):
Boolean {\n  for (element in this) if (!predicate(element)) return false\n  return true\n}\n\n/**\n * Returns `true`
if array has at least one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n *\npublic fun
<T> Array<out T>.any(): Boolean {\n  return !isEmpty()\n}\n\n/**\n
* Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n *\npublic fun ByteArray.any(): Boolean {\n  return
!isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n *\npublic fun ShortArray.any(): Boolean {\n  return
!isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n *\npublic fun IntArray.any(): Boolean {\n  return
!isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n *\npublic fun LongArray.any(): Boolean {\n  return
!isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n *\npublic fun FloatArray.any(): Boolean {\n  return
!isEmpty()\n}\n\n/**\n * Returns
`true` if array has at least one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\npublic fun DoubleArray.any(): Boolean {\n  return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least
one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n *\npublic fun
BooleanArray.any(): Boolean {\n  return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n
* \n * @sample samples.collections.Collections.Aggregates.any\n *\npublic fun CharArray.any(): Boolean {\n
  return !isEmpty()\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic inline fun <T> Array<out
T>.any(predicate: (T) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return true\n  return
false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n
*\npublic inline fun ByteArray.any(predicate: (Byte) -> Boolean): Boolean {\n  for (element in this) if
(predicate(element)) return true\n  return false\n}\n\n/**\n * Returns `true` if at least one element matches the
given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic
inline fun ShortArray.any(predicate: (Short) -> Boolean): Boolean {\n  for (element in this) if (predicate(element))
return true\n  return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n *
\n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic inline fun
IntArray.any(predicate: (Int) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return true\n
return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n * @sample

```

```

samples.collections.Collections.Aggregates.anyWithPredicate\n
    *^public inline fun LongArray.any(predicate: (Long) -> Boolean): Boolean {\n    for (element in this) if
(predicate(element)) return true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the
given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^public
inline fun FloatArray.any(predicate: (Float) -> Boolean): Boolean {\n    for (element in this) if (predicate(element))
return true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^public inline fun
DoubleArray.any(predicate: (Double) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^public
inline fun BooleanArray.any(predicate: (Boolean) -> Boolean): Boolean {\n    for (element in this) if
(predicate(element)) return true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the
given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^public
inline fun CharArray.any(predicate: (Char) -> Boolean): Boolean {\n    for (element in this) if (predicate(element))
return true\n    return false\n}\n\n/**\n * Returns the number of elements in this array.\n
*^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.count(): Int {\n    return size\n}\n\n/**\n *
Returns the number of elements in this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.count(): Int {\n    return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.count(): Int {\n    return size\n}\n\n/**\n * Returns the
number of elements in this
array.\n *^@kotlin.internal.InlineOnly\npublic inline fun IntArray.count(): Int {\n    return size\n}\n\n/**\n *
Returns the number of elements in this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun
LongArray.count(): Int {\n    return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*^@kotlin.internal.InlineOnly\npublic inline fun FloatArray.count(): Int {\n    return size\n}\n\n/**\n * Returns the
number of elements in this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.count(): Int {\n
return size\n}\n\n/**\n * Returns the number of elements in this array.\n *^@kotlin.internal.InlineOnly\npublic
inline fun BooleanArray.count(): Int {\n    return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*^@kotlin.internal.InlineOnly\npublic inline fun CharArray.count(): Int {\n    return size\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *^public inline fun <T> Array<out
T>.count(predicate: (T) -> Boolean): Int {\n    var count = 0\n    for (element in this) if (predicate(element))
++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *^public
inline fun ByteArray.count(predicate: (Byte) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *^public inline fun ShortArray.count(predicate: (Short) -> Boolean): Int {\n    var count = 0\n    for
(element in this) if (predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n *^public inline fun IntArray.count(predicate: (Int) -> Boolean): Int {\n    var
count = 0\n    for (element in this) if (predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *^public inline fun LongArray.count(predicate:
(Long) -> Boolean): Int {\n    var count = 0\n    for (element in this) if (predicate(element)) ++count\n    return
count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *^public inline fun
FloatArray.count(predicate: (Float) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *^public inline fun DoubleArray.count(predicate: (Double) -> Boolean): Int {\n    var count = 0\n
for (element in this) if (predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n *^public inline fun BooleanArray.count(predicate: (Boolean) -> Boolean): Int
{\n    var count = 0\n    for (element in this) if (predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns
the number of elements matching the given [predicate].\n *^public inline fun

```

```

CharArray.count(predicate: (Char) -> Boolean): Int {
    var count = 0
    for (element in this) if
(predicate(element)) ++count
    return count
}

fun <T> Accumulates value starting with [initial] value and
applying [operation] from left to right
to current accumulator value and each element.
Returns the
specified [initial] value if the array is empty.
@param [operation] function that takes current accumulator
value and an element, and calculates the next accumulator value.

public inline fun <T, R> Array<out
T>.fold(initial: R, operation: (acc: R, T) -> R): R {
    var accumulator = initial
    for (element in this)
accumulator = operation(accumulator, element)
    return accumulator
}

fun <T> Accumulates value starting
with [initial] value and applying [operation] from left to right
to current accumulator value and each element.
Returns the specified [initial] value if the array is empty.
@param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.

public inline fun
<R> ByteArray.fold(initial: R, operation: (acc: R, Byte) -> R): R {
    var accumulator = initial
    for (element in
this) accumulator = operation(accumulator, element)
    return accumulator
}

fun <T> Accumulates value starting
with [initial] value and applying [operation] from left to right
to current accumulator value and each element.
Returns the specified [initial] value if the array is empty.
@param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.

public inline fun
<R> ShortArray.fold(initial: R, operation: (acc: R, Short) -> R): R {
    var accumulator = initial
    for (element in
this) accumulator = operation(accumulator, element)
    return accumulator
}

fun <T> Accumulates value
starting with [initial] value and applying [operation] from left to right
to current accumulator value and each element.
Returns the specified [initial] value if the array is
empty.
@param [operation] function that takes current accumulator value and an element, and calculates the
next accumulator value.

public inline fun <R> IntArray.fold(initial: R, operation: (acc: R, Int) -> R): R {
    var accumulator = initial
    for (element in this) accumulator = operation(accumulator, element)
    return
accumulator
}

fun <T> Accumulates value starting with [initial] value and applying [operation] from left to
right
to current accumulator value and each element.
Returns the specified [initial] value if the array is
empty.
@param [operation] function that takes current accumulator value and an element, and calculates the
next accumulator value.

public inline fun <R> LongArray.fold(initial: R, operation: (acc: R, Long) -> R): R
{
    var accumulator = initial
    for (element in this) accumulator = operation(accumulator,
element)
    return accumulator
}

fun <T> Accumulates value starting with [initial] value and applying
[operation] from left to right
to current accumulator value and each element.
Returns the specified
[initial] value if the array is empty.
@param [operation] function that takes current accumulator value and
an element, and calculates the next accumulator value.

public inline fun <R> FloatArray.fold(initial: R,
operation: (acc: R, Float) -> R): R {
    var accumulator = initial
    for (element in this) accumulator =
operation(accumulator, element)
    return accumulator
}

fun <T> Accumulates value starting with [initial]
value and applying [operation] from left to right
to current accumulator value and each element.
Returns the specified [initial]
value if the array is empty.
@param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.

public
inline fun <R> DoubleArray.fold(initial: R, operation: (acc: R, Double) -> R): R {
    var accumulator = initial
    for (element in this) accumulator = operation(accumulator, element)
    return accumulator
}

fun <T> Accumulates value starting with [initial] value and applying [operation] from left to
right
to current accumulator value and each element.
Returns the specified [initial]
value if the array is empty.
@param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.

public inline fun <R> BooleanArray.fold(initial: R, operation: (acc: R, Boolean) -> R): R {
    var
accumulator = initial
    for (element in this) accumulator = operation(accumulator, element)
    return
accumulator
}

fun <T> Accumulates value starting with [initial] value and applying [operation] from left to
right
to current accumulator value and each element.
Returns the specified [initial]
value if the array is empty.
@param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.

public inline fun <R> CharArray.fold(initial: R, operation:
(acc: R, Char) -> R): R {
    var accumulator = initial
    for (element in this) accumulator =

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operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> ByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> ShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> IntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> LongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> FloatArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R> DoubleArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and

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calculates the next accumulator value.\n */\npublic inline fun <R> BooleanArray.foldIndexed(initial: R, operation:
(index: Int, acc: R, Boolean) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this)
accumulator = operation(index++, accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current
accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value
if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <R>
CharArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): R {\n    var index = 0\n    var
accumulator = initial\n    for (element in this) accumulator = operation(index++, accumulator, element)\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes an element and
current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out
T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator = initial\n
while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the
next accumulator value.\n */\npublic inline fun <R> ByteArray.foldRight(initial: R, operation: (Byte, acc: R) -> R):
R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator =
operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from right to left\n * to each element and current
accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes an element and current accumulator value, and calculates the next accumulator value.\n */\n
*\npublic inline fun <R> ShortArray.foldRight(initial: R, operation: (Short, acc: R) -> R): R {\n    var index =
lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--),
accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified
[initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>
IntArray.foldRight(initial: R, operation: (Int, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator =
initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the
next accumulator value.\n */\npublic inline fun <R> LongArray.foldRight(initial: R, operation: (Long, acc: R) -> R):
R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator =
operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element
and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value, and calculates the next accumulator
value.\n */\npublic inline fun <R> FloatArray.foldRight(initial: R, operation: (Float, acc: R) -> R): R {\n    var index
= lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--),
accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified
[initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>
DoubleArray.foldRight(initial: R, operation: (Double, acc: R) -> R): R {\n    var index = lastIndex\n

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var accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from
right to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the
array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and
calculates the next accumulator value.\n */\npublic inline fun <R> BooleanArray.foldRight(initial: R, operation:
(Boolean, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates
the next accumulator value.\n */\npublic inline fun <R> CharArray.foldRight(initial: R, operation: (Char, acc: R) ->
R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, the element itself\n * and current accumulator value, and
calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out T>.foldRightIndexed(initial: R,
operation: (index: Int, T, acc: R) -> R): R {\n var index = lastIndex\n var
accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n
--index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n
* \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator
value.\n */\npublic inline fun <R> ByteArray.foldRightIndexed(initial: R, operation: (index: Int, Byte, acc: R) -> R):
R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from
right to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns
the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n
*/\npublic inline fun <R> ShortArray.foldRightIndexed(initial: R, operation: (index: Int, Short, acc: R) -> R): R {\n
var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index,
get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, the
element itself\n * and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun
<R> IntArray.foldRightIndexed(initial: R, operation: (index: Int, Int, acc: R) -> R): R {\n var index = lastIndex\n
var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n
--index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n
* \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator
value.\n */\npublic inline fun <R> LongArray.foldRightIndexed(initial: R, operation: (index: Int, Long, acc: R) ->
R): R {\n var index = lastIndex\n var accumulator
= initial\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from
right to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns

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the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n

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*\npublic inline fun <R> FloatArray.foldRightIndexed(initial: R, operation: (index: Int, Float, acc: R) -> R): R {\n
var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index,
get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n**\n * Accumulates value starting with
[initial] value and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n
*\npublic inline fun <R> DoubleArray.foldRightIndexed(initial: R, operation: (index: Int, Double, acc: R) -> R): R
{\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n**\n * Accumulates
value starting with [initial] value and applying [operation] from right to left\n * to each element with its index in
the original array and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n
*\n * @param [operation] function that takes the index of an element, the element
itself\n * and current accumulator value, and calculates the next accumulator value.\n
*\npublic inline fun <R>
BooleanArray.foldRightIndexed(initial: R, operation: (index: Int, Boolean, acc: R) -> R): R {\n var index =
lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n**\n * Accumulates value starting with [initial]
value and applying [operation] from right to left\n * to each element with its index in the original array and current
accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself\n * and current accumulator value, and calculates the
next accumulator value.\n
*\npublic inline fun <R> CharArray.foldRightIndexed(initial: R, operation: (index: Int,
Char, acc: R) -> R): R {\n var index = lastIndex\n var accumulator
= initial\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n
}\n return accumulator\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun <T>
Array<out T>.forEach(action: (T) -> Unit): Unit {\n for (element in this) action(element)\n}\n\n**\n * Performs
the given [action] on each element.\n
*\npublic inline fun ByteArray.forEach(action: (Byte) -> Unit): Unit {\n for
(element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun ShortArray.forEach(action: (Short) -> Unit): Unit {\n for
(element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun IntArray.forEach(action: (Int) -> Unit): Unit {\n for
(element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun LongArray.forEach(action: (Long) -> Unit): Unit {\n for
(element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun FloatArray.forEach(action: (Float) -> Unit): Unit {\n for
(element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun DoubleArray.forEach(action: (Double) -> Unit): Unit {\n
for (element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun BooleanArray.forEach(action: (Boolean) -> Unit): Unit {\n
for (element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element.\n
*\npublic inline fun CharArray.forEach(action: (Char) -> Unit):
Unit {\n for (element in this) action(element)\n}\n\n**\n * Performs the given [action] on each element, providing
sequential index with the element.\n * @param [action] function that takes the index of an element and the element
itself\n * and performs the action on the element.\n
*\npublic
inline fun <T> Array<out T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {\n var index = 0\n for (item
in this) action(index++, item)\n}\n\n**\n * Performs the given [action] on each element, providing sequential index
with the element.\n * @param [action] function that takes the index of an element and the element itself\n * and
performs the action on the element.\n
*\npublic inline fun ByteArray.forEachIndexed(action: (index: Int, Byte) ->
Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n**\n * Performs the given [action]
on each element, providing sequential index with the element.\n * @param [action] function that takes the index of

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an element and the element itself\n * and performs the action on the element.\n */\npublic inline fun
ShortArray.forEachIndexed(action: (index: Int, Short) -> Unit): Unit {\n    var index = 0\n    for (item in this)
action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing
sequential index with the element.\n * @param [action] function that takes the index of an element and the element
itself\n * and performs the action on the element.\n */\npublic inline fun IntArray.forEachIndexed(action: (index:
Int, Int) -> Unit): Unit {\n    var index = 0\n    for (item in this) action(index++, item)\n}\n\n/**\n * Performs the
given [action] on each element, providing sequential index with the element.\n * @param [action] function that
takes the index of an element and the element itself\n * and performs the action on the element.\n */\npublic inline
fun LongArray.forEachIndexed(action: (index: Int, Long) -> Unit): Unit {\n    var index = 0\n    for (item in this)
action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with
the element.\n * @param [action] function that takes the index of an element and the element itself\n * and performs
the action on the element.\n */\npublic inline fun FloatArray.forEachIndexed(action:
(index: Int, Float) -> Unit): Unit {\n    var index = 0\n    for (item in this) action(index++, item)\n}\n\n/**\n *
Performs the given [action] on each element, providing sequential index with the element.\n * @param [action]
function that takes the index of an element and the element itself\n * and performs the action on the element.\n
*/\npublic inline fun DoubleArray.forEachIndexed(action: (index: Int, Double) -> Unit): Unit {\n    var index = 0\n
for (item in this) action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing
sequential index with the element.\n * @param [action] function that takes the index of an element and the element
itself\n * and performs the action on the element.\n */\npublic inline fun BooleanArray.forEachIndexed(action:
(index: Int, Boolean) -> Unit): Unit {\n    var index = 0\n    for (item in this) action(index++, item)\n}\n\n/**\n *
Performs the given [action] on each element, providing sequential index with
the element.\n * @param [action] function that takes the index of an element and the element itself\n * and
performs the action on the element.\n */\npublic inline fun CharArray.forEachIndexed(action: (index: Int, Char) ->
Unit): Unit {\n    var index = 0\n    for (item in this) action(index++, item)\n}\n\n@Deprecated("Use maxOrNull
instead.", ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Array<out Double>.max(): Double? {\n    return
maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Array<out Float>.max(): Float? {\n    return
maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince
= "1.6")\npublic fun <T : Comparable<T>> Array<out T>.max(): T? {\n    return
maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\npublic fun ByteArray.max(): Byte? {\n    return maxOrNull()\n}\n\n@Deprecated("Use
maxOrNull instead.", ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5", hiddenSince = "1.6")\npublic fun ShortArray.max(): Short? {\n    return
maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\npublic fun IntArray.max(): Int? {\n    return maxOrNull()\n}\n\n@Deprecated("Use
maxOrNull instead.", ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5", hiddenSince = "1.6")\npublic fun LongArray.max():
Long? {\n    return maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\npublic fun FloatArray.max(): Float? {\n    return maxOrNull()\n}\n\n@Deprecated("Use
maxOrNull instead.", ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5", hiddenSince = "1.6")\npublic fun DoubleArray.max(): Double? {\n    return

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maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.\",
ReplaceWith("this.maxOrNull()\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.5\",
hiddenSince = \"1.6\")\npublic fun CharArray.max(): Char? {\n    return maxOrNull()\n}\n\n@Deprecated("Use
maxByOrNull instead.\", ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince =
\"1.4\", errorSince = \"1.5\", hiddenSince = \"1.6\")\npublic inline fun <T, R : Comparable<R>> Array<out
T>.maxBy(selector:
(T) -> R): T? {\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince =
\"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> ByteArray.maxBy(selector: (Byte) -> R):
Byte? {\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince =
\"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> ShortArray.maxBy(selector: (Short) -> R):
Short? {\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince =
\"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> IntArray.maxBy(selector: (Int) -> R): Int?
{\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull
instead.\", ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\",
errorSince = \"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> LongArray.maxBy(selector:
(Long) -> R): Long? {\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince =
\"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> FloatArray.maxBy(selector: (Float) -> R):
Float? {\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince =
\"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> DoubleArray.maxBy(selector: (Double) ->
R): Double? {\n    return maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince
= \"1.4\", errorSince = \"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>>
BooleanArray.maxBy(selector: (Boolean) -> R): Boolean? {\n    return
maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead.\",
ReplaceWith("this.maxByOrNull(selector)\n}\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince =
\"1.5\", hiddenSince = \"1.6\")\npublic inline fun <R : Comparable<R>> CharArray.maxBy(selector: (Char) -> R):
Char? {\n    return maxByOrNull(selector)\n}\n\n/**\n * Returns the first element yielding the largest value of the
given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n * \n * @SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Array<out T>.maxByOrNull(selector: (T) -> R): T? {\n    if (isEmpty()) return null\n    var
maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxVal =
selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxVal < v) {\n            maxElem
= e\n            maxVal = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the
largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n * \n * @SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> ByteArray.maxByOrNull(selector: (Byte) -> R): Byte? {\n    if (isEmpty()) return null\n    var
maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxVal =
selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxVal < v) {\n            maxElem
= e\n            maxVal = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function
or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n *
\n * @SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ShortArray.maxByOrNull(selector: (Short) ->

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R): Short? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n
}\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> IntArray.maxByOrNull(selector: (Int) -> R):
Int? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex
= this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n
maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value
of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n *\n*\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> LongArray.maxByOrNull(selector: (Long) -> R): Long? {\n if (isEmpty()) return null\n var
maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n *\n*\n@SinceKotlin("1.4")\npublic inline fun
<R : Comparable<R>> FloatArray.maxByOrNull(selector: (Float) -> R): Float? {\n if (isEmpty()) return null\n
var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n *\n*\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> DoubleArray.maxByOrNull(selector: (Double)
-> R): Double? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n
}\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> BooleanArray.maxByOrNull(selector:
(Boolean) -> R): Boolean? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex =
this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue
< v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the
first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n *\n*\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> CharArray.maxByOrNull(selector: (Char) -> R): Char? {\n if (isEmpty()) return null\n var
maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the largest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOf(selector: (T) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return

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maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOf(selector: (Byte) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOf(selector: (Short) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOf(selector: (Int) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOf(selector: (Float) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOf(selector: (Double) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOf(selector: (Boolean) ->

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Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

maxOf() * Returns the largest value among all values produced by [selector] function * applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

* @throws NoSuchElementException if the array is empty.

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOf(selector: (Char) ->

Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

maxOf() * Returns the largest value among all values produced by [selector] function * applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

* @throws NoSuchElementException if the array is empty.

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOf(selector:

(T) -> Float): Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

maxOf() * Returns the largest value among all values produced by [selector] function * applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

* @throws NoSuchElementException if the array is empty.

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOf(selector: (Byte) -> Float):

Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

maxOf() * Returns the largest value among all values produced by [selector] function * applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

* @throws NoSuchElementException if the array is empty.

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOf(selector: (Short) ->

Float): Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

maxOf() * Returns the largest value among all values produced by [selector] function * applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

* @throws NoSuchElementException

if the array is empty.

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOf(selector: (Int) -> Float):

Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

maxOf() * Returns the largest value among all values produced by [selector] function * applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

* @throws NoSuchElementException if the array is empty.

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) ->

Float):

Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}

```

maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOf(selector: (Float) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOf(selector: (Double) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOf(selector: (Boolean) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOf(selector: (Char) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out T>.maxOf(selector: (T) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> ByteArray.maxOf(selector: (Byte) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ShortArray.maxOf(selector:
    (Short) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for
    (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
    applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
    */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.maxOf(selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue =
    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
        maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
    values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
    NoSuchElementException if the array is empty.\n
    */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
LongArray.maxOf(selector: (Long) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
    maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
        maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values
    produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
    NoSuchElementException if the array is empty.\n
    */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline
    fun <R : Comparable<R>> FloatArray.maxOf(selector: (Float) -> R): R {\n    if (isEmpty()) throw
    NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
    selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
    each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
    */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
DoubleArray.maxOf(selector: (Double) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
    maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
        maxValue = v\n        }\n    }\n    return
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    each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.maxOf(selector: (Boolean) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
    maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
        maxValue = v\n        }\n    }\n    return
    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
    each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
    */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
    inline fun <R : Comparable<R>> CharArray.maxOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw
    NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
    selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
    each element in the array\n * or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned

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result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOfOrNull(selector:\n(T) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in\n1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns\nthe largest value among all values produced by [selector] function\n * applied to each element in the array or `null`\nif there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n`NaN`.\n
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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOfOrNull(selector: (Byte) ->\nDouble): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns\nthe largest value among all values produced by [selector] function\n * applied to each element in the array or `null`\nif there are no elements.\n * \n * If any of values produced\nby [selector] function is `NaN`, the returned result is `NaN`.\n
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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOfOrNull(selector: (Short) -\n> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex)\n{\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns\nthe largest value among all values produced by [selector] function\n * applied to each element in the array\nor `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\nresult is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOfOrNull(selector: (Int) ->\nDouble): Double?\n{\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\nselector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns\nthe largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if\nthere are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n`NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOfOrNull(selector: (Long) -\n> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex)\n{\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns\nthe largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by\n[selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOfOrNull(selector: (Float) -\n> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex)\n{\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns\nthe largest value among all values produced by [selector] function\n * applied to each element in the array\nor `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\nresult is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```

inline fun DoubleArray.maxOfOrNull(selector: (Double) -> Double): Double? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun BooleanArray.maxOfOrNull(selector: (Boolean) -> Double): Double? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharArray.maxOfOrNull(selector: (Char) -> Double): Double? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.maxOfOrNull(selector: (T) -> Float): Float? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun ByteArray.maxOfOrNull(selector: (Byte) -> Float): Float? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun ShortArray.maxOfOrNull(selector: (Short) -> Float): Float? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun IntArray.maxOfOrNull(selector: (Int) -> Float): Float? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/** Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution

```

```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.maxOrNull(selector: (Long) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOrNull(selector: (Float) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOrNull(selector: (Double) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOrNull(selector: (Boolean) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOrNull(selector: (Char) -> Float): Float? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out T>.maxOrNull(selector: (T) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> ByteArray.maxOrNull(selector: (Byte) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```

```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ShortArray.maxOfOrNull(selector: (Short) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n * Returns the largest value among all values produced by [selector] function\n
* applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.maxOfOrNull(selector: (Int) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n * Returns the largest value among all values produced
by [selector] function\n
* applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> LongArray.maxOfOrNull(selector: (Long) -> R): R? {\n  if (isEmpty()) return
null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(maxValue < v) {\n    maxValue = v\n    }\n  }\n  return maxValue\n}\n\n * Returns the largest value
among all values produced by [selector] function\n
* applied to each element in the array or `null` if there are no
elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.maxOfOrNull(selector: (Float) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n * Returns the largest value among
all values produced by [selector] function\n
* applied to each element in the array or `null` if there are no
elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
DoubleArray.maxOfOrNull(selector: (Double) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n * Returns the largest value among all values produced
by [selector] function\n
* applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.maxOfOrNull(selector:
(Boolean) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex)
{\n    val v = selector(this[i])\n    if (maxValue < v) {\n    maxValue = v\n    }\n  }\n  return
maxValue\n}\n\n * Returns the largest value among all values produced by [selector] function\n
* applied to
each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.maxOfOrNull(selector: (Char) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n * Returns the largest value according to the provided
[comparator]\n
* among all values
produced by [selector] function applied to each element in the array.\n
* @throws NoSuchElementException if
the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```

```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array.\n * \n * @throws NoSuchElementException if
the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.maxOfWith(comparator: Comparator<in R>, selector: (Byte) -> R): R {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n  if (comparator.compare(maxValue, v) < 0) {\n    maxValue = v\n  }\n }\n
return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all
values produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.maxOfWith(comparator:
Comparator<in R>, selector: (Short) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.maxOfWith(comparator:
Comparator<in R>, selector: (Int) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var maxValue
= selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according
to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.maxOfWith(comparator:
Comparator<in R>, selector: (Long) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.maxOfWith(comparator: Comparator<in R>, selector: (Float) -> R): R {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n  if (comparator.compare(maxValue, v) < 0) {\n    maxValue = v\n  }\n }\n
return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all
values produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.maxOfWith(comparator:

```

```

Comparator<in R>, selector: (Double) -> R): R {
    if (isEmpty())
        throw NoSuchElementException()
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array. @throws NoSuchElementException if the array is empty.

```

* Since Kotlin 1.4
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R> BooleanArray.maxOfWith(comparator:
    Comparator<in R>, selector: (Boolean) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array. @throws NoSuchElementException if the array is empty.

```

* Since Kotlin 1.4
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R> CharArray.maxOfWith(comparator:
    Comparator<in R>, selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

```

* Since Kotlin 1.4
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
public inline fun <T, R> Array<out T>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {
    if (isEmpty()) return null
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

```

* Since Kotlin 1.4
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R>
    ByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {
    if (isEmpty())
        return null
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

```

* Since Kotlin 1.4
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R>
    ShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {
    if (isEmpty())
        return null
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

```

* Since Kotlin 1.4
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R>
    IntArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Int) -> R): R? {
    if (isEmpty())
        return null
    var maxV = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxV, v) < 0)
            maxV = v
    }
    return maxV
}

```

Returns the largest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

```

*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic
inline fun <R> LongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\/n if
(isEmpty()) return null\/n var maxVAlue = selector(this[0])\/n for (i in 1..lastIndex) {\/n val v =
selector(this[i])\/n if (comparator.compare(maxVAlue, v) < 0) {\/n maxVAlue = v\/n }\/n }\/n return
maxVAlue\/n}\/n\/n**\/n * Returns the largest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <R>
FloatArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {\/n if (isEmpty())
return null\/n var maxVAlue = selector(this[0])\/n for (i in 1..lastIndex) {\/n val
v = selector(this[i])\/n if (comparator.compare(maxVAlue, v) < 0) {\/n maxVAlue = v\/n }\/n }\/n
return maxVAlue\/n}\/n\/n**\/n * Returns the largest value according to the provided [comparator] * among all
values produced by [selector] function applied to each element in the array or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <R>
DoubleArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\/n if (isEmpty())
return null\/n var maxVAlue = selector(this[0])\/n for (i in 1..lastIndex) {\/n val v = selector(this[i])\/n if
(comparator.compare(maxVAlue, v) < 0) {\/n maxVAlue = v\/n }\/n }\/n return maxVAlue\/n}\/n\/n**\/n *
Returns the largest value according to the provided [comparator] * among all values produced by [selector]
function
applied to each element in the array or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <R>
BooleanArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {\/n if (isEmpty())
return null\/n var maxVAlue = selector(this[0])\/n for (i in 1..lastIndex) {\/n val v = selector(this[i])\/n if
(comparator.compare(maxVAlue, v) < 0) {\/n maxVAlue = v\/n }\/n }\/n return maxVAlue\/n}\/n\/n**\/n *
Returns the largest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <R>
CharArray.maxOfWithOrNull(comparator:
Comparator<in R>, selector: (Char) -> R): R? {\/n if (isEmpty()) return null\/n var maxVAlue = selector(this[0])\/n
for (i in 1..lastIndex) {\/n val v = selector(this[i])\/n if (comparator.compare(maxVAlue, v) < 0) {\/n
maxVAlue = v\/n }\/n }\/n return maxVAlue\/n}\/n\/n**\/n * Returns the largest element or `null` if there are no
elements.\/n *\/n * If any of elements is `NaN` returns `NaN`.\/n *\/n@SinceKotlin("1.4")\/npublic fun Array<out
Double>.maxOrNull(): Double? {\/n if (isEmpty()) return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n
val e = this[i]\/n max = maxOf(max, e)\/n }\/n return max\/n}\/n\/n**\/n * Returns the largest element or `null`
if there are no elements.\/n *\/n * If any of elements is `NaN` returns `NaN`.\/n *\/n@SinceKotlin("1.4")\/npublic fun
Array<out Float>.maxOrNull(): Float? {\/n if (isEmpty()) return null\/n var max = this[0]\/n for (i in
1..lastIndex) {\/n
val e = this[i]\/n max = maxOf(max, e)\/n }\/n return max\/n}\/n\/n**\/n * Returns the largest element or `null`
if there are no elements.\/n *\/n@SinceKotlin("1.4")\/npublic fun <T : Comparable<T>> Array<out
T>.maxOrNull(): T? {\/n if (isEmpty()) return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n val e =
this[i]\/n if (max < e) max = e\/n }\/n return max\/n}\/n\/n**\/n * Returns the largest element or `null` if there are
no elements.\/n *\/n@SinceKotlin("1.4")\/npublic fun ByteArray.maxOrNull(): Byte? {\/n if (isEmpty()) return

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null\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return
max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic
fun ShortArray.maxOrNull(): Short? {\n  if (isEmpty()) return null\n  var max = this[0]\n  for (i in 1..lastIndex)
{\n    val e = this[i]\n    if (max < e) max
= e\n  }\n  return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\npublic fun IntArray.maxOrNull(): Int? {\n  if (isEmpty()) return null\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n
* Returns the largest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
LongArray.maxOrNull(): Long? {\n  if (isEmpty()) return null\n  var max = this[0]\n  for (i in 1..lastIndex) {\n
  val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest element or `null` if
there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun
FloatArray.maxOrNull(): Float? {\n  if (isEmpty()) return null\n  var max = this[0]\n  for (i in 1..lastIndex) {\n
  val e = this[i]\n    max = maxOf(max, e)\n  }\n  return max\n}\n\n/**\n * Returns the largest element or `null` if
there are no elements.\n * \n * If any of
elements is `NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.maxOrNull(): Double? {\n
if (isEmpty()) return null\n  var max = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    max =
maxOf(max, e)\n  }\n  return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\npublic fun CharArray.maxOrNull(): Char? {\n  if (isEmpty()) return null\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return
max\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun <T> Array<out T>.maxWith(comparator: Comparator<in T>): T? {\n
return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use
maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun ByteArray.maxWith(comparator: Comparator<in Byte>): Byte? {\n
return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun ShortArray.maxWith(comparator: Comparator<in Short>): Short? {\n
return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun IntArray.maxWith(comparator: Comparator<in Int>): Int? {\n  return
maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun LongArray.maxWith(comparator: Comparator<in
Long>): Long? {\n  return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun FloatArray.maxWith(comparator: Comparator<in Float>): Float? {\n
return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun DoubleArray.maxWith(comparator: Comparator<in Double>): Double?
{\n  return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince
= "1.6")\npublic fun BooleanArray.maxWith(comparator: Comparator<in Boolean>): Boolean? {\n  return
maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.")
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun CharArray.maxWith(comparator: Comparator<in Char>): Char? {\n

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return maxWithOrNull(comparator)\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun <T> Array<out
T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return
max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null`
if there are no
elements.\n */\n@SinceKotlin("1.4")\npublic fun ByteArray.maxWithOrNull(comparator: Comparator<in Byte>):
Byte? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\npublic fun ShortArray.maxWithOrNull(comparator: Comparator<in Short>): Short? {\n    if
(isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\npublic fun IntArray.maxWithOrNull(comparator: Comparator<in Int>): Int? {\n    if
(isEmpty())
return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max,
e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
LongArray.maxWithOrNull(comparator: Comparator<in Long>): Long? {\n    if (isEmpty()) return null\n    var max
= this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.maxWithOrNull(comparator:
Comparator<in Float>): Float? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n
val e = this[i]\n        if (comparator.compare(max,
e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to
the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
DoubleArray.maxWithOrNull(comparator: Comparator<in Double>): Double? {\n    if (isEmpty()) return null\n    var
max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max =
e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
BooleanArray.maxWithOrNull(comparator: Comparator<in Boolean>): Boolean? {\n    if (isEmpty()) return null\n    var
max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max =
e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
CharArray.maxWithOrNull(comparator: Comparator<in Char>): Char? {\n    if (isEmpty()) return null\n    var max
= this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n
return max\n}\n\n@Deprecated("Use minOrNull instead.")\nReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Array<out Double>.min(): Double? {\n    return
minOrNull()\n}\n\n@Deprecated("Use minOrNull instead.")\nReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Array<out Float>.min(): Float? {\n    return
minOrNull()\n}\n\n@Deprecated("Use minOrNull instead.")\nReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun <T : Comparable<T>> Array<out T>.min(): T?
{\n    return minOrNull()\n}\n\n@Deprecated("Use minOrNull instead.")\nReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",

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hiddenSince = `1.6`)npublic fun ByteArray.min(): Byte? {n return minOrNull()n}n@Deprecated(`Use
minOrNull instead.`), ReplaceWith(`this.minOrNull()`)n@DeprecatedSinceKotlin(warningSince = `1.4`,
errorSince = `1.5`, hiddenSince = `1.6`)npublic fun ShortArray.min(): Short? {n return
minOrNull()n}n@Deprecated(`Use minOrNull instead.`),
ReplaceWith(`this.minOrNull()`)n@DeprecatedSinceKotlin(warningSince = `1.4`, errorSince = `1.5`,
hiddenSince = `1.6`)npublic fun IntArray.min(): Int? {n return minOrNull()n}n@Deprecated(`Use
minOrNull instead.`), ReplaceWith(`this.minOrNull()`)n@DeprecatedSinceKotlin(warningSince = `1.4`,
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ReplaceWith(`this.minOrNull()`)n@DeprecatedSinceKotlin(warningSince = `1.4`, errorSince = `1.5`,
hiddenSince = `1.6`)npublic fun CharArray.min(): Char? {n return minOrNull()n}n@Deprecated(`Use
minByOrNull instead.`), ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince =
`1.4`, errorSince = `1.5`, hiddenSince = `1.6`)npublic inline fun <T,
R : Comparable<R>> Array<out T>.minBy(selector: (T) -> R): T? {n return
minByOrNull(selector)n}n@Deprecated(`Use minByOrNull instead.`),
ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince = `1.4`, errorSince =
`1.5`, hiddenSince = `1.6`)npublic inline fun <R : Comparable<R>> ByteArray.minBy(selector: (Byte) -> R):
Byte? {n return minByOrNull(selector)n}n@Deprecated(`Use minByOrNull instead.`),
ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince = `1.4`, errorSince =
`1.5`, hiddenSince = `1.6`)npublic inline fun <R : Comparable<R>> ShortArray.minBy(selector: (Short) -> R):
Short? {n return minByOrNull(selector)n}n@Deprecated(`Use minByOrNull instead.`),
ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince = `1.4`, errorSince =
`1.5`, hiddenSince = `1.6`)npublic inline fun <R : Comparable<R>> IntArray.minBy(selector: (Int) -> R): Int?
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minByOrNull instead.`), ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince =
`1.4`, errorSince = `1.5`, hiddenSince = `1.6`)npublic inline fun <R : Comparable<R>>
LongArray.minBy(selector: (Long) -> R): Long? {n return minByOrNull(selector)n}n@Deprecated(`Use
minByOrNull instead.`), ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince =
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FloatArray.minBy(selector: (Float) -> R): Float? {n return minByOrNull(selector)n}n@Deprecated(`Use
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ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince
= `1.4`, errorSince = `1.5`, hiddenSince = `1.6`)npublic inline fun <R : Comparable<R>>
BooleanArray.minBy(selector: (Boolean) -> R): Boolean? {n return
minByOrNull(selector)n}n@Deprecated(`Use minByOrNull instead.`),
ReplaceWith(`this.minByOrNull(selector)`)n@DeprecatedSinceKotlin(warningSince = `1.4`, errorSince =
`1.5`, hiddenSince = `1.6`)npublic inline fun <R : Comparable<R>> CharArray.minBy(selector: (Char) -> R):
Char? {n return minByOrNull(selector)n}n/**n * Returns the first element yielding the smallest value of the
given function or `null` if there are no elements.n * n * @sample

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samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Array<out T>.minByOrNull(selector: (T) -> R): T? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex
== 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n
val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return
minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there
are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ByteArray.minByOrNull(selector: (Byte) ->
R): Byte? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first element
yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> ShortArray.minByOrNull(selector: (Short) -> R): Short? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> IntArray.minByOrNull(selector: (Int) -> R): Int? {\n if (isEmpty()) return
null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var
minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if
(minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n *
Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n *
@sample samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
<R : Comparable<R>> LongArray.minByOrNull(selector: (Long) -> R): Long? {\n if (isEmpty()) return null\n
var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue
= v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the
given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> FloatArray.minByOrNull(selector: (Float) -> R): Float? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> DoubleArray.minByOrNull(selector: (Double) -> R): Double? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> BooleanArray.minByOrNull(selector: (Boolean) -> R): Boolean? {\n if (isEmpty()) return
null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var

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minValue = selector(minElem)\n for (i in 1..lastIndex) {\n     val e = this[i]\n         val v = selector(e)\n         if (minValue > v) {\n             minElem = e\n             minValue = v\n         }\n     }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n */\n * @sample samples.collections.Collections.Aggregates.minByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> CharArray.minByOrNull(selector: (Char) -> R): Char? {\n    if (isEmpty()) return null\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    }\n    return minElem\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n */\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOf(selector: (T) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n */\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOf(selector: (Byte) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n */\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector: (Short) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n */\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOf(selector: (Int) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n */\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * @throws NoSuchElementException if the array is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to

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each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun FloatArray.minOf(selector: (Float) -> Double): Double {\n    if (isEmpty()) throw
NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOf(selector: (Double) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOf(selector: (Boolean) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n

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```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOf(selector: (Char) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Array<out T>.minOf(selector: (T) -> Float): Float {\n    if (isEmpty()) throw
NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOf(selector: (Byte) -> Float):
Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n

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empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector: (Short) ->\nFloat): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array.\n * \n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOf(selector: (Int) -> Float):\nFloat {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n * `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun LongArray.minOf(selector: (Long) -> Float): Float {\n    if (isEmpty()) throw\nNoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\nselector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest\n * value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of\n * values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOf(selector: (Float) -> Float):\nFloat {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue =\nminOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n * by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]\n * function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOf(selector: (Double) ->\nFloat): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\n * result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOf(selector: (Boolean) ->\nFloat): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n * `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun CharArray.minOf(selector: (Char) -> Float): Float {\n    if (isEmpty()) throw\nNoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
```

```

selector(this[i])\n    minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out
T>.minOf(selector: (T) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ByteArray.minOf(selector: (Byte) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue
= selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the
array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> ShortArray.minOf(selector: (Short) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.minOf(selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
LongArray.minOf(selector: (Long) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> FloatArray.minOf(selector: (Float) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

```



```

DoubleArray.minOf(selector: (Double) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array. @throws NoSuchElementException if the array is empty.

```

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolutionByLambdaReturnType
* kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>>
BooleanArray.minOf(selector: (Boolean) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array. @throws NoSuchElementException if the array is empty.

```

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolutionByLambdaReturnType
* kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>> CharArray.minOf(selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolutionByLambdaReturnType
* kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.minOfOrNull(selector: (T) -> Double): Double? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolutionByLambdaReturnType
* kotlin.internal.InlineOnly
public inline fun ByteArray.minOfOrNull(selector: (Byte) -> Double): Double? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolutionByLambdaReturnType
* kotlin.internal.InlineOnly
public inline fun ShortArray.minOfOrNull(selector: (Short) -> Double): Double? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolutionByLambdaReturnType
* kotlin.internal.InlineOnly
public inline fun IntArray.minOfOrNull(selector: (Int) -> Double): Double? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

```

* Returns the smallest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOfOrNull(selector: (Long) -
> Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOfOrNull(selector: (Float) ->
Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns
the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.minOfOrNull(selector: (Double) -> Double): Double? {\n    if (isEmpty()) return null\n
var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue =
minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOfOrNull(selector:
(Boolean) -> Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n
for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOfOrNull(selector: (Char) ->
Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns
the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOfOrNull(selector:
(T) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex)
{\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array
or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOfOrNull(selector:
(Byte) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function

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is `NaN`, the returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOfOrNull(selector: (Short) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among
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all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOfOrNull(selector: (Int) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n    inline fun LongArray.minOfOrNull(selector: (Long) -> Float): Float? {\n        if (isEmpty()) return null\n        var\n            minValue = selector(this[0])\n        for (i in 1..lastIndex) {\n            val v = selector(this[i])\n            minValue =\n                minOf(minValue, v)\n        }\n        return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n * by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of\n * values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOfOrNull(selector: (Float) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all\n * values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOfOrNull(selector: (Double) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n        minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOfOrNull(selector: (Boolean) -> Float): Float? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return\n        minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOfOrNull(selector: (Char) -> Float): Float? {\n    if (isEmpty())\n        return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all
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values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out
T>.minOfOrNull(selector: (T) -> R): R? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n
return minValue}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ByteArray.minOfOrNull(selector: (Byte) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n
minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ShortArray.minOfOrNull(selector: (Short) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex)
{\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return
minValue}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.minOfOrNull(selector: (Int) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n
minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> LongArray.minOfOrNull(selector: (Long) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(minValue > v) {\n minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest value
among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no
elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.minOfOrNull(selector: (Float) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n
minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
DoubleArray.minOfOrNull(selector: (Double) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n
minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic

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inline fun <R : Comparable<R>> BooleanArray.minOfOrNull(selector: (Boolean) -> R): R? {
    if (isEmpty())
        return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

*SinceKotlin("1.4")OptIn(kotlin.experimental.ExperimentalTypeInference::class)OverloadResolutionByLambdaReturnType@kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>> CharArray.minOfOrNull(selector: (Char) -> R): R? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.
@throws NoSuchElementException if the array is empty.

*SinceKotlin("1.4")OptIn(kotlin.experimental.ExperimentalTypeInference::class)OverloadResolutionByLambdaReturnType@kotlin.internal.InlineOnly
public inline fun <T, R> Array<out T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {
    if (isEmpty()) throw NoSuchElementException
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.
@throws NoSuchElementException if the array is empty.

*SinceKotlin("1.4")OptIn(kotlin.experimental.ExperimentalTypeInference::class)OverloadResolutionByLambdaReturnType@kotlin.internal.InlineOnly
public inline fun <R> ByteArray.minOfWith(comparator: Comparator<in R>, selector: (Byte) -> R): R {
    if (isEmpty()) throw NoSuchElementException
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.
@throws NoSuchElementException if the array is empty.

*SinceKotlin("1.4")OptIn(kotlin.experimental.ExperimentalTypeInference::class)OverloadResolutionByLambdaReturnType@kotlin.internal.InlineOnly
public inline fun <R> ShortArray.minOfWith(comparator: Comparator<in R>, selector: (Short) -> R): R {
    if (isEmpty()) throw NoSuchElementException
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.
@throws NoSuchElementException if the array is empty.

*SinceKotlin("1.4")OptIn(kotlin.experimental.ExperimentalTypeInference::class)OverloadResolutionByLambdaReturnType@kotlin.internal.InlineOnly
public inline fun <R> IntArray.minOfWith(comparator: Comparator<in R>, selector: (Int) -> R): R {
    if (isEmpty()) throw NoSuchElementException
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.
@throws NoSuchElementException if the array is empty.

*SinceKotlin("1.4")OptIn(kotlin.experimental.ExperimentalTypeInference::class)OverloadResolutionByLambdaReturnType@kotlin.internal.InlineOnly
public inline fun <R> LongArray.minOfWith(comparator: Comparator<in R>, selector: (Long) -> R): R {
    if (isEmpty()) throw NoSuchElementException
    var

```

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minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector]
function applied to each element in the
array.\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.minOfWith(comparator:
Comparator<in R>, selector: (Float) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector]
function applied to each element in the array.\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.minOfWith(comparator: Comparator<in R>, selector: (Double) -> R): R {\n    if
(isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.\n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.minOfWith(comparator:
Comparator<in R>, selector: (Boolean) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array.\n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.minOfWith(comparator:
Comparator<in R>, selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n    if (isEmpty()) return null\n
var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {\n    if
(isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator] among all values

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produced by [selector] function applied to each element in the array or `null` if there are no elements.

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*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue,
v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
IntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Int) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there
are no elements.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
LongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
FloatArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Float)
-> R): R? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v
= selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
DoubleArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
BooleanArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic

```

```

inline fun <R> CharArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest element or `null` if there are no elements.
If any of elements is `NaN` returns `NaN`.
@SinceKotlin("1.4")
public fun Array<out Double>.minOrNull(): Double? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        min = minOf(min, e)
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
If any of elements is `NaN` returns `NaN`.
@SinceKotlin("1.4")
public fun Array<out Float>.minOrNull(): Float? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        min = minOf(min, e)
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
@SinceKotlin("1.4")
public fun <T : Comparable<T>> Array<out T>.minOrNull(): T? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
@SinceKotlin("1.4")
public fun ByteArray.minOrNull(): Byte? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
@SinceKotlin("1.4")
public fun ShortArray.minOrNull(): Short? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
@SinceKotlin("1.4")
public fun IntArray.minOrNull(): Int? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
@SinceKotlin("1.4")
public fun LongArray.minOrNull(): Long? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
If any of elements is `NaN` returns `NaN`.
@SinceKotlin("1.4")
public fun FloatArray.minOrNull(): Float? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        min = minOf(min, e)
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
If any of elements is `NaN` returns `NaN`.
@SinceKotlin("1.4")
public fun DoubleArray.minOrNull(): Double? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        min = minOf(min, e)
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
@SinceKotlin("1.4")
public fun CharArray.minOrNull(): Char? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
    hiddenSince = "1.6")
public fun <T> Array<out T>.minWith(comparator: Comparator<in T>): T? {
    return minWithOrNull(comparator)
}

@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
    hiddenSince = "1.6")
public fun ByteArray.minWith(comparator: Comparator<in Byte>): Byte? {
    return minWithOrNull(comparator)
}

@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
    hiddenSince = "1.6")
public fun ShortArray.minWith(comparator: Comparator<in Short>): Short? {
    return minWithOrNull(comparator)
}

@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
    hiddenSince = "1.6")
public fun IntArray.minWith(comparator: Comparator<in Int>): Int? {
    return minWithOrNull(comparator)
}

@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince

```



```

= \"1.5\", hiddenSince = \"1.6\")\npublic fun LongArray.minWith(comparator: Comparator<in Long>): Long? {\n
return minWithOrNull(comparator)\n}\n\n@Deprecated(\"Use minWithOrNull instead.\",
ReplaceWith(\"this.minWithOrNull(comparator)\"))\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince
= \"1.5\", hiddenSince = \"1.6\")\npublic fun FloatArray.minWith(comparator: Comparator<in Float>): Float? {\n
return minWithOrNull(comparator)\n}\n\n@Deprecated(\"Use minWithOrNull instead.\",
ReplaceWith(\"this.minWithOrNull(comparator)\"))\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince
= \"1.5\", hiddenSince = \"1.6\")\npublic fun DoubleArray.minWith(comparator: Comparator<in Double>): Double?
{\n
return minWithOrNull(comparator)\n}\n\n@Deprecated(\"Use minWithOrNull
instead.\", ReplaceWith(\"this.minWithOrNull(comparator)\"))\n@DeprecatedSinceKotlin(warningSince = \"1.4\",
errorSince = \"1.5\", hiddenSince = \"1.6\")\npublic fun BooleanArray.minWith(comparator: Comparator<in
Boolean>): Boolean? {\n
return minWithOrNull(comparator)\n}\n\n@Deprecated(\"Use minWithOrNull
instead.\", ReplaceWith(\"this.minWithOrNull(comparator)\"))\n@DeprecatedSinceKotlin(warningSince = \"1.4\",
errorSince = \"1.5\", hiddenSince = \"1.6\")\npublic fun CharArray.minWith(comparator: Comparator<in Char>):
Char? {\n
return minWithOrNull(comparator)\n}\n\n/**\n * Returns the first element having the smallest value
according to the provided [comparator] or `null` if there are no elements.\n * \n *\n @SinceKotlin(\"1.4\")\npublic fun
<T> Array<out T>.minWithOrNull(comparator: Comparator<in T>): T? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator]
or `null` if there are no elements.\n * \n *\n @SinceKotlin(\"1.4\")\npublic fun ByteArray.minWithOrNull(comparator:
Comparator<in Byte>): Byte? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n @SinceKotlin(\"1.4\")\npublic fun ShortArray.minWithOrNull(comparator: Comparator<in Short>): Short? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if
(comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if
there are no elements.\n * \n *\n @SinceKotlin(\"1.4\")\npublic fun IntArray.minWithOrNull(comparator:
Comparator<in Int>): Int? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val
e = this[i]\n
if (comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n @SinceKotlin(\"1.4\")\npublic fun LongArray.minWithOrNull(comparator: Comparator<in Long>): Long? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if
(comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n @SinceKotlin(\"1.4\")\npublic fun FloatArray.minWithOrNull(comparator: Comparator<in Float>): Float? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if
(comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n @SinceKotlin(\"1.4\")\npublic fun DoubleArray.minWithOrNull(comparator: Comparator<in Double>):
Double? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if
(comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n @SinceKotlin(\"1.4\")\npublic fun BooleanArray.minWithOrNull(comparator: Comparator<in Boolean>):
Boolean? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if
(comparator.compare(min, e) > 0) min = e\n
}\n
return min\n
}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n @SinceKotlin(\"1.4\")\npublic fun CharArray.minWithOrNull(comparator: Comparator<in Char>): Char? {\n
if (isEmpty()) return null\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if

```

```

(comparator.compare(min, e) > 0) min = e\n } \n return min\n}\n\n/**\n * Returns `true` if the array has no
elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n */\npublic fun <T> Array<out
T>.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n *
@sample samples.collections.Collections.Aggregates.none\n */\npublic fun ByteArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n
*/\npublic fun ShortArray.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no
elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n */\npublic fun IntArray.none():
Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic fun LongArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic fun FloatArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic fun DoubleArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic fun BooleanArray.none():
Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic fun CharArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun <T> Array<out
T>.none(predicate: (T) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n
return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun ByteArray.none(predicate:
(Byte) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return
true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun ShortArray.none(predicate: (Short) -> Boolean): Boolean {\n for (element in this) if
(predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.none\n */\npublic inline fun
IntArray.none(predicate: (Int) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n
return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun LongArray.none(predicate:
(Long) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return
true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun FloatArray.none(predicate:
(Float)
-> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return true\n}\n\n/**\n *
Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun DoubleArray.none(predicate:
(Double) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return
true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun
BooleanArray.none(predicate: (Boolean) -> Boolean): Boolean {\n for (element in this) if (predicate(element))
return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.none\n */\npublic inline fun CharArray.none(predicate:
(Char) -> Boolean): Boolean {\n for (element in this)
if (predicate(element)) return false\n return true\n}\n\n/**\n * Performs the given [action] on each element and
returns the array itself afterwards.\n * \n * @since Kotlin("1.4")\n */\n@kotlin.internal\npublic inline fun <T>

```

```

Array<out T>.onEach(action: (T) -> Unit): Array<out T> {\n  return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.onEach(action: (Byte) ->
Unit): ByteArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.onEach(action: (Short) ->
Unit): ShortArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns
the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.onEach(action: (Int) -> Unit): IntArray {\n  return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.onEach(action: (Long) ->
Unit): LongArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.onEach(action: (Float) ->
Unit): FloatArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.onEach(action:
(Double) -> Unit): DoubleArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs
the given [action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.onEach(action: (Boolean)
-> Unit): BooleanArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.onEach(action: (Char) ->
Unit): CharArray {\n  return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element, providing sequential index with the element,\n * and returns the array itself afterwards.\n
*\n@param [action] function that takes the index of an element and the element itself\n * and performs the action on
the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Array<out T>.onEachIndexed(action: (index: Int, T) -> Unit): Array<out T> {\n  return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n
*\n@param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.onEachIndexed(action:
(index: Int, Byte) -> Unit): ByteArray {\n  return apply { forEachIndexed(action) }\n}\n\n/**\n * Performs the
given [action] on each element, providing sequential index with the element,\n * and returns the array itself
afterwards.\n
*\n@param [action] function that takes the index of an element and the element itself\n * and performs
the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.onEachIndexed(action:
(index: Int, Short) -> Unit): ShortArray {\n  return apply { forEachIndexed(action) }\n}\n\n/**\n * Performs the
given [action] on each element, providing sequential index with the element,\n * and returns the array itself
afterwards.\n
*\n@param [action] function that takes the index of an element and the element itself\n * and performs
the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.onEachIndexed(action: (index: Int, Int) -> Unit): IntArray {\n  return apply { forEachIndexed(action)
}\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element,\n * and
returns the array itself afterwards.\n
*\n@param [action] function that takes the index of an element and the element
itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.onEachIndexed(action: (index: Int, Long) -> Unit):

```

```

LongArray {
    return apply {
        forEachIndexed(action)
    }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun

FloatArray.onEachIndexed(action: (index: Int, Float) -> Unit): FloatArray {
    return apply {
        forEachIndexed(action)
    }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun DoubleArray.onEachIndexed(action: (index: Int, Double) -> Unit): DoubleArray {
    return apply {
        forEachIndexed(action)
    }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun BooleanArray.onEachIndexed(action: (index: Int, Boolean) -> Unit): BooleanArray {
    return apply {
        forEachIndexed(action)
    }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun CharArray.onEachIndexed(action: (index: Int, Char) -> Unit): CharArray {
    return apply {
        forEachIndexed(action)
    }
}

/**
 * Accumulates value starting with the first element and applying [operation] from left to right
 * to current accumulator value and each element.
 * Throws an exception if this array is empty. If the array can be empty in an expected way,
 * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function that takes current accumulator value and an element,
 * and calculates the next accumulator value.
 */
@sample samples.collections.Collections.Aggregates.reduce
public inline fun <S, T : S> Array<out T>.reduce(operation: (acc: S, T) -> S): S {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator: S = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/**
 * Accumulates value starting with the first element and applying [operation] from left to right
 * to current accumulator value and each element.
 * Throws an exception if this array is empty. If the array can be empty in an expected way,
 * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function that takes current accumulator value and an element,
 * and calculates the next accumulator value.
 */
@sample samples.collections.Collections.Aggregates.reduce
public inline fun

ByteArray.reduce(operation: (acc: Byte, Byte) -> Byte): Byte {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/**
 * Accumulates value starting with the first element and applying [operation] from left to right
 * to current accumulator value and each element.
 * Throws an exception if this array is empty. If the array can be empty in an expected way,
 * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function that takes current accumulator value and an element,
 * and calculates the next accumulator value.
 */
@sample samples.collections.Collections.Aggregates.reduce
public inline fun

ShortArray.reduce(operation: (acc: Short, Short) -> Short): Short {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/**
 * Accumulates value starting with the first element and applying [operation] from left to right
 * to current accumulator value and each element.
 * Throws an exception if this array is empty. If the array can be empty in an expected way,
 * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 */

```

`\n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun IntArray.reduce(operation: (acc: Int, Int) -> Int): Int {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun LongArray.reduce(operation: (acc: Long, Long) -> Long): Long {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. 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It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun DoubleArray.reduce(operation: (acc: Double, Double) -> Double): Double {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun BooleanArray.reduce(operation: (acc: Boolean, Boolean) -> Boolean): Boolean {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun CharArray.reduce(operation: (acc: Char, Char) -> Char): Char {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use`

[reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

    * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
    * @sample samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun <S, T : S> Array<out T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {
    * \n    if (isEmpty())
    * \n        throw UnsupportedOperationException("Empty array can't be reduced.")
    * \n    var accumulator: S = this[0]
    * \n    for (index in 1..lastIndex) {
    * \n        accumulator = operation(index, accumulator, this[index])
    * \n    }
    * \n    return accumulator
    * \n}
    * \n/**
    * Accumulates value starting with the first element and applying [operation] from left to right
    * to current accumulator value and each element with its index in the original array.
    * Throws an exception if this array is empty. If the array can be empty in an expected way,
    * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
    * @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    * and calculates the next accumulator value.
    * @sample samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun
    * ByteArray.reduceIndexed(operation: (index: Int, acc: Byte, Byte) -> Byte): Byte {
    * \n    if (isEmpty())
    * \n        throw UnsupportedOperationException("Empty array can't be reduced.")
    * \n    var accumulator = this[0]
    * \n    for (index in 1..lastIndex) {
    * \n        accumulator = operation(index, accumulator, this[index])
    * \n    }
    * \n    return accumulator
    * \n}
    * \n/**
    * Accumulates value starting with the first element and applying [operation] from left to right
    * to current accumulator value and each element with its index in the original array.
    * Throws an exception if this array is empty. If the array can be empty in an expected way,
    * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
    * @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    * and calculates the next accumulator value.
    * @sample samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun ShortArray.reduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): Short {
    * \n    if (isEmpty())
    * \n        throw UnsupportedOperationException("Empty array can't be reduced.")
    * \n    var accumulator = this[0]
    * \n    for (index in 1..lastIndex) {
    * \n        accumulator = operation(index, accumulator, this[index])
    * \n    }
    * \n    return accumulator
    * \n}
    * \n/**
    * Accumulates value starting with the first element and applying [operation] from left to right
    * to current accumulator value and each element with its index in the original array.
    * Throws an exception if this array is empty. If the array can be empty in an expected way,
    * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
    * @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    * and calculates the next accumulator value.
    * @sample samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun IntArray.reduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): Int {
    * \n    if (isEmpty())
    * \n        throw UnsupportedOperationException("Empty array can't be reduced.")
    * \n    var accumulator = this[0]
    * \n    for (index in 1..lastIndex) {
    * \n        accumulator = operation(index, accumulator, this[index])
    * \n    }
    * \n    return accumulator
    * \n}
    * \n/**
    * Accumulates value starting with the first element and applying [operation] from left to right
    * to current accumulator value and each element with its index in the original array.
    * Throws an exception if this array is empty. If the array can be empty in an expected way,
    * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
    * @param [operation] function that takes the index of an element, current accumulator value and the element itself,
    * and calculates the next accumulator value.
    * @sample samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun LongArray.reduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): Long {
    * \n    if (isEmpty())
    * \n        throw UnsupportedOperationException("Empty array can't be reduced.")
    * \n    var accumulator = this[0]
    * \n    for (index in 1..lastIndex) {
    * \n        accumulator = operation(index, accumulator, this[index])
    * \n    }
    * \n    return accumulator
    * \n}
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    * Accumulates value starting with the first element and applying [operation] from left to right
    * to current accumulator value and each element with its index in the original array.
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    * please use [reduceIndexedOrNull] instead. It returns `null`
  
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when its receiver is empty.

```

    * @param [operation] function that takes the index of an element, current
    accumulator value and the element itself, and calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun FloatArray.reduceIndexed(operation:
    (index: Int, acc: Float, Float) -> Float): Float {
    \n    if (isEmpty())
    \n        throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n    var accumulator = this[0]
    \n    for (index in
    1..lastIndex) {
    \n        accumulator = operation(index, accumulator, this[index])
    \n    }
    \n    return
    accumulator
    \n}
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    * Accumulates value starting with the first element and applying [operation] from left to right
    * to current accumulator value and each element with its index in the original array.
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    * please use [reduceIndexedOrNull] instead. It returns `null`
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    * @param [operation] function that takes the index of an element, current
    accumulator value and the element itself, and calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun DoubleArray.reduceIndexed(operation:
    (index: Int, acc: Double, Double) -> Double): Double {
    \n    if (isEmpty())
    \n        throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n    var accumulator = this[0]
    \n    for (index in
    1..lastIndex) {
    \n        accumulator = operation(index, accumulator, this[index])
    \n    }
    \n    return
    accumulator
    \n}
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    * Accumulates value starting with the first element and applying [operation] from left to right
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    * @sample
    samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun BooleanArray.reduceIndexed(operation:
    (index: Int, acc: Boolean, Boolean) -> Boolean): Boolean {
    \n    if (isEmpty())
    \n        throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n    var accumulator = this[0]
    \n    for (index in
    1..lastIndex) {
    \n        accumulator = operation(index, accumulator, this[index])
    \n    }
    \n    return
    accumulator
    \n}
    * \n
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    * please use [reduceIndexedOrNull] instead. It returns `null`
    when its receiver is empty.
    * @param [operation] function that takes the index of an element, current
    accumulator value and the element itself, and calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduce
    * \npublic inline fun CharArray.reduceIndexed(operation:
    (index: Int, acc: Char, Char) -> Char): Char {
    \n    if (isEmpty())
    \n        throw
    UnsupportedOperationException("Empty array can't be reduced.")
    \n    var accumulator = this[0]
    \n    for (index in
    1..lastIndex) {
    \n        accumulator = operation(index, accumulator, this[index])
    \n    }
    \n    return
    accumulator
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    * Returns `null` if the array is empty.
    * @param [operation] function that takes the index of an element, current accumulator value and the
    element itself, and calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduceOrNull
    * \n@SinceKotlin("1.4")
    * \npublic inline fun <S, T : S>
    Array<out T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {
    \n    if (isEmpty())
    \n        return
    null
    \n    var accumulator: S = this[0]
    \n    for (index in 1..lastIndex) {
    \n        accumulator = operation(index,
    accumulator, this[index])
    \n    }
    \n    return accumulator
    \n}
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    element and applying [operation] from left to right
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```

original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n

```

*\n@SinceKotlin("1.4")\npublic inline fun ByteArray.reduceIndexedOrNull(operation: (index: Int, acc: Byte, Byte) -> Byte): Byte? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
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*\n@SinceKotlin("1.4")\npublic inline fun IntArray.reduceIndexedOrNull(operation: (index: Int, acc: Int, Int) -> Int): Int? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun LongArray.reduceIndexedOrNull(operation: (index: Int, acc: Long, Long) -> Long): Long? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun FloatArray.reduceIndexedOrNull(operation: (index: Int, acc: Float, Float) -> Float): Float? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun DoubleArray.reduceIndexedOrNull(operation: (index: Int, acc: Double, Double) -> Double): Double? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns

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`null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n * \n * @SinceKotlin("1.4")\npublic inline fun
BooleanArray.reduceIndexedOrNull(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): Boolean? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
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CharArray.reduceIndexedOrNull(operation: (index: Int, acc: Char, Char) -> Char): Char? {\n if (isEmpty())\n
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samples.collections.Collections.Aggregates.reduceOrNull\n * \n * @SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceOrNull(operation:
(acc: S, T) -> S): S? {\n if (isEmpty())\n return null\n var accumulator: S = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n *
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@sample samples.collections.Collections.Aggregates.reduceOrNull\n * \n * @SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ByteArray.reduceOrNull(operation: (acc: Byte, Byte) -> Byte): Byte? {\n if (isEmpty())\n return null\n var
accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from
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ShortArray.reduceOrNull(operation: (acc: Short, Short) -> Short): Short? {\n if (isEmpty())\n return null\n
var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
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IntArray.reduceOrNull(operation: (acc: Int, Int) -> Int): Int? {\n if (isEmpty())\n return null\n var
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accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull

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*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun LongArray.reduceOrNull(operation: (acc: Long, Long) -> Long): Long? {\n if (isEmpty())\n return
null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator,
this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n *
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*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
FloatArray.reduceOrNull(operation: (acc: Float, Float) -> Float): Float? {\n if (isEmpty())\n return null\n var
accumulator
= this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
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@param [operation] function that takes current accumulator value and an element,\n * and calculates the next
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*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
DoubleArray.reduceOrNull(operation: (acc: Double, Double) -> Double): Double? {\n if (isEmpty())\n return
null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator,
this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
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BooleanArray.reduceOrNull(operation: (acc: Boolean, Boolean) -> Boolean): Boolean? {\n if (isEmpty())\n
return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharArray.reduceOrNull(operation: (acc: Char, Char) -> Char): Char? {\n if (isEmpty())\n return null\n var
accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@public inline fun <S, T : S> Array<out T>.reduceRight(operation: (T, acc: S) -> S): S {\n var index =
lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var
accumulator: S = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator

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value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun
ByteArray.reduceRight(operation: (Byte, acc: Byte) -> Byte): Byte {\n  var index = lastIndex\n  if (index < 0)
throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = get(index--)\n
while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun ShortArray.reduceRight(operation:
(Short, acc: Short) -> Short): Short {\n  var
index = lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n
var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n
}\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun IntArray.reduceRight(operation:
(Int, acc: Int) -> Int): Int {\n  var index = lastIndex\n  if (index < 0) throw
UnsupportedOperationException("Empty array
can't be reduced.")\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun LongArray.reduceRight(operation:
(Long, acc: Long) -> Long): Long {\n  var index = lastIndex\n  if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = get(index--)\n  while
(index >=
0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and
current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an
expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n *
@param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline
fun FloatArray.reduceRight(operation: (Float, acc: Float) -> Float): Float {\n  var index = lastIndex\n  if (index <
0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = get(index--)\n
while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from
right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty.
If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun DoubleArray.reduceRight(operation:
(Double, acc: Double) -> Double): Double {\n  var index = lastIndex\n  if (index < 0) throw

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UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = get(index--)\n  while
(index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n * ^\npublic inline fun
BooleanArray.reduceRight(operation: (Boolean, acc: Boolean) -> Boolean): Boolean {\n  var index = lastIndex\n
if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each
element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be
empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n
* \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n * ^\npublic inline
fun CharArray.reduceRight(operation: (Char, acc: Char) -> Char): Char {\n  var index = lastIndex\n  if (index < 0)
throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = get(index--)\n
while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n
* \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n * ^\npublic
inline fun <S, T : S> Array<out T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator: S = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original
array and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty
in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n * ^\npublic inline fun
ByteArray.reduceRightIndexed(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte {\n  var index = lastIndex\n
if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n
}\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each
element with its index in the original array and current accumulator value.\n * \n * Throws an exception if this array
is empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It
returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element,
the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n * ^\npublic inline fun
ShortArray.reduceRightIndexed(operation: (index: Int, Short, acc: Short) -> Short): Short {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var

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accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator
value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please
use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic
inline fun IntArray.reduceRightIndexed(operation: (index: Int, Int, acc: Int) -> Int): Int {\n  var index = lastIndex\n
if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n
  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element with its index in the original array
and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an
expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n
* @param [operation] function that takes the index of an element, the element itself and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun
LongArray.reduceRightIndexed(operation: (index: Int, Long, acc: Long) -> Long): Long {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element
with its index in the original array and current accumulator value.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns
`null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the
element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun
FloatArray.reduceRightIndexed(operation: (index: Int, Float, acc: Float) -> Float): Float {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n
  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic
inline fun DoubleArray.reduceRightIndexed(operation: (index: Int, Double, acc: Double) -> Double): Double {\n
var index = lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n
var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index,
get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element with its index in the original array
and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an
expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n
* @param [operation] function that takes the index of an element, the element itself and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun

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BooleanArray.reduceRightIndexed(operation: (index: Int, Boolean, acc: Boolean) -> Boolean): Boolean {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns null if the array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns null when its receiver is empty.
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRight
 @public inline fun CharArray.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {
 var index = lastIndex
 if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
 }

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns null if the array is empty.
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 @SinceKotlin("1.4")
 @public inline fun <S, T : S> Array<out T>.reduceRightIndexedOrNull(operation: (index: Int, T, acc: S) -> S): S? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator: S = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
 }

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns null if the array is empty.
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 @SinceKotlin("1.4")
 @public inline fun ByteArray.reduceRightIndexedOrNull(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
 }

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns null if the array is empty.
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 @SinceKotlin("1.4")
 @public inline fun ShortArray.reduceRightIndexedOrNull(operation: (index: Int, Short, acc: Short) -> Short): Short? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
 }

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns null if the array is empty.
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 @SinceKotlin("1.4")
 @public inline fun IntArray.reduceRightIndexedOrNull(operation: (index: Int, Int, acc: Int) -> Int): Int? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
 }

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns null if the array is empty.
 @param [operation] function that takes the index of an element, the element itself and current accumulator value,

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* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *^\n@SinceKotlin(\\"1.4\\")\npublic inline fun
LongArray.reduceRightIndexedOrNull(operation: (index: Int, Long, acc: Long) -> Long): Long? {\n  var index =
lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with
its index in the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *^\n@SinceKotlin(\\"1.4\\")\npublic
inline fun FloatArray.reduceRightIndexedOrNull(operation: (index: Int, Float, acc: Float) -> Float): Float? {\n  var
index = lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with
its index in the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *^\n@SinceKotlin(\\"1.4\\")\npublic inline fun
DoubleArray.reduceRightIndexedOrNull(operation: (index: Int, Double, acc: Double) -> Double):
Double? {\n  var index = lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while
(index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns `null`
if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *^\n@SinceKotlin(\\"1.4\\")\npublic inline fun
BooleanArray.reduceRightIndexedOrNull(operation: (index: Int, Boolean, acc: Boolean) -> Boolean): Boolean? {\n
var index = lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index
>= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns `null`
if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n *^\n@SinceKotlin(\\"1.4\\")\npublic inline fun
CharArray.reduceRightIndexedOrNull(operation: (index: Int, Char, acc: Char) -> Char): Char? {\n  var index =
lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the last element and applying [operation] from right to left\n * to each element
and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*^\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n  var index = lastIndex\n  if (index < 0)
return null\n  var accumulator: S = get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--),
accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null`
if the array is empty.\n

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 * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next
 accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
 *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
 ByteArray.reduceRightOrNull(operation: (Byte, acc: Byte) -> Byte): Byte? {\n  var index = lastIndex\n  if (index
 < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
 operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
 last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
 Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
 accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
 samples.collections.Collections.Aggregates.reduceRightOrNull\n
 *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
 ShortArray.reduceRightOrNull(operation: (Short, acc: Short) -> Short): Short? {\n  var index = lastIndex\n  if
 (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
 operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
 last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
 Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
 accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
 samples.collections.Collections.Aggregates.reduceRightOrNull\n
 *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
 IntArray.reduceRightOrNull(operation: (Int, acc: Int) -> Int): Int? {\n  var
 index = lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
 accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value
 starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
 value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
 current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
 samples.collections.Collections.Aggregates.reduceRightOrNull\n
 *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
 LongArray.reduceRightOrNull(operation: (Long, acc: Long) -> Long): Long? {\n  var index = lastIndex\n  if
 (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
 operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
 last element and applying [operation] from right to left\n * to each element
 and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
 that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
 @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
 *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
 FloatArray.reduceRightOrNull(operation: (Float, acc: Float) -> Float): Float? {\n  var index = lastIndex\n  if
 (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
 operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
 last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
 Returns `null` if the
 array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and
 calculates the next accumulator value.\n * \n * @sample
 samples.collections.Collections.Aggregates.reduceRightOrNull\n
 *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
 DoubleArray.reduceRightOrNull(operation: (Double, acc: Double) -> Double): Double? {\n  var index =
 lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
 accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value
 starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
 value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
 current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
 samples.collections.Collections.Aggregates.reduceRightOrNull\n

```


value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
BooleanArray.reduceRightOrNull(operation: (Boolean, acc: Boolean) -> Boolean): Boolean? {\n    var index =
lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharArray.reduceRightOrNull(operation: (Char,
acc: Char) -> Char): Char? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator =
get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R>
Array<out T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {\n    if (isEmpty()) return
listOf(initial)\n    val result
= ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n
accumulator = operation(accumulator, element)\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.runningFold(initial: R,
operation: (acc: R, Byte) -> R): List<R> {\n    if (isEmpty()) return listOf(initial)\n    val result
= ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n
accumulator = operation(accumulator, element)\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.runningFold(initial: R,
operation: (acc: R, Short) -> R): List<R> {\n    if (isEmpty()) return listOf(initial)\n    val
result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n
accumulator = operation(accumulator, element)\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n

```

```

*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.runningFold(initial: R,
operation: (acc: R, Int) -> R): List<R> {\n  if (isEmpty()) return listOf(initial)\n
  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for (element in this) {\n
  accumulator = operation(accumulator, element)\n  result.add(accumulator)\n  }\n  return result\n}\n\n/**\n
* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n
* to each element and current accumulator value that starts with [initial] value.\n
* Note that `acc` value passed to [operation] function should not be mutated;\n
* otherwise it would affect the previous value in resulting list.\n
* \n
* @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n
* \n
* @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.runningFold(initial: R,
operation: (acc: R, Long) -> R): List<R> {\n  if (isEmpty()) return listOf(initial)\n
  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for (element in this) {\n
  accumulator = operation(accumulator, element)\n  result.add(accumulator)\n  }\n  return result\n}\n\n/**\n
* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n
* to each element and current accumulator value that starts with [initial] value.\n
* Note that `acc` value passed to [operation] function should not be mutated;\n
* otherwise it would affect the previous value in resulting list.\n
* \n
* @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n
* \n
* @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.runningFold(initial: R,
operation: (acc: R, Float) -> R): List<R> {\n  if (isEmpty()) return listOf(initial)\n
  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for (element in this) {\n
  accumulator = operation(accumulator, element)\n  result.add(accumulator)\n  }\n  return result\n}\n\n/**\n
* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n
* to each element and current accumulator value that starts with [initial] value.\n
* Note that `acc` value passed to [operation] function should not be mutated;\n
* otherwise it would affect the previous value in resulting list.\n
* \n
* @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n
* \n
* @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.runningFold(initial: R,
operation: (acc: R, Double) -> R): List<R> {\n  if (isEmpty()) return listOf(initial)\n
  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for (element in this) {\n
  accumulator = operation(accumulator, element)\n  result.add(accumulator)\n  }\n  return result\n}\n\n/**\n
* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n
* to each element and current accumulator value that starts with [initial] value.\n
* Note that `acc` value passed to [operation] function should not be mutated;\n
* otherwise it would affect the previous value in resulting list.\n
* \n
* @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n
* \n
* @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.runningFold(initial:
R, operation: (acc: R, Boolean) -> R): List<R> {\n  if (isEmpty())
  return listOf(initial)\n  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n
  for (element in this) {\n  accumulator = operation(accumulator, element)\n  result.add(accumulator)\n  }\n
  return result\n}\n\n/**\n
* Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n
* to each element and current accumulator value that starts with [initial] value.\n
* Note that `acc` value passed to [operation] function should not be mutated;\n
* otherwise it would affect the previous value in resulting list.\n
* \n
* @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n
* \n
* @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.runningFold(initial: R,
operation: (acc: R, Char) -> R): List<R> {\n  if (isEmpty())

```

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return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\nfor (element in this) {\n    accumulator = operation(accumulator, element)\n    result.add(accumulator)\n}\nreturn result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying\n [operation] from left to right\n * to each element, its index in the original array and current accumulator value that\n starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the\n index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator\n value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n\n*\n@SinceKotlin("1.4")\npublic inline fun <T, R> Array<out T>.runningFoldIndexed(initial: R,\n    operation: (index: Int, acc: R, T) -> R): List<R> {\n    if (isEmpty()) return listOf(initial)\n    val result =\n    ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n    return\n    result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from\n left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial]\n value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would\n affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element,\n current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample\n samples.collections.Collections.Aggregates.runningFold\n\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic\n    inline fun <R> ByteArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): List<R> {\n    if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator\n    = initial\n    for (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation\n values generated by applying [operation] from left to right\n * to each element, its index in the original array and\n current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function\n should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]\n function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the\n next accumulator\n value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nShortArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {\n    if (isEmpty())\n    return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation\n values generated by applying [operation] from left to right\n * to each element, its index in the original array and\n current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function\n should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]\n function that takes the\n index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator\n value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nIntArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): List<R> {\n    if (isEmpty()) return\n    listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for\n    (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying\n [operation] from left to right\n * to each element, its index in the original array and current accumulator value that\n starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise\n otherwise

```

it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

LongArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {\n if (isEmpty())\n return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

FloatArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): List<R> {\n if (isEmpty())\n return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

DoubleArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {\n if (isEmpty())\n return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

BooleanArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {\n if (isEmpty())\n return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

```

CharArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {
    if (isEmpty())
    return listOf(initial)
    val result = ArrayList<R>(size + 1).apply { add(initial) }
    }
    var accumulator = initial
    for (index in indices) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with the first element of this array.
 * Note that `acc` value passed to [operation] function should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 * @param [operation] function that takes current accumulator value and the element, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <S, T : S> Array<out T>.runningReduce(operation: (acc: S, T) -> S): List<S> {
    if (isEmpty()) return emptyList()
    var accumulator: S = this[0]
    val result = ArrayList<S>(size).apply { add(accumulator) }
    for (index in 1 until size) {
        accumulator = operation(accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with the first element of this array.
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun ByteArray.runningReduce(operation: (acc: Byte, Byte) -> Byte): List<Byte> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Byte>(size).apply { add(accumulator) }
    for (index in 1 until size) {
        accumulator = operation(accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with the first element of this array.
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun ShortArray.runningReduce(operation: (acc: Short, Short) -> Short): List<Short> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Short>(size).apply { add(accumulator) }
    for (index in 1 until size) {
        accumulator = operation(accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with the first element of this array.
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun IntArray.runningReduce(operation: (acc: Int, Int) -> Int): List<Int> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Int>(size).apply { add(accumulator) }
    for (index in 1 until size) {
        accumulator = operation(accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with the first element of this array.
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun LongArray.runningReduce(operation: (acc: Long, Long) -> Long): List<Long> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Long>(size).apply { add(accumulator) }
    for (index in 1 until size) {
        accumulator = operation(accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with the first element of this array.
 * @param [operation] function that
 */

```

takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.runningReduce(operation: (acc: Float, Float) -> Float): List<Float> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Float>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.runningReduce(operation: (acc: Double, Double) -> Double): List<Double> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Double>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.runningReduce(operation: (acc: Boolean, Boolean) -> Boolean): List<Boolean> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Boolean>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.runningReduce(operation: (acc: Char, Char) -> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Char>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Array<out T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n    if (isEmpty()) return emptyList()\n    var accumulator: S = this[0]\n    val result = ArrayList<S>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.runningReduceIndexed(operation: (index: Int, acc: Byte,
```

```

Byte) -> Byte): List<Byte> {\n  if (isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result =
ArrayList<Byte>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator =
operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n *
to each element, its index in the original array and current accumulator value that starts with the first element of this
array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and
the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.runningReduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): List<Short>
{\n  if (isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<Short>(size).apply {
add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n
    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that
takes the index of an element, current accumulator value\n * and the element itself, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.runningReduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): List<Int> {\n  if (isEmpty()) return
emptyList()\n
  var accumulator = this[0]\n  val result = ArrayList<Int>(size).apply { add(accumulator) }\n  for (index in 1
until size) {\n    accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.runningReduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): List<Long> {\n  if
(isEmpty()) return emptyList()\n  var accumulator =
this[0]\n  val result = ArrayList<Long>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n
accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element, its index in the original array and current accumulator value that starts with the
first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.runningReduceIndexed(operation: (index: Int, acc: Float, Float) -> Float): List<Float> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result =
ArrayList<Float>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator =
operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n *
to each element, its index in the original array and current accumulator value that starts with the first element of this
array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and
the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

DoubleArray.runningReduceIndexed(operation: (index: Int, acc: Double, Double) -> Double): List<Double> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Double>(size).apply {
        add(accumulator)
    }
    for (index in 1 until size) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element, its index in the original array and current accumulator value that starts with the first element of this array.
 *
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the element itself, and calculates the next accumulator value.
 *
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun

BooleanArray.runningReduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): List<Boolean> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Boolean>(size).apply {
        add(accumulator)
    }
    for (index in 1 until size) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element, its index in the original array and current accumulator value that starts with the first element of this array.
 *
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the element itself, and calculates the next accumulator value.
 *
 * @sample samples.collections.Collections.Aggregates.runningReduce
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun

CharArray.runningReduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): List<Char> {
    if (isEmpty()) return emptyList()
    var accumulator = this[0]
    val result = ArrayList<Char>(size).apply {
        add(accumulator)
    }
    for (index in 1 until size) {
        accumulator = operation(index, accumulator, this[index])
        result.add(accumulator)
    }
    return result
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with [initial] value.
 *
 * Note that `acc` value passed to [operation] function should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 *
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 *
 * @sample samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <T, R> Array<out T>.scan(initial: R, operation: (acc: R, T) -> R): List<R> {
    return runningFold(initial, operation)
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with [initial] value.
 *
 * Note that `acc` value passed to [operation] function should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 *
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 *
 * @sample samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> ByteArray.scan(initial: R, operation: (acc: R, Byte) -> R): List<R> {
    return runningFold(initial, operation)
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element and current accumulator value that starts with [initial] value.
 *
 * Note that `acc` value passed to [operation] function should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 *
 * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 *
 * @sample samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> ShortArray.scan(initial: R, operation: (acc: R, Short) -> R): List<R> {
    return runningFold(initial, operation)
}

/**
 * Returns a list containing successive accumulation values generated by
 */

```


applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next

accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.scan(initial: R, operation: (acc: R, Int) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline
```

```
fun <R> LongArray.scan(initial: R, operation: (acc: R, Long) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.scan(initial: R, operation: (acc: R, Float) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

```
samples.collections.Collections.Aggregates.scan\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.scan(initial: R, operation: (acc: R, Double) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
```

```
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.scan(initial: R, operation: (acc: R, Boolean) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates
```

```
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.scan(initial: R, operation: (acc: R, Char) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with
```

[initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R> Array<out T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
```



```

selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
FloatArray.sumBy(selector: (Float) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied
to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
DoubleArray.sumBy(selector: (Double) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
BooleanArray.sumBy(selector: (Boolean) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic
inline fun CharArray.sumBy(selector: (Char) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum
+= selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Array<out T>.sumByDouble(selector: (T) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
ByteArray.sumByDouble(selector: (Byte) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n
sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
ShortArray.sumByDouble(selector: (Short) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
IntArray.sumByDouble(selector: (Int) -> Double): Double {\n var sum: Double = 0.0\n for (element in this) {\n
sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function
applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
LongArray.sumByDouble(selector: (Long) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
FloatArray.sumByDouble(selector: (Float) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\")\n)\n@DeprecatedSinceKotlin(warningSince
= "1.5")\npublic inline fun DoubleArray.sumByDouble(selector: (Double) -> Double): Double {\n var sum:
Double = 0.0\n for (element in this) {\n sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns

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the sum of all values produced by [selector] function applied to each element in the array.\n *\n@Deprecated("Use
sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\npublic inline fun BooleanArray.sumByDouble(selector: (Boolean) -> Double): Double {\n  var sum:
Double = 0.0\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns
the sum of all values produced by [selector] function applied to each element in the array.\n *\n@Deprecated("Use
sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\npublic inline fun CharArray.sumByDouble(selector: (Char) -> Double): Double {\n
  var sum: Double = 0.0\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n
* Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Array<out T>.sumOf(selector: (T) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element
in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sumOf(selector: (Byte) -> Double): Double
  {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sumOf(selector: (Short) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in
this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Double):
  Double {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum += selector(element)\n  }\n
  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.sumOf(selector: (Long) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in
this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float)
  -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sumOf(selector: (Double) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element
in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector:
  (Boolean) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum +=
  selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
  applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sumOf(selector: (Char) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in
  this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
  [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Array<out T>.sumOf(selector: (T) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum +=
  selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
  applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sumOf(selector: (Byte) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum +=
  selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
  applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sumOf(selector:
  (Short) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n
  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
  the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum +=
  selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
  applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.sumOf(selector: (Long) -> Int):
  Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
  sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
  array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum +=
  selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
  applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sumOf(selector: (Double) -> Int): Int {\n
  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**
  * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector: (Boolean) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sumOf(selector: (Char) -> Int): Int {\n  var sum: Int
= 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the
sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Array<out T>.sumOf(selector: (T) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this)
{\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sumOf(selector: (Byte) -> Long): Long {\n  var sum: Long = 0.toLong()\n
for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all
values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sumOf(selector: (Short) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Long): Long {\n  var sum: Long = 0.toLong()\n
for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all
values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.sumOf(selector: (Long) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n
sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element
in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sumOf(selector: (Double) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this)
{\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector: (Boolean) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element

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in this) {\n    sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sumOf(selector: (Char) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n
sum += selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> UInt): UInt
{\n    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    } \n return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.sumOf(selector: (Byte) -> UInt): UInt {\n    var
sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    } \n return sum\n}\n\n/**\n *
Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic
inline fun ShortArray.sumOf(selector: (Short) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in
this) {\n        sum += selector(element)\n    } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sumOf(selector: (Int) -> UInt): UInt {\n    var
sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    } \n return sum\n}\n\n/**\n *
Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.sumOf(selector: (Long) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in
this) {\n        sum += selector(element)\n    } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.sumOf(selector: (Float) -> UInt): UInt {\n    var
sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    } \n return sum\n}\n\n/**\n *
Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.sumOf(selector: (Double) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element
in this) {\n        sum += selector(element)\n    } \n return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType

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s::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.sumOf(selector: (Boolean) -> UInt): UInt
{\n    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.sumOf(selector: (Char) -> UInt): UInt {\n    var
sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n *
Returns the sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> ULong):
ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.sumOf(selector: (Byte) -> ULong): ULong
{\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.sumOf(selector:
(Short) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sumOf(selector: (Int) -> ULong): ULong {\n
var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.sumOf(selector: (Long) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.sumOf(selector: (Float) -> ULong): ULong
{\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic

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inline fun DoubleArray.sumOf(selector: (Double) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

@SinceKotlin("1.5")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfULong")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun BooleanArray.sumOf(selector: (Boolean) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

@SinceKotlin("1.5")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfULong")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun CharArray.sumOf(selector: (Char) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
// Returns an original collection containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.

public fun <T : Any> Array<T?>.requireNonNulls(): Array<T> {
    for (element in this) {
        if (element == null) {
            throw IllegalArgumentException("null element found in $this.")
        }
    }
    @Suppress("UNCHECKED_CAST")
    return this as Array<T>
}
// Splits the original array into pair of lists,
// where *first* list contains elements for which [predicate] yielded `true`,
// while *second* list contains elements for which [predicate] yielded `false`.
@sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives

public inline fun <T> Array<out T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {
    val first = ArrayList<T>()
    val second = ArrayList<T>()
    for (element in this) {
        if (predicate(element)) {
            first.add(element)
        } else {
            second.add(element)
        }
    }
    return Pair(first, second)
}
// Splits the original array into pair of lists,
// where *first* list contains elements for which [predicate] yielded `true`,
// while *second* list contains elements for which [predicate] yielded `false`.
@sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives

public inline fun ByteArray.partition(predicate: (Byte) -> Boolean): Pair<List<Byte>, List<Byte>> {
    val first = ArrayList<Byte>()
    val second = ArrayList<Byte>()
    for (element in this) {
        if (predicate(element)) {
            first.add(element)
        } else {
            second.add(element)
        }
    }
    return Pair(first, second)
}
// Splits the original array into pair of lists,
// where *first* list contains elements for which [predicate] yielded `true`,
// while *second* list contains elements for which [predicate] yielded `false`.
@sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives

public inline fun ShortArray.partition(predicate: (Short) -> Boolean): Pair<List<Short>, List<Short>> {
    val first = ArrayList<Short>()
    val second = ArrayList<Short>()
    for (element in this) {
        if (predicate(element)) {
            first.add(element)
        } else {
            second.add(element)
        }
    }
    return Pair(first, second)
}
// Splits the original array into pair of lists,
// where *first* list contains elements for which [predicate] yielded `true`,
// while *second* list contains elements for which [predicate] yielded `false`.
@sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives

public inline fun IntArray.partition(predicate: (Int) -> Boolean): Pair<List<Int>, List<Int>> {
    val first = ArrayList<Int>()
    val second = ArrayList<Int>()
    for (element in this) {
        if (predicate(element)) {
            first.add(element)
        } else {
            second.add(element)
        }
    }
    return Pair(first, second)
}
// Splits the original array into pair of lists,
// where *first* list contains elements for which [predicate] yielded `true`,
// while *second* list contains elements for which [predicate] yielded `false`.
@sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives

public inline fun LongArray.partition(predicate:

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(Long) -> Boolean): Pair<List<Long>, List<Long>> {\n  val first = ArrayList<Long>()\n  val second =
ArrayList<Long>()\n  for (element in this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else
{\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Splits the original array into
pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list
contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline fun
FloatArray.partition(predicate: (Float) -> Boolean): Pair<List<Float>, List<Float>> {\n  val first =
ArrayList<Float>()\n  val second = ArrayList<Float>()\n  for (element in this) {\n    if (predicate(element)) {\n
      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return
Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements
for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded
`false`.\n * \n * @sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline
fun DoubleArray.partition(predicate: (Double) -> Boolean): Pair<List<Double>, List<Double>> {\n  val first =
ArrayList<Double>()\n  val second = ArrayList<Double>()\n  for (element in this) {\n    if (predicate(element))
{\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline fun BooleanArray.partition(predicate: (Boolean) -> Boolean): Pair<List<Boolean>,
List<Boolean>> {\n  val first = ArrayList<Boolean>()\n  val second = ArrayList<Boolean>()\n  for (element in
this) {\n    if (predicate(element)) {\n      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list
contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which
[predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline fun
CharArray.partition(predicate: (Char) -> Boolean): Pair<List<Char>, List<Char>> {\n  val first =
ArrayList<Char>()\n  val second = ArrayList<Char>()\n  for (element in this) {\n    if (predicate(element)) {\n
      first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Returns a list of
pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic
infix fun <T, R> Array<out T>.zip(other: Array<out R>): List<Pair<T, R>> {\n  return zip(other) { t1, t2 -> t1 to
t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
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samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R> ByteArray.zip(other: Array<out R>):
List<Pair<Byte, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the
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-> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the
same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R> IntArray.zip(other: Array<out R>):
List<Pair<Int, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the
elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R>
LongArray.zip(other: Array<out R>): List<Pair<Long, R>> {\n  return zip(other) { t1, t2 ->
t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the
same index.\n * The returned list has length of the shortest collection.\n * \n * @sample

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samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> FloatArray.zip(other: Array<out
R>): List<Pair<Float, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R>
DoubleArray.zip(other: Array<out R>): List<Pair<Double, R>> {\n  return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\npublic infix fun <R> BooleanArray.zip(other: Array<out R>): List<Pair<Boolean, R>> {\n  return zip(other) {
t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array
with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> CharArray.zip(other: Array<out R>):
List<Pair<Char, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the
elements of `this` array and the [other] array with the same index\n * using the provided [transform] function
applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <T, R, V> Array<out
T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V):
List<V> {\n  val size = minOf(size, other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
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ByteArray.zip(other: Array<out R>, transform: (a: Byte, b: R) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n
}\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
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ShortArray.zip(other: Array<out R>, transform: (a: Short, b: R) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n
}\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
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LongArray.zip(other: Array<out R>, transform: (a: Long, b: R) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n
}\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
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*\npublic inline fun <R, V> FloatArray.zip(other: Array<out R>, transform: (a: Float, b: R) -> V): List<V> {\n
val size = minOf(size, other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n

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list.add(transform(this[i], other[i]))\n } \n return list\n\n\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
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DoubleArray.zip(other: Iterable<R>): List<Pair<Double, R>> {\n return zip(other) { t1, t2 -> t1 to t2
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}

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*^npublic inline fun <T, R, V> Array<out T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n
val arraySize = size\n    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i =
0\n    for (element in other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n
return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with
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fun <R, V> FloatArray.zip(other: Iterable<R>, transform: (a: Float, b: R) -> V): List<V> {\n    val arraySize =
size\n    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element
in other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n
return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other]
collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *^npublic inline fun <R, V>

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```

DoubleArray.zip(other: Iterable<R>, transform: (a: Double, b: R) -> V): List<V> {\n  val arraySize = size\n  val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n    if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline fun <R, V> BooleanArray.zip(other: Iterable<R>, transform: (a: Boolean, b: R) -> V): List<V> {\n  val arraySize = size\n  val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n    if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline fun <R, V> CharArray.zip(other: Iterable<R>, transform: (a: Char, b: R) -> V): List<V> {\n  val arraySize = size\n  val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n    if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun ByteArray.zip(other: ByteArray): List<Pair<Byte, Byte>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun ShortArray.zip(other: ShortArray): List<Pair<Short, Short>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun IntArray.zip(other: IntArray): List<Pair<Int, Int>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun LongArray.zip(other: LongArray): List<Pair<Long, Long>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun FloatArray.zip(other: FloatArray): List<Pair<Float, Float>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun DoubleArray.zip(other: DoubleArray): List<Pair<Double, Double>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun BooleanArray.zip(other: BooleanArray): List<Pair<Boolean, Boolean>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun CharArray.zip(other: CharArray): List<Pair<Char, Char>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */

```

```

*public inline fun <V> ByteArray.zip(other: ByteArray, transform: (a: Byte, b: Byte) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

*public inline fun <V> ShortArray.zip(other: ShortArray, transform: (a: Short, b: Short) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

*public inline fun <V> IntArray.zip(other: IntArray, transform: (a: Int, b: Int) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

*public inline fun <V> LongArray.zip(other: LongArray, transform: (a: Long, b: Long) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

*public inline fun <V> FloatArray.zip(other: FloatArray, transform: (a: Float, b: Float) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

*public inline fun <V> DoubleArray.zip(other: DoubleArray, transform: (a: Double, b: Double) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

*public inline fun <V> BooleanArray.zip(other: BooleanArray, transform: (a: Boolean, b: Boolean) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Returns a list of values built from the elements of `this` array and the [other] array with the same index * using the provided [transform] function applied to each pair of elements. * The returned list has length of the shortest array. * @sample samples.collections.Iterables.Operations.zipIterableWithTransform

```

CharArray.zip(other: CharArray, transform: (a: Char, b: Char) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

* Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied. * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit] * elements will be appended, followed by the [truncated] string (which defaults to


```

\"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n * \npublic fun <T, A :
Appendable> Array<out T>.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\").\n * \n * @sample
{\n buffer.append(prefix)\n var count = 0\n for
(element in this) {\n if (++count > 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n
buffer.appendElement(element, transform)\n } else break\n }\n if (limit >= 0 && count > limit)
buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n * \npublic fun <A : Appendable>
ByteArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\", postfix: CharSequence =
\"\", limit: Int = -1, truncated: CharSequence = \"...\").\n * \n * @sample
buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1)
buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n
buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n
}\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return
buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of
[limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which
defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n * \npublic fun <A :
Appendable> ShortArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix:
CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\").\n * \n * @sample
((Short) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n
if (++count > 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n
buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else
break\n }\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return
buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of
[limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which
defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n * \npublic fun <A : Appendable> IntArray.joinTo(buffer:
A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1,
truncated: CharSequence = \"...\").\n * \n * @sample
((Int) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var
count = 0\n for (element in this) {\n if (++count > 1) buffer.append(separator)\n if (limit < 0 || count <=
limit) {\n if (transform != null)\n buffer.append(transform(element))\n else\n
buffer.append(element.toString())\n } else break\n }\n if (limit >= 0 && count > limit)
buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit],
in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults
to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n * \npublic fun <A :
Appendable> LongArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\").\n * \n * @sample
((Long) -> CharSequence)? =
null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1)
buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n
buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n
}\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return

```

```

buffer\n}\n\n/**\n * Appends the string from all the elements separated using
 [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can
 specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed
 by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n */\npublic fun <A : Appendable>
FloatArray.joinTo(buffer: A, separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence =
 \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Float) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n
        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >=
0 && count > limit) buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends
the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n *
\n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first
 [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n */\npublic fun <A : Appendable>
DoubleArray.joinTo(buffer: A, separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Double) -> CharSequence)? =
null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1)
buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else
break\n    }\n    if (limit >= 0 && count > limit) buffer.append(truncated)\n    buffer.append(postfix)\n    return
buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
 [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of
 [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which
 defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n */\npublic fun <A :
Appendable> BooleanArray.joinTo(buffer: A, separator: CharSequence = \", \", prefix: CharSequence = \"\",
postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Boolean) ->
CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n
for (element in this) {\n        if (++count > 1) buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n
            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)
buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n */\npublic fun <A : Appendable>
CharArray.joinTo(buffer: A, separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence =
 \"\",
limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Char) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n
        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element)\n        } else break\n    }\n    if (limit >= 0 && count > limit)
buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Creates a string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n */\npublic

```

```

fun <T> Array<out T>.joinToString(separator: CharSequence = '\', '\', prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((T) -> CharSequence)? = null):
String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n
*/\npublic fun ByteArray.joinToString(separator: CharSequence = '\', '\', prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Byte) -> CharSequence)?
= null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n
*/\npublic fun ShortArray.joinToString(separator: CharSequence = '\', '\', prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Short) -> CharSequence)? =
null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative
value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n
*/\npublic fun IntArray.joinToString(separator: CharSequence = '\', '\', prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Int) -> CharSequence)? = null):
String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the
[truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n
*/\npublic fun LongArray.joinToString(separator:
CharSequence = '\', '\', prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated:
CharSequence = \"...\", transform: ((Long) -> CharSequence)? = null): String {\n  return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be
appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n
*/\npublic fun FloatArray.joinToString(separator:
CharSequence = '\', '\', prefix: CharSequence
= \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Float) ->
CharSequence)? = null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n
*/\npublic fun DoubleArray.joinToString(separator: CharSequence = '\', '\', prefix: CharSequence = \"\", postfix:
CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Double) -> CharSequence)? =
null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix,
limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using
[separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can

```



```

Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n * \n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n * \n\npublic fun LongArray.asSequence():
Sequence<Long> {\n if (isEmpty()) return emptySequence()\n return Sequence { this.iterator() }\n}\n\n/**\n *
Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n * \n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n * \n\npublic fun FloatArray.asSequence():
Sequence<Float> {\n if (isEmpty()) return emptySequence()\n return Sequence { this.iterator() }\n}\n\n/**\n *
Creates a [Sequence] instance that
wraps the original array returning its elements when being iterated.\n * \n * @sample
samples.collections.Sequences.Building.sequenceFromArray\n * \n\npublic fun DoubleArray.asSequence():
Sequence<Double> {\n if (isEmpty()) return emptySequence()\n return Sequence { this.iterator() }\n}\n\n/**\n *
Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n * \n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n * \n\npublic fun
BooleanArray.asSequence(): Sequence<Boolean> {\n if (isEmpty()) return emptySequence()\n return Sequence
{ this.iterator() }\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original array returning its elements
when being iterated.\n * \n * @sample samples.collections.Sequences.Building.sequenceFromArray\n * \n\npublic
fun CharArray.asSequence(): Sequence<Char> {\n if (isEmpty()) return emptySequence()\n return Sequence {
this.iterator() }\n}\n\n/**\n * Returns an average value
of elements in the array.\n * \n\n@kotlin.jvm.JvmName("averageOfByte")\n\npublic fun Array<out Byte>.average():
Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n
++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of
elements in the array.\n * \n\n@kotlin.jvm.JvmName("averageOfShort")\n\npublic fun Array<out Short>.average():
Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n
++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of
elements in the array.\n * \n\n@kotlin.jvm.JvmName("averageOfInt")\n\npublic fun Array<out Int>.average(): Double
{\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n
}\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n * \n\n@kotlin.jvm.JvmName("averageOfLong")\n\npublic fun
Array<out Long>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n *
Returns an average value of elements in the array.\n * \n\n@kotlin.jvm.JvmName("averageOfFloat")\n\npublic fun
Array<out Float>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n *
Returns an average value of elements in the array.\n * \n\n@kotlin.jvm.JvmName("averageOfDouble")\n\npublic fun
Array<out Double>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this)
{\n sum += element\n ++count\n }\n return if (count == 0) Double.NaN
else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n * \n\npublic fun
ByteArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n * \n\npublic fun ShortArray.average(): Double {\n var sum: Double =
0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n }\n return if (count
== 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n * \n\npublic
fun IntArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n * \n\npublic fun LongArray.average():
Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n
++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of
elements in the array.\n * \n\npublic fun FloatArray.average(): Double {\n var sum: Double = 0.0\n var count: Int
= 0\n for (element in this) {\n sum += element\n ++count\n }\n return if (count == 0) Double.NaN

```

```

else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n */\npublic fun
DoubleArray.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n        ++count\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
the sum of all elements in the array.\n */\n@kotlin.jvm.JvmName("sumOfByte")\npublic fun Array<out
Byte>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*/\n@kotlin.jvm.JvmName("sumOfShort")\npublic fun Array<out Short>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the
array.\n */\n@kotlin.jvm.JvmName("sumOfInt")\npublic fun Array<out Int>.sum(): Int {\n    var sum: Int = 0\n
for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in
the array.\n */\n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Array<out Long>.sum(): Long {\n    var sum:
Long = 0L\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of
all elements in the array.\n */\n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun Array<out Float>.sum(): Float
{\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Array<out Double>.sum(): Double {\n    var sum:
Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of
all elements in the array.\n */\npublic fun ByteArray.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\npublic fun
ShortArray.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\npublic fun IntArray.sum(): Int {\n    var sum:
Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all
elements in the array.\n */\npublic fun LongArray.sum(): Long {\n    var sum: Long = 0L\n    for (element
in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*/\npublic fun FloatArray.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum +=
element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\npublic fun
DoubleArray.sum(): Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
*/\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("RangesKt")\n\npackage
kotlin.ranges\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.random.*\n\n/**\n * Returns a
random
random
element from this range.\n */\n * @throws IllegalArgumentException if this range is empty.\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun IntRange.random(): Int {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this range.\n */\n * @throws
IllegalArgumentException if this range is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
inline fun LongRange.random(): Long {\n    return random(Random)\n}\n\n/**\n * Returns a random element from
this range.\n */\n * @throws IllegalArgumentException if this range is empty.\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharRange.random(): Char {\n    return
random(Random)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness.\n */\n * @throws IllegalArgumentException if this range is empty.\n
*/\n@SinceKotlin("1.3")\npublic fun IntRange.random(random: Random): Int {\n    try {\n        return
random.nextInt(this)\n    } catch (e: IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a random element from this range using the specified source of randomness.\n
*/\n * @throws
IllegalArgumentException if this range is empty.\n */\n@SinceKotlin("1.3")\npublic fun
LongRange.random(random: Random): Long {\n    try {\n        return random.nextLong(this)\n    } catch (e:

```


Checks if the specified [value] belongs to this range.\n *\n@Deprecated(\nThis
`contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be
removed.\n)\n@DeprecatedSinceKotlin(warningSince = \n1.3\n, errorSince = \n1.4\n, hiddenSince =
\n1.5\n)\n@kotlin.jvm.JvmName(\nfloatRangeContains\n)\npublic operator fun ClosedRange<Float>.contains(value:
Byte): Boolean {\n return contains(value.toFloat())\n}\n\n**\n * Checks if the specified [value] belongs to this
range.\n *\n@Deprecated(\nThis `contains` operation mixing integer and floating point arguments has ambiguous
semantics and is going to be removed.\n)\n@DeprecatedSinceKotlin(warningSince = \n1.3\n, errorSince = \n1.4\n,
hiddenSince = \n1.5\n)\n@kotlin.jvm.JvmName(\nintRangeContains\n)\npublic operator fun
ClosedRange<Int>.contains(value: Double): Boolean {\n return value.toIntExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@Deprecated(\nThis `contains` operation
mixing integer and floating point arguments has ambiguous semantics and is going to be
removed.\n)\n@DeprecatedSinceKotlin(warningSince = \n1.3\n, errorSince = \n1.4\n, hiddenSince =
\n1.5\n)\n@kotlin.jvm.JvmName(\nlongRangeContains\n)\npublic operator fun ClosedRange<Long>.contains(value:
Double): Boolean {\n return value.toLongExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n**\n *
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\n1.5\n)\n@kotlin.jvm.JvmName(\nbyteRangeContains\n)\npublic operator fun ClosedRange<Byte>.contains(value:
Double): Boolean {\n return value.toByteExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n**\n *
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\n1.5\n)\n@kotlin.jvm.JvmName(\nshortRangeContains\n)\npublic operator fun
ClosedRange<Short>.contains(value: Double): Boolean {\n return value.toShortExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName(\nfloatRangeContains\n)\npublic operator fun ClosedRange<Float>.contains(value:
Double): Boolean {\n return contains(value.toFloat())\n}\n\n**\n * Checks if the specified [value] belongs to this
range.\n *\n@Deprecated(\nThis `contains` operation mixing integer and floating point arguments has ambiguous
semantics and is going to be removed.\n)\n@DeprecatedSinceKotlin(warningSince = \n1.3\n, errorSince = \n1.4\n,
hiddenSince = \n1.5\n)\n@kotlin.jvm.JvmName(\nintRangeContains\n)\npublic
operator fun ClosedRange<Int>.contains(value: Float): Boolean {\n return value.toIntExactOrNull().let { if (it !=
null) contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
*\n@Deprecated(\nThis `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.\n)\n@DeprecatedSinceKotlin(warningSince = \n1.3\n, errorSince = \n1.4\n, hiddenSince
= \n1.5\n)\n@kotlin.jvm.JvmName(\nlongRangeContains\n)\npublic operator fun
ClosedRange<Long>.contains(value: Float): Boolean {\n return value.toLongExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n
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and is going to be removed.\n)\n@DeprecatedSinceKotlin(warningSince = \n1.3\n, errorSince = \n1.4\n, hiddenSince
= \n1.5\n)\n@kotlin.jvm.JvmName(\nshortRangeContains\n)\npublic operator fun
ClosedRange<Short>.contains(value: Float): Boolean {\n return value.toShortExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n**\n * Checks if the specified [value] belongs to this range.\n


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*\n@kotlin.jvm.JvmName("\doubleRangeContains")\npublic operator fun ClosedRange<Double>.contains(value:
Float): Boolean {\n    return contains(value.toDouble())\n}\n\n/**\n * Checks if the specified [value] belongs to this
range.\n
*\n@kotlin.jvm.JvmName("\longRangeContains")\npublic operator fun ClosedRange<Long>.contains(value: Int):
Boolean {\n    return contains(value.toLong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\byteRangeContains")\npublic operator fun ClosedRange<Byte>.contains(value: Int):
Boolean {\n    return value.toByteExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n * Checks if
the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\shortRangeContains")\npublic operator
fun ClosedRange<Short>.contains(value: Int): Boolean {\n    return value.toShortExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("\This `contains` operation mixing integer and floating point arguments has ambiguous semantics
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*\n@Deprecated("\This `contains` operation mixing integer and
floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "\1.3", errorSince = "\1.4", hiddenSince =
"\1.5")\n@kotlin.jvm.JvmName("\floatRangeContains")\npublic operator fun ClosedRange<Float>.contains(value:
Int): Boolean {\n    return contains(value.toFloat())\n}\n\n/**\n * Checks if the specified [value] belongs to this
range.\n
*\n@kotlin.jvm.JvmName("\intRangeContains")\npublic operator fun ClosedRange<Int>.contains(value:
Long): Boolean {\n    return value.toIntExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\byteRangeContains")\npublic
operator fun ClosedRange<Byte>.contains(value: Long): Boolean {\n    return value.toByteExactOrNull().let { if (it
!= null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\shortRangeContains")\npublic operator fun ClosedRange<Short>.contains(value:
Long): Boolean {\n    return value.toShortExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n *
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ClosedRange<Double>.contains(value: Long): Boolean {\n    return contains(value.toDouble())\n}\n\n/**\n *
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= "\1.5")\n@kotlin.jvm.JvmName("\floatRangeContains")\npublic operator fun
ClosedRange<Float>.contains(value: Long): Boolean {\n    return contains(value.toFloat())\n}\n\n/**\n * Checks if
the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\intRangeContains")\npublic operator fun
ClosedRange<Int>.contains(value: Short): Boolean {\n    return contains(value.toInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\longRangeContains")\npublic operator fun
ClosedRange<Long>.contains(value: Short): Boolean {\n    return contains(value.toLong())\n}\n\n/**\n * Checks if
the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("\byteRangeContains")\npublic operator
fun ClosedRange<Byte>.contains(value:
Short): Boolean {\n    return value.toByteExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("\This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "\1.3", errorSince = "\1.4", hiddenSince =
"\1.5")\n@kotlin.jvm.JvmName("\doubleRangeContains")\npublic operator fun
ClosedRange<Double>.contains(value: Short): Boolean {\n    return contains(value.toDouble())\n}\n\n/**\n *

```

Checks if the specified [value] belongs to this range.
`@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")`
`@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")`
`@kotlin.jvm.JvmName("floatRangeContains")`
`public operator fun ClosedRange<Float>.contains(value: Short): Boolean {`
`return contains(value.toFloat())`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Int.downTo(to: Byte): IntProgression {`
`return IntProgression.fromClosedRange(this, to.toInt(), -1)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Long.downTo(to: Byte): LongProgression {`
`return LongProgression.fromClosedRange(this, to.toLong(), -1L)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Byte.downTo(to: Byte): IntProgression {`
`return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Short.downTo(to: Byte): IntProgression {`
`return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Char.downTo(to: Char): CharProgression {`
`return CharProgression.fromClosedRange(this, to, -1)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Int.downTo(to: Int): IntProgression {`
`return IntProgression.fromClosedRange(this, to, -1)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Long.downTo(to: Int): LongProgression {`
`return LongProgression.fromClosedRange(this, to.toLong(), -1L)`
`}`
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`n * Returns a progression from this value down to the specified [to] value with the step -1.`
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`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`
`public infix fun Int.downTo(to: Long): LongProgression {`
`return LongProgression.fromClosedRange(this.toLong(), to, -1L)`
`}`
`n/n/**`
`n * Returns a progression from this value down to the specified [to] value with the step -1.`
`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
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`return LongProgression.fromClosedRange(this.toLong(), to, -1L)`
`}`
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`n * n * The [to] value should be less than or equal to `this` value.`
`n * If the [to] value is greater than `this` value the returned progression is empty.`
`n */`

```

* If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun
Short.downTo(to:
Long): LongProgression {\n    return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/**\n *
Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should
be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is
empty.\n */\npublic infix fun Int.downTo(to: Short): IntProgression {\n    return
IntProgression.fromClosedRange(this, to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the
specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to]
value is greater than `this` value the returned progression is empty.\n */\npublic infix fun Long.downTo(to: Short):
LongProgression {\n    return LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/**\n * Returns a
progression from this value down to the specified [to] value with the step -1.\n * \n * The [to]
value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned
progression is empty.\n */\npublic infix fun Byte.downTo(to: Short): IntProgression {\n    return
IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value
down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n
* If the [to] value is greater than `this` value the returned progression is empty.\n */\npublic infix fun
Short.downTo(to: Short): IntProgression {\n    return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -
1)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the same step.\n
*/\npublic fun IntProgression.reversed(): IntProgression {\n    return IntProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction
with the same step.\n */\npublic fun LongProgression.reversed(): LongProgression {\n    return
LongProgression.fromClosedRange(last, first, -step)\n}\n\n/**\n * Returns a progression that goes over the same
range in the opposite direction with the same step.\n */\npublic fun CharProgression.reversed(): CharProgression {\n
    return CharProgression.fromClosedRange(last, first, -step)\n}\n\n/**\n * Returns a progression that goes over the
same range with the given step.\n */\npublic infix fun IntProgression.step(step: Int): IntProgression {\n
    checkStepIsPositive(step > 0, step)\n    return IntProgression.fromClosedRange(first, last, if (this.step > 0) step else -
step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n */\npublic infix fun
LongProgression.step(step: Long): LongProgression {\n    checkStepIsPositive(step > 0, step)\n    return
LongProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a
progression that goes over the same range with the given step.\n */\npublic infix fun CharProgression.step(step:
Int): CharProgression {\n    checkStepIsPositive(step > 0, step)\n    return CharProgression.fromClosedRange(first,
last, if (this.step > 0) step else -step)\n}\n\ninternal fun Int.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toInt()..Byte.MAX_VALUE.toInt()) this.toByte() else null\n}\n\ninternal fun
Long.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toLong()..Byte.MAX_VALUE.toLong()) this.toByte() else null\n}\n\ninternal fun
Short.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toShort()..Byte.MAX_VALUE.toShort()) this.toByte() else null\n}\n\ninternal fun
Double.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toDouble()..Byte.MAX_VALUE.toDouble()) this.toInt().toByte() else null\n}\n\ninternal fun
Float.toByteExactOrNull(): Byte? {\n    return if (this in
Byte.MIN_VALUE.toFloat()..Byte.MAX_VALUE.toFloat())
this.toInt().toByte() else null\n}\n\ninternal fun Long.toIntExactOrNull(): Int? {\n    return if (this in
Int.MIN_VALUE.toLong()..Int.MAX_VALUE.toLong()) this.toInt() else null\n}\n\ninternal fun
Double.toIntExactOrNull(): Int? {\n    return if (this in
Int.MIN_VALUE.toDouble()..Int.MAX_VALUE.toDouble()) this.toInt() else null\n}\n\ninternal fun
Float.toIntExactOrNull(): Int? {\n    return if (this in Int.MIN_VALUE.toFloat()..Int.MAX_VALUE.toFloat())
this.toInt() else null\n}\n\ninternal fun Double.toLongExactOrNull(): Long? {\n    return if (this in
Long.MIN_VALUE.toDouble()..Long.MAX_VALUE.toDouble()) this.toLong() else null\n}\n\ninternal fun

```

Float.toLongExactOrNull(): Long? {\n return if (this in Long.MIN_VALUE.toFloat()..Long.MAX_VALUE.toFloat()) this.toLong() else null\n}\n\ninternal fun Int.toShortExactOrNull(): Short? {\n return if (this in Short.MIN_VALUE.toInt()..Short.MAX_VALUE.toInt()) this.toShort() else null\n}\n\ninternal fun Long.toShortExactOrNull(): Short? {\n return if (this in Short.MIN_VALUE.toLong()..Short.MAX_VALUE.toLong()) this.toShort() else null\n}\n\ninternal fun Double.toShortExactOrNull(): Short? {\n return if (this in Short.MIN_VALUE.toDouble()..Short.MAX_VALUE.toDouble()) this.toInt().toShort() else null\n}\n\ninternal fun Float.toShortExactOrNull(): Short? {\n return if (this in Short.MIN_VALUE.toFloat()..Short.MAX_VALUE.toFloat()) this.toInt().toShort() else null\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Int.until(to: Byte): IntRange {\n return this .. (to.toInt() - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Long.until(to: Byte): LongRange {\n return this .. (to.toLong() - 1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Byte.until(to: Byte): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Short.until(to: Byte): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Char.until(to: Char): CharRange {\n if (to <= '\u0000') return CharRange.EMPTY\n return this .. (to - 1).toChar()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Int.until(to: Int): IntRange {\n if (to <= Int.MIN_VALUE) return IntRange.EMPTY\n return this .. (to - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Long.until(to: Int): LongRange {\n return this .. (to.toLong() - 1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Byte.until(to: Int): IntRange {\n if (to <= Int.MIN_VALUE) return IntRange.EMPTY\n return this.toInt() .. (to - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Short.until(to: Int): IntRange {\n if (to <= Int.MIN_VALUE) return IntRange.EMPTY\n return this.toInt() .. (to - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Int.until(to: Long): LongRange {\n if (to <= Long.MIN_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Long.until(to: Long): LongRange {\n if (to <= Long.MIN_VALUE) return LongRange.EMPTY\n return this .. (to - 1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Byte.until(to: Long): LongRange {\n if (to <= Long.MIN_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Short.until(to: Long): LongRange {\n if (to <= Long.MIN_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or

equal to `this` value, then the returned range is empty.

```

public infix fun Int.until(to: Short): IntRange {
    return this .. (to.toInt() - 1).toInt()
}

```

* Returns a range from this value up to but excluding the specified [to] value. * If the [to] value is less than or equal to `this` value, then the returned range is empty.

```

public infix fun Long.until(to: Short): LongRange {
    return this .. (to.toLong() - 1).toLong()
}

```

* Returns a range from this value up to but excluding the specified [to] value. * If the [to] value is less than or equal to `this` value, then the returned range is empty.

```

public infix fun Byte.until(to: Short): IntRange {
    return this.toInt() .. (to.toInt() - 1).toInt()
}

```

* Returns a range from this value up to but excluding the specified [to] value. * If the [to] value is less than or equal to `this` value, then the returned range is empty.

```

public infix fun Short.until(to: Short): IntRange {
    return this.toInt() .. (to.toInt() - 1).toInt()
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun <T : Comparable<T>>
T.coerceAtLeast(minimumValue: T): T {
    return if (this < minimumValue) minimumValue else this
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun Byte.coerceAtLeast(minimumValue: Byte):
Byte {
    return if (this < minimumValue) minimumValue else this
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun Short.coerceAtLeast(minimumValue: Short):
Short {
    return if (this < minimumValue) minimumValue else this
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun Int.coerceAtLeast(minimumValue: Int): Int
{
    return if (this < minimumValue) minimumValue else this
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun Long.coerceAtLeast(minimumValue: Long): Long {
    return if (this < minimumValue) minimumValue else this
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun Float.coerceAtLeast(minimumValue: Float): Float {
    return if (this < minimumValue)
        minimumValue else this
}

```

* Ensures that this value is not less than the specified [minimumValue]. * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtLeast

```

```

public fun Double.coerceAtLeast(minimumValue: Double): Double {
    return if (this < minimumValue) minimumValue else this
}

```

* Ensures that this value is not greater than the specified [maximumValue]. * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtMostComparable

```

```

public fun <T : Comparable<T>>
T.coerceAtMost(maximumValue: T): T {
    return if (this > maximumValue)
        maximumValue else this
}

```

* Ensures that this value is not greater than the specified [maximumValue]. * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtMost

```

```

public fun Byte.coerceAtMost(maximumValue: Byte): Byte {
    return if (this > maximumValue) maximumValue else this
}

```

* Ensures that this value is not greater than the specified [maximumValue]. * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.

```

@sample
samples.comparisons.ComparableOps.coerceAtMost

```

```

public fun Short.coerceAtMost(maximumValue: Short):
Short {
    return if (this > maximumValue) maximumValue else this
}

```



```

this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n *
@return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n *\npublic fun Long.coerceIn(minimumValue: Long,
maximumValue: Long): Long {\n    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n
    if (this < minimumValue) return minimumValue\n    if (this > maximumValue) return maximumValue\n    return
this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n *
@return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n *\npublic fun Float.coerceIn(minimumValue: Float,
maximumValue: Float): Float {\n    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n    if (this < minimumValue) return minimumValue\n    if (this > maximumValue)
return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this
value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n *
@sample samples.comparisons.ComparableOps.coerceIn\n *\npublic fun Double.coerceIn(minimumValue:
Double, maximumValue: Double): Double {\n    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n    if (this < minimumValue) return minimumValue\n    if (this > maximumValue)
return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified [range].\n * \n *
@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive`
if this value is greater than `range.endInclusive`.\n * \n * @sample
samples.comparisons.ComparableOps.coerceInFloatingPointRange\n *\n@SinceKotlin("1.1")\npublic fun <T :
Comparable<T>> T.coerceIn(range: ClosedFloatingPointRange<T>): T {\n    if (range.isEmpty())
throw IllegalArgumentException("Cannot coerce value to an empty range: $range.")\n    return when {\n        //
this < start equiv to this <= start && !(this >= start)\n        range.lessThanOrEquals(this, range.start) &&
!range.lessThanOrEquals(range.start, this) -> range.start\n        // this > end equiv to this >= end && !(this <= end)\n
range.lessThanOrEquals(range.endInclusive, this) && !range.lessThanOrEquals(this, range.endInclusive) ->
range.endInclusive\n        else -> this\n    }\n}\n\n/**\n * Ensures that this value lies in the specified [range].\n * \n *
@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive`
if this value is greater than `range.endInclusive`.\n * \n * @sample
samples.comparisons.ComparableOps.coerceInComparable\n *\npublic fun <T : Comparable<T>>
T.coerceIn(range: ClosedRange<T>): T {\n    if (range is ClosedFloatingPointRange) {\n        return
this.coerceIn<T>(range)\n    }\n    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to
an empty range: $range.")\n    return when {\n        this < range.start -> range.start\n        this > range.endInclusive ->
range.endInclusive\n        else -> this\n    }\n}\n\n/**\n * Ensures that this value lies in the specified [range].\n * \n *
@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive`
if this value is greater than `range.endInclusive`.\n * \n * @sample samples.comparisons.ComparableOps.coerceIn\n *\npublic fun
Int.coerceIn(range: ClosedRange<Int>): Int {\n    if (range is ClosedFloatingPointRange) {\n        return
this.coerceIn<Int>(range)\n    }\n    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to
an empty range: $range.")\n    return when {\n        this < range.start -> range.start\n        this > range.endInclusive ->
range.endInclusive\n        else -> this\n    }\n}\n\n/**\n * Ensures that this value lies in the specified [range].\n * \n *
@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive`
if this value is greater than `range.endInclusive`.\n * \n *

```

```

* @sample samples.comparisons.ComparableOps.coerceIn\n *\npublic fun Long.coerceIn(range:
ClosedRange<Long>): Long {\n    if (range is ClosedFloatingPointRange) {\n        return
this.coerceIn<Long>(range)\n    }\n    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value
to an empty range: $range.")\n    return when {\n        this < range.start -> range.start\n        this >
range.endInclusive -> range.endInclusive\n        else -> this\n    }\n}\n\n"/**\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage
kotlin\n\nimport kotlin.experimental.*\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@JvmInline\npu
blic value class UByte @PublishedApi internal constructor(@PublishedApi internal val data: Byte) :
Comparable<UByte> {\n\n    companion object {\n        /**\n         * A constant holding the minimum value an
instance of UByte can have.\n         */\n        public const val MIN_VALUE: UByte = UByte(0)\n\n        /**\n         *
A constant holding the maximum value an instance of UByte can have.\n         */\n        public const val
MAX_VALUE: UByte = UByte(-1)\n\n        /**\n         * The number of bytes used to represent an instance of
UByte in a binary form.\n         */\n        public const val SIZE_BYTES: Int = 1\n\n        /**\n         * The number of
bits used to represent an instance of UByte in a binary form.\n         */\n        public const val SIZE_BITS: Int = 8\n
}\n\n    /**\n     * Compares this value with the
specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n
@Suppress("OVERRIDE_BY_INLINE")\n    public override inline operator fun compareTo(other: UByte): Int =
this.toInt().compareTo(other.toInt())\n\n    /**\n     * Compares this value with the specified value for order.\n     *
Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a
positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun
compareTo(other: UShort): Int = this.toInt().compareTo(other.toInt())\n\n    /**\n     * Compares this value with the
specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n     * or a positive
number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun
compareTo(other: UInt): Int = this.toUInt().compareTo(other)\n\n    /**\n     * Compares this value with the
specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n
public inline operator fun compareTo(other: ULong): Int = this.toULong().compareTo(other)\n\n    /** Adds the
other value to this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UByte): UInt =
this.toUInt().plus(other.toUInt())\n\n    /** Adds the other value to this value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UShort): UInt = this.toUInt().plus(other.toUInt())\n\n    /** Adds the other value
to this value. */\n    @kotlin.internal.InlineOnly\n    public
inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)\n\n    /** Adds the other value to this value. */\n
    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())\n\n    /** Subtracts the
other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UShort):
UInt = this.toUInt().minus(other.toUInt())\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UInt): UInt = this.toUInt().minus(other)\n\n    /** Subtracts the other value from
this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: ULong): ULong = this.toULong().minus(other)\n\n
    /** Multiplies this value by
the other value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UByte): UInt =
this.toUInt().times(other.toUInt())\n\n    /** Multiplies this value by the other value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UShort): UInt =

```



```

this.toUInt().times(other.toUInt())\n  /** Multiplies this value by the other value. */\n
@kotlin.internal.InlineOnly\n  public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)\n
/** Multiplies this value by the other value. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun
times(other: ULong): ULong = this.toULong().times(other)\n\n  /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator
fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())\n  /** Divides this value by the other value,
truncating the result to an integer
that is closer to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun div(other: UShort): UInt =
this.toUInt().div(other.toUInt())\n  /** Divides this value by the other value, truncating the result to an integer that
is closer to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun div(other: UInt): UInt =
this.toUInt().div(other)\n  /** Divides this value by the other value, truncating the result to an integer that is closer
to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun div(other: ULong): ULong =
this.toULong().div(other)\n\n  /**\n   * Calculates the remainder of truncating division of this value by the other
value.\n   * \n   * The result is always less than the divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public
inline operator fun rem(other: UByte): UInt = this.toUInt().rem(other.toUInt())\n  /**\n   * Calculates the
remainder of truncating division of this value by the other
value.\n   * \n   * The result is always less than the divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public
inline operator fun rem(other: UShort): UInt = this.toUInt().rem(other.toUInt())\n  /**\n   * Calculates the
remainder of truncating division of this value by the other value.\n   * \n   * The result is always less than the
divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public inline operator fun rem(other: UInt): UInt =
this.toUInt().rem(other)\n  /**\n   * Calculates the remainder of truncating division of this value by the other
value.\n   * \n   * The result is always less than the divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public
inline operator fun rem(other: ULong): ULong = this.toULong().rem(other)\n\n  /**\n   * Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.\n   * \n   * For unsigned types,
the results of flooring division and truncating division are
the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun floorDiv(other: UByte): UInt =
this.toUInt().floorDiv(other.toUInt())\n  /**\n   * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.\n   * \n   * For unsigned types, the results of flooring division and
truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun floorDiv(other:
UShort): UInt = this.toUInt().floorDiv(other.toUInt())\n  /**\n   * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.\n   * \n   * For unsigned types, the results of flooring
division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun
floorDiv(other: UInt): UInt = this.toUInt().floorDiv(other)\n  /**\n   * Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.\n   * \n   * For unsigned types, the results of flooring
division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun
floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)\n\n  /**\n   * Calculates the remainder of flooring division of this value by the
other value.\n   * \n   * The result is always less than the divisor.\n   * \n   * For unsigned types, the remainders
of flooring division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()\n  /**\n   * Calculates the remainder
of flooring division of this value by the other value.\n   * \n   * The result is always less than the divisor.\n   * \n
   * For unsigned types, the remainders of flooring division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun mod(other: UShort):
UShort = this.toUInt().mod(other.toUInt()).toUShort()\n  /**\n   * Calculates the remainder of flooring division
of this value by the other value.\n   * \n   * The result is always less than the divisor.\n   * \n   * For unsigned
types, the remainders of flooring division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n  /**\n   *
Calculates the remainder of flooring division of this value by the other value.\n   * \n   * The result is always less

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than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n /**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n */\n @kotlin.internal.InlineOnly\n public inline operator fun inc(): UByte = UByte(data.inc())\n\n /**\n * Returns this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n */\n @kotlin.internal.InlineOnly\n public inline operator fun dec(): UByte = UByte(data.dec())\n\n /** Creates a range from this value to the specified [other] value. */\n @kotlin.internal.InlineOnly\n public inline operator fun rangeTo(other: UByte): UIntRange = UIntRange(this.toUInt(), other.toUInt())\n\n /** Performs a bitwise AND operation between the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UByte): UByte = UByte(this.data and other.data)\n\n /** Performs a bitwise OR operation between the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun or(other: UByte): UByte = UByte(this.data or other.data)\n\n /** Performs a bitwise XOR operation between the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun xor(other: UByte): UByte = UByte(this.data xor other.data)\n\n /** Inverts the bits in this value. */\n @kotlin.internal.InlineOnly\n public inline fun inv(): UByte = UByte(data.inv())\n\n /**\n * Converts this [UByte] value to [Byte].\n * \n * If this value is less than or equals to [Byte.MAX_VALUE], the resulting `Byte` value represents the same numerical value as this `UByte`. Otherwise the result is negative.\n * \n * The resulting `Byte` value has the same binary representation as this `UByte` value.\n */\n @kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data\n\n /**\n * Converts this [UByte] value to [Short].\n * \n * The resulting `Short` value represents the same numerical value as this `UByte`. The least significant 8 bits of the resulting `Short` value are the same as the bits of this `UByte` value, whereas the most significant 8 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data.toShort() and 0xFF\n\n /**\n * Converts this [UByte] value to [Int].\n * \n * The resulting `Int` value represents the same numerical value as this `UByte`. The least significant 8 bits of the resulting `Int` value are the same as the bits of this `UByte` value, whereas the most significant 24 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data.toInt() and 0xFF\n\n /**\n * Converts this [UByte] value to [Long].\n * \n * The resulting `Long` value represents the same numerical value as this `UByte`. The least significant 8 bits of the resulting `Long` value are the same as the bits of this `UByte` value, whereas the most significant 56 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFF\n\n /** Returns this value. */\n @kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = this\n\n /**\n * Converts this [UByte] value to [UShort].\n * \n * The resulting `UShort` value represents the same numerical value as this `UByte`. The least significant 8 bits of the resulting `UShort` value are the same as the bits of this `UByte` value, whereas the most significant 8 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toUShort(): UShort = UShort(data.toShort() and 0xFF)\n\n /**\n * Converts this [UByte] value to [UInt].\n * \n * The resulting `UInt` value represents the same numerical value as this `UByte`. The least significant 8 bits of the resulting `UInt` value are the same as the bits of this `UByte` value, whereas the most significant 24 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toUInt(): UInt = UInt(data.toInt() and 0xFF)\n\n /**\n * Converts this [UByte] value to [ULong].\n * \n * The resulting `ULong` value represents the same numerical value as this `UByte`. The least significant 8 bits of the resulting `ULong` value are the same as the bits of this `UByte` value, whereas the most significant 56 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun toULong(): ULong = ULong(data.toLong() and 0xFF)\n\n /**\n * Converts this [UByte] value to [Float].\n * \n * The resulting `Float` value represents the same numerical value as this `UByte`.\n */\n @kotlin.internal.InlineOnly\n public inline fun toFloat(): Float = this.toInt().toFloat()\n\n /**\n * Converts this [UByte] value to [Double].\n * \n * The resulting `Double` value represents the same numerical value as this `UByte`.\n */\n @kotlin.internal.InlineOnly\n public inline

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fun toDouble(): Double = this.toInt().toDouble()\n\n public
override fun toString(): String = toInt().toString()\n\n}\n\n/**\n * Converts this [Byte] value to [UByte].\n *\n * If
this value is positive, the resulting `UByte` value represents the same numerical value as this `Byte`.\n *\n * The
resulting `UByte` value has the same binary representation as this `Byte` value.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
npublic inline fun Byte.toUByte(): UByte = UByte(this)\n\n/**\n * Converts this [Short] value to [UByte].\n *\n * If
this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n *
the same numerical value as this `Short`.\n *\n * The resulting `UByte` value is represented by the least significant 8
bits of this `Short` value.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
npublic inline fun Short.toUByte(): UByte = UByte(this.toByte())\n\n/**\n * Converts this [Int]
value to [UByte].\n *\n * If this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting
`UByte` value represents\n * the same numerical value as this `Int`.\n *\n * The resulting `UByte` value is
represented by the least significant 8 bits of this `Int` value.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
npublic inline fun Int.toUByte(): UByte = UByte(this.toByte())\n\n/**\n * Converts this [Long] value to [UByte].\n
*\n * If this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value
represents\n * the same numerical value as this `Long`.\n *\n * The resulting `UByte` value is represented by the
least significant 8 bits of this `Long` value.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
npublic inline fun Long.toUByte(): UByte = UByte(this.toByte())\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o.
and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage
kotlin\n\nimport kotlin.experimental.*\nimport
kotlin.jvm.*\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @JvmInline\npu
blic value class UInt @PublishedApi internal constructor(@PublishedApi internal val data: Int) :
Comparable<UInt> {\n\n companion object {\n\n /**\n * A constant holding the minimum value an
instance of UInt can have.\n * \n public const val MIN_VALUE: UInt = UInt(0)\n\n /**\n * A
constant holding the maximum value an instance of UInt can have.\n * \n public const val MAX_VALUE:
UInt = UInt(-1)\n\n /**\n * The number of bytes used to represent an instance of UInt in a binary form.\n
*\n public const val SIZE_BYTES: Int = 4\n\n
**\n * The number of bits used to represent an instance of UInt in a binary form.\n * \n public const
val SIZE_BITS: Int = 32\n } \n\n /**\n * Compares this value with the specified value for order.\n * Returns
zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a positive
number if it's greater than other.\n * \n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: UByte): Int = this.compareTo(other.toUInt())\n\n /**\n * Compares this value with the
specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n * or a positive number if it's greater than other.\n * \n @kotlin.internal.InlineOnly\n
public inline operator fun compareTo(other: UShort): Int = this.compareTo(other.toUInt())\n\n /**\n *
Compares this value with the specified value for order.\n
*\n * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n *
or a positive number if it's greater than other.\n * \n @kotlin.internal.InlineOnly\n
*\n @Suppress("OVERRIDE_BY_INLINE")\n public override inline operator fun compareTo(other: UInt): Int =
uintCompare(this.data, other.data)\n\n /**\n * Compares this value with the specified value for order.\n *
Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n *
or a positive number if it's greater than other.\n * \n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: ULong): Int = this.toULong().compareTo(other)\n\n /**\n * Adds the other value to this value. *\n

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@kotlin.internal.InlineOnly\n public inline operator fun plus(other: UByte): UInt = this.plus(other.toUInt())\n
/** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UShort): UInt = this.plus(other.toUInt())\n /** Adds the other value to this
value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UInt): UInt =
UInt(this.data.plus(other.data))\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: ULong): ULong = this.toULong().plus(other)\n\n /** Subtracts the other
value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UByte): UInt =
this.minus(other.toUInt())\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UShort): UInt = this.minus(other.toUInt())\n /** Subtracts the other value
from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UInt): UInt =
UInt(this.data.minus(other.data))\n /** Subtracts the other value from
this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong =
this.toULong().minus(other)\n\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UByte): UInt = this.times(other.toUInt())\n /** Multiplies this value by the
other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): UInt =
this.times(other.toUInt())\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UInt): UInt = UInt(this.data.times(other.data))\n /** Multiplies this value
by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: ULong): ULong =
this.toULong().times(other)\n\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n public
inline operator fun div(other: UByte): UInt = this.div(other.toUInt())\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UShort): UInt = this.div(other.toUInt())\n /** Divides this value by the other value, truncating the
result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other:
UInt): UInt = uintDivide(this, other)\n /** Divides this value by the other value, truncating the result to an integer
that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: ULong): ULong =
this.toULong().div(other)\n\n /**\n * Calculates the remainder of truncating division of this value by the other
value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other:
UByte): UInt = this.rem(other.toUInt())\n /**\n * Calculates the remainder of truncating division of this value
by the other value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n
public inline operator fun rem(other: UShort): UInt = this.rem(other.toUInt())\n /**\n * Calculates the
remainder of truncating division of this value by the other value.\n * \n * The result is always less than the
divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: UInt): UInt =
uintRemainder(this, other)\n /**\n * Calculates the remainder of truncating division of this value by the other
value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: ULong): ULong = this.toULong().rem(other)\n\n /**\n * Divides this value by
the other value, flooring the result to an integer that is
closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UByte): UInt =
this.floorDiv(other.toUInt())\n /**\n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UShort): UInt =
this.floorDiv(other.toUInt())\n /**\n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): UInt = div(other)\n
/**\n * Divides this value

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by the other value, flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned
types, the results of flooring division and truncating division are the same.\n * \n @kotlin.internal.InlineOnly\n
public inline fun floorDiv(other: ULong): ULong = this.toULong().floorDiv(other)\n\n /**\n * Calculates the
remainder of flooring division of this value by the other value.\n * \n * The result is always less than the
divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n
*\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UByte): UByte =
this.mod(other.toUInt()).toUByte()\n\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.\n
*\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.mod(other.toUInt()).toUShort()\n\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.\n
*\n @kotlin.internal.InlineOnly\n public inline
fun mod(other: UInt): UInt = rem(other)\n\n /**\n * Calculates the remainder of flooring division of this value by
the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n
*\n @kotlin.internal.InlineOnly\n public inline
fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n /**\n * Returns this value
incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n * \n
*\n @kotlin.internal.InlineOnly\n public inline operator fun inc(): UInt = UInt(data.inc())\n\n /**\n * Returns
this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n * \n
*\n @kotlin.internal.InlineOnly\n public inline operator fun dec(): UInt = UInt(data.dec())\n\n /** Creates a range
from this value to the specified [other] value. *\n @kotlin.internal.InlineOnly\n public inline operator fun
rangeTo(other: UInt): UIntRange = UIntRange(this, other)\n\n /**\n * Shifts this value left by the [bitCount]
number of bits.\n * \n * Note that only the five lowest-order bits of the [bitCount] are used as the shift
distance.\n * The shift distance actually used is therefore always in the range `0..31`.\n * \n
*\n @kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): UInt = UInt(data shl bitCount)\n\n /**\n
* Shifts this value right by the [bitCount] number of bits, filling the leftmost bits
with zeros.\n * \n * Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n
*\n * The shift distance actually used is therefore always in the range `0..31`.\n * \n
*\n @kotlin.internal.InlineOnly\n public inline infix fun shr(bitCount: Int): UInt = UInt(data ushr bitCount)\n\n /** Performs a bitwise AND
operation between the two values. *\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UInt):
UInt = UInt(this.data and other.data)\n\n /** Performs a bitwise OR operation between the two values. *\n
*\n @kotlin.internal.InlineOnly\n public inline infix fun or(other: UInt): UInt = UInt(this.data or other.data)\n\n /**
Performs a bitwise XOR operation between the two values. *\n @kotlin.internal.InlineOnly\n public inline infix
fun xor(other: UInt): UInt = UInt(this.data xor other.data)\n\n /** Inverts the bits in this value. *\n
*\n @kotlin.internal.InlineOnly\n public inline fun inv(): UInt
= UInt(data.inv())\n\n /**\n * Converts this [UInt] value to [Byte].\n * \n * If this value is less than or
equals to [Byte.MAX_VALUE], the resulting `Byte` value represents\n * the same numerical value as this
`UInt`.\n * \n * The resulting `Byte` value is represented by the least significant 8 bits of this `UInt` value.\n *
*\n Note that the resulting `Byte` value may be negative.\n * \n
*\n @kotlin.internal.InlineOnly\n public inline fun
toByte(): Byte = data.toByte()\n\n /**\n * Converts this [UInt] value to [Short].\n * \n * If this value is less
than or equals to [Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as
this `UInt`.\n * \n * The resulting `Short` value is represented by the least significant 16 bits of this `UInt`
value.\n * Note that the resulting `Short` value may be negative.\n * \n
*\n @kotlin.internal.InlineOnly\n public
inline fun toShort(): Short = data.toShort()\n\n
/**\n * Converts this [UInt] value to [Int].\n * \n * If this value is less than or equals to
[Int.MAX_VALUE], the resulting `Int` value represents\n * the same numerical value as this `UInt`. Otherwise
the result is negative.\n * \n * The resulting `Int` value has the same binary representation as this `UInt` value.\n

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    @kotlin.internal.InlineOnly public inline fun toInt(): Int = data.toInt() /** Converts this [UInt] value
to [Long]. The resulting `Long` value represents the same numerical value as this `UInt`. The least significant
32 bits of the resulting `Long` value are the same as the bits of this `UInt` value, whereas the most significant
32 bits are filled with zeros. */
    @kotlin.internal.InlineOnly public inline fun
toLong(): Long = data.toLong() and 0xFFFF_FFFF /** Converts this [UInt] value to [UByte]. If this value is less
than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents the same numerical value as this
`UInt`. The resulting `UByte` value is represented by the least significant 8 bits of this `UInt` value. */
    @kotlin.internal.InlineOnly public inline fun toUByte(): UByte = data.toUByte() /** Converts this
[UInt] value to [UShort]. If this value is less than or equals to [UShort.MAX_VALUE], the resulting
`UShort` value represents the same numerical value as this `UInt`. The resulting `UShort` value is
represented by the least significant 16 bits of this `UInt` value. */
    @kotlin.internal.InlineOnly public inline fun
toUShort(): UShort = data.toUShort() /** Returns this value. */
    @kotlin.internal.InlineOnly public inline fun
toInt(): UInt = this.toInt() /** Converts this [UInt] value to [ULong]. The resulting `ULong` value represents
the same numerical value as this `UInt`. The least significant 32 bits of the resulting `ULong` value are the
same as the bits of this `UInt` value, whereas the most significant 32 bits are filled with zeros. */
    @kotlin.internal.InlineOnly public inline fun toULong(): ULong = ULong(data.toLong() and
0xFFFF_FFFF) /** Converts this [UInt] value to [Float]. The resulting value is the closest `Float` to this
`UInt` value. In case when this `UInt` value is exactly between two `Float`s, the one with zero at least
significant bit of mantissa is selected. */
    @kotlin.internal.InlineOnly public inline fun
toFloat(): Float = this.toDouble().toFloat() /** Converts this [UInt] value to [Double]. The resulting
`Double` value represents the same numerical value as this `UInt`. */
    @kotlin.internal.InlineOnly public inline fun toDouble(): Double = UInt.toDouble(data) public
override fun toString(): String = toLong().toString() /** Converts this [Byte] value to [UInt]. If this
value is positive, the resulting `UInt` value represents the same numerical value as this `Byte`. The least
significant 8 bits of the resulting `UInt` value are the same as the bits of this `Byte` value, whereas the
most significant 24 bits are filled with the sign bit of this value. */
    @SinceKotlin("1.5") @WasExperimental(ExperimentalUnsignedTypes::class) @kotlin.internal.InlineOnly
public inline fun Byte.toInt(): UInt = UInt(this.toInt()) /** Converts this [Short] value to [UInt]. If
this value is positive, the resulting `UInt` value represents the same numerical value as this `Short`. The
least significant 16 bits of the resulting `UInt` value are the same as the bits of this `Short` value,
whereas the most significant 16 bits are filled with the sign bit of this value. */
    @SinceKotlin("1.5") @WasExperimental(ExperimentalUnsignedTypes::class) @kotlin.internal.InlineOnly
public inline fun Short.toInt(): UInt = UInt(this.toInt()) /** Converts this [Int] value to [UInt]. If this
value is positive, the resulting `UInt` value represents the same numerical value as this `Int`. The resulting
`UInt` value has the same binary representation as this `Int` value. */
    @SinceKotlin("1.5") @WasExperimental(ExperimentalUnsignedTypes::class) @kotlin.internal.InlineOnly
public inline fun Int.toInt(): UInt = UInt(this) /** Converts this [Long] value to [UInt]. If this value
is positive and less than or equals to [UInt.MAX_VALUE], the resulting `UInt` value represents the same
numerical value as this `Long`. The resulting `UInt` value is represented by the least significant 32 bits of
this `Long` value. */
    @SinceKotlin("1.5") @WasExperimental(ExperimentalUnsignedTypes::class) @kotlin.internal.InlineOnly
public inline fun Long.toInt(): UInt =
    UInt(this.toInt()) /** Converts this [Float] value to [UInt]. The fractional part, if any, is rounded
down towards zero. Returns zero if this `Float` value is negative or `NaN`, [UInt.MAX_VALUE] if it's bigger
than `UInt.MAX_VALUE`. */

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*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Float.toUInt(): UInt = doubleToUInt(this.toDouble())\n/**\n * Converts this [Double] value to [UInt].\n *\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Double` value is negative or `NaN`, [UInt.MAX_VALUE] if it's bigger than `UInt.MAX_VALUE`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Double.toUInt(): UInt = doubleToUInt(this)\n",/>\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin\n\nimport kotlin.experimental.*\nimport kotlin.jvm.*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@JvmInline\npublic value class UShort @PublishedApi internal constructor(@PublishedApi internal val data: Short) : Comparable<UShort> {\n\n    companion object {\n\n        /**\n         * A constant holding the minimum value an instance of UShort can have.\n         */\n        public const val MIN_VALUE: UShort = UShort(0)\n\n        /**\n         * A constant holding the maximum value an instance of UShort can have.\n         */\n        public const val MAX_VALUE: UShort = UShort(-1)\n\n        /**\n         * The number of bytes used to represent an instance of UShort in a binary form.\n         */\n        public const val SIZE_BYTES: Int = 2\n\n        /**\n         * The number of bits used to represent an instance of UShort in a binary form.\n         */\n        public const val SIZE_BITS: Int = 16\n    }\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UByte): Int = this.toInt().compareTo(other.toInt())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    @Suppress("OVERRIDE_BY_INLINE")\n    public override inline operator fun compareTo(other: UShort): Int = this.toInt().compareTo(other.toInt())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UInt): Int = this.toUInt().compareTo(other)\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: ULong): Int = this.toULong().compareTo(other)\n\n    /** Adds the other value to this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UByte): UInt = this.toUInt().plus(other.toUInt())\n\n    /** Adds the other value to this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UShort): UInt = this.toUInt().plus(other.toUInt())\n\n    /** Adds the other value to this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)\n\n    /** Adds the other value to this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: ULong): ULong = this.toULong().plus(other)\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UShort): UInt = this.toUInt().minus(other.toUInt())\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UInt): UInt = this.toUInt().minus(other)\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: ULong): ULong = this.toULong().minus(other)\n\n    /** Multiplies this value by the other value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())\n\n    /** Multiplies this value by the other value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UShort): UInt =

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this.toUInt().times(other.toUInt())\n  /** Multiplies this value by the other value. */\n
@kotlin.internal.InlineOnly\n  public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)\n
/** Multiplies this value by the other value. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun
times(other: ULong): ULong = this.toULong().times(other)\n\n  /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator
fun div(other: UByte): UInt =
    this.toUInt().div(other.toUInt())\n  /** Divides this value by the other value, truncating the result to an integer that
is closer to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun div(other: UShort): UInt =
this.toUInt().div(other.toUInt())\n  /** Divides this value by the other value, truncating the result to an integer that
is closer to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun div(other: UInt): UInt =
this.toUInt().div(other)\n  /** Divides this value by the other value, truncating the result to an integer that is closer
to zero. */\n  @kotlin.internal.InlineOnly\n  public inline operator fun div(other: ULong): ULong =
this.toULong().div(other)\n\n  /**\n   * Calculates the remainder of truncating division of this value by the other
value.\n   * \n   * The result is always less than the divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public
inline operator fun rem(other: UByte): UInt = this.toUInt().rem(other.toUInt())\n
  /**\n   * Calculates the remainder of truncating division of this value by the other value.\n   * \n   * The result
is always less than the divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public inline operator fun rem(other:
UShort): UInt = this.toUInt().rem(other.toUInt())\n  /**\n   * Calculates the remainder of truncating division of
this value by the other value.\n   * \n   * The result is always less than the divisor.\n   */\n
@kotlin.internal.InlineOnly\n  public inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)\n  /**\n
   * Calculates the remainder of truncating division of this value by the other value.\n   * \n   * The result is always
less than the divisor.\n   */\n  @kotlin.internal.InlineOnly\n  public inline operator fun rem(other: ULong):
ULong = this.toULong().rem(other)\n\n  /**\n   * Divides this value by the other value, flooring the result to an
integer that is closer to negative
infinity.\n   * \n   * For unsigned types, the results of flooring division and truncating division are the same.\n
*/\n  @kotlin.internal.InlineOnly\n  public inline fun floorDiv(other: UByte): UInt =
this.toUInt().floorDiv(other.toUInt())\n  /**\n   * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.\n   * \n   * For unsigned types, the results of flooring division and
truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun floorDiv(other:
UShort): UInt = this.toUInt().floorDiv(other.toUInt())\n  /**\n   * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.\n   * \n   * For unsigned types, the results of flooring
division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun
floorDiv(other: UInt): UInt = this.toUInt().floorDiv(other)\n  /**\n
   * Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n   * \n
   * For unsigned types, the results of flooring division and truncating division are the same.\n   */\n
@kotlin.internal.InlineOnly\n  public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)\n\n  /**\n   * Calculates the remainder of flooring division of this value by the
other value.\n   * \n   * The result is always less than the divisor.\n   * \n   * For unsigned types, the remainders
of flooring division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()\n  /**\n   * Calculates the remainder
of flooring division of this value by the other value.\n   * \n   * The result is always less than the divisor.\n   * \n
   * For unsigned types, the remainders of flooring division and truncating
division are the same.\n   */\n  @kotlin.internal.InlineOnly\n  public inline fun mod(other: UShort): UShort =
this.toUInt().mod(other.toUInt()).toUShort()\n  /**\n   * Calculates the remainder of flooring division of this
value by the other value.\n   * \n   * The result is always less than the divisor.\n   * \n   * For unsigned types,
the remainders of flooring division and truncating division are the same.\n   */\n  @kotlin.internal.InlineOnly\n
public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n  /**\n   * Calculates the remainder of
flooring division of this value by the other value.\n   * \n   * The result is always less than the divisor.\n   * \n
   */

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* For unsigned types, the remainders of flooring division and truncating division are the same.\n    *\n
@kotlin.internal.InlineOnly\n    public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n
/**\n    * Returns this value incremented by one.\n
    *\n    * @sample samples.misc.Builtins.inc\n    *\n    @kotlin.internal.InlineOnly\n    public inline operator fun
inc(): UShort = UShort(data.inc())\n\n    /**\n    * Returns this value decremented by one.\n    *\n    * @sample
samples.misc.Builtins.dec\n    *\n    @kotlin.internal.InlineOnly\n    public inline operator fun dec(): UShort =
UShort(data.dec())\n\n    /** Creates a range from this value to the specified [other] value. *\n
@kotlin.internal.InlineOnly\n    public inline operator fun rangeTo(other: UShort): UIntRange =
UIntRange(this.toUInt(), other.toUInt())\n\n    /** Performs a bitwise AND operation between the two values. *\n
@kotlin.internal.InlineOnly\n    public inline infix fun and(other: UShort): UShort = UShort(this.data and
other.data)\n\n    /** Performs a bitwise OR operation between the two values. *\n    @kotlin.internal.InlineOnly\n
public inline infix fun or(other: UShort): UShort = UShort(this.data or other.data)\n\n    /** Performs a
bitwise XOR operation between the two values. *\n    @kotlin.internal.InlineOnly\n    public inline infix fun
xor(other: UShort): UShort = UShort(this.data xor other.data)\n\n    /** Inverts the bits in this value. *\n
@kotlin.internal.InlineOnly\n    public inline fun inv(): UShort = UShort(data.inv())\n\n    /**\n    * Converts this
[UShort] value to [Byte].\n    *\n    * If this value is less than or equals to [Byte.MAX_VALUE], the resulting
`Byte` value represents\n    * the same numerical value as this `UShort`.\n    *\n    * The resulting `Byte` value is
represented by the least significant 8 bits of this `UShort` value.\n    * Note that the resulting `Byte` value may be
negative.\n    *\n    @kotlin.internal.InlineOnly\n    public inline fun toByte(): Byte = data.toByte()\n\n    /**\n    *
Converts this [UShort] value to [Short].\n    *\n    * If this value is less than or equals to [Short.MAX_VALUE],
the resulting `Short` value represents\n    * the same numerical
value as this `UShort`. Otherwise the result is negative.\n    *\n    * The resulting `Short` value has the same binary
representation as this `UShort` value.\n    *\n    @kotlin.internal.InlineOnly\n    public inline fun toShort(): Short =
data\n\n    /**\n    * Converts this [UShort] value to [Int].\n    *\n    * The resulting `Int` value represents the same
numerical value as this `UShort`.\n    *\n    * The least significant 16 bits of the resulting `Int` value are the same as
the bits of this `UShort` value,\n    * whereas the most significant 16 bits are filled with zeros.\n    *\n
@kotlin.internal.InlineOnly\n    public inline fun toInt(): Int = data.toInt() and 0xFFFF\n\n    /**\n    * Converts this
[UShort] value to [Long].\n    *\n    * The resulting `Long` value represents the same numerical value as this
`UShort`.\n    *\n    * The least significant 16 bits of the resulting `Long` value are the same as the bits of this
`UShort` value,\n    * whereas the most
significant 48 bits are filled with zeros.\n    *\n    @kotlin.internal.InlineOnly\n    public inline fun toLong(): Long
= data.toLong() and 0xFFFF\n\n    /**\n    * Converts this [UShort] value to [UByte].\n    *\n    * If this value is
less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n    * the same numerical
value as this `UShort`.\n    *\n    * The resulting `UByte` value is represented by the least significant 8 bits of this
`UShort` value.\n    *\n    @kotlin.internal.InlineOnly\n    public inline fun toUByte(): UByte = data.toUByte()\n
/** Returns this value. *\n    @kotlin.internal.InlineOnly\n    public inline fun toUShort(): UShort = this\n\n    /**\n    *
Converts this [UShort] value to [UInt].\n    *\n    * The resulting `UInt` value represents the same numerical
value as this `UShort`.\n    *\n    * The least significant 16 bits of the resulting `UInt` value are the same as the bits
of this `UShort` value,\n    * whereas
the most significant 16 bits are filled with zeros.\n    *\n    @kotlin.internal.InlineOnly\n    public inline fun
toUInt(): UInt = UInt(data.toInt() and 0xFFFF)\n\n    /**\n    * Converts this [UShort] value to [ULong].\n    *\n    *
The resulting `ULong` value represents the same numerical value as this `UShort`.\n    *\n    * The least significant
16 bits of the resulting `ULong` value are the same as the bits of this `UShort` value,\n    * whereas the most
significant 48 bits are filled with zeros.\n    *\n    @kotlin.internal.InlineOnly\n    public inline fun toULong():
ULong = ULong(data.toLong() and 0xFFFF)\n\n    /**\n    * Converts this [UShort] value to [Float].\n    *\n    *
The resulting `Float` value represents the same numerical value as this `UShort`.\n    *\n
@kotlin.internal.InlineOnly\n    public inline fun toFloat(): Float = this.toInt().toFloat()\n\n    /**\n    * Converts this
[UShort] value to [Double].\n    *\n    * The resulting `Double` value

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represents the same numerical value as this `UShort`.
 * Kotlin internal inline fun public inline fun
toDouble(): Double = this.toInt().toDouble()
 * Kotlin internal override fun toString(): String =
toInt().toString()
 * Converts this [Byte] value to [UShort].
 * If this value is positive, the
resulting `UShort` value represents the same numerical value as this `Byte` value,
 * The least significant 8 bits of the
resulting `UShort` value are the same as the bits of this `Byte` value,
 * whereas the most significant 8 bits are
filled with the sign bit of this value.
 * Kotlin internal WasExperimental(ExperimentalUnsignedTypes::class) Kotlin internal inline fun
public inline fun Byte.toUShort(): UShort = UShort(this.toShort())
 * Converts this [Short] value to
[UShort].
 * If this value is positive, the resulting `UShort` value represents the same numerical value as this
`Short`.
 * The resulting `UShort` value has the same binary
representation as this `Short` value.
 * Kotlin internal WasExperimental(ExperimentalUnsignedTypes::class) Kotlin internal inline fun
public inline fun Short.toUShort(): UShort = UShort(this)
 * Converts this [Int] value to [UShort].
 * If
this value is positive and less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents
 * the same numerical value as this `Int`.
 * The resulting `UShort` value is represented by the least significant 16
bits of this `Int` value.
 * Kotlin internal WasExperimental(ExperimentalUnsignedTypes::class) Kotlin internal inline fun
public inline fun Int.toUShort(): UShort = UShort(this.toShort())
 * Converts this [Long] value to
[UShort].
 * If this value is positive and less than or equals to [UShort.MAX_VALUE], the resulting `UShort`
value represents
 * the same numerical value as this `Long`.
 * The resulting `UShort` value is represented by
the least significant 16
bits of this `Long` value.
 * Kotlin internal WasExperimental(ExperimentalUnsignedTypes::class) Kotlin internal inline fun
public inline fun Long.toUShort(): UShort = UShort(this.toShort())
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and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.
 * Auto-generated file. DO NOT EDIT!
package
kotlin.ranges
 * A range of values of type `Char`.
 * Kotlin internal public class CharRange(start: Char, endInclusive:
Char) : CharProgression(start, endInclusive, 1), ClosedRange<Char> {
 * override val start: Char get() = first
 * override val endInclusive: Char get() = last
 * override fun contains(value: Char): Boolean = first <= value &&
value <= last
 * Checks whether the range is empty.
 * The range is empty if its start value is
greater than the end value.
 * override fun
isEmpty(): Boolean = first > last
 * override fun equals(other: Any?): Boolean =
other is CharRange &&
(isEmpty() && other.isEmpty() || first == other.first && last == other.last)
 * override fun hashCode(): Int
=
if (isEmpty()) -1 else (31 * first.code + last.code)
 * override fun toString(): String = "$first..$last"
 * companion object {
 * /** An empty range of values of type Char.
 * Kotlin internal public val EMPTY: CharRange =
CharRange(1.toChar(), 0.toChar())
 * }
 * A range of values of type `Int`.
 * Kotlin internal public class
IntRange(start: Int, endInclusive: Int) : IntProgression(start, endInclusive, 1), ClosedRange<Int> {
 * override val
start: Int get() = first
 * override val endInclusive: Int get() = last
 * override fun contains(value: Int): Boolean =
first <= value && value <= last
 * Checks whether the range is empty.
 * The range is empty
if its start value is greater than the end value.
 * override fun
isEmpty(): Boolean = first > last
 * override fun equals(other: Any?): Boolean =
other is IntRange && (isEmpty() && other.isEmpty() || first == other.first && last == other.last)
 * override fun hashCode(): Int
=
if (isEmpty()) -1 else (31 * first + last)
 * override fun toString(): String =
"$first..$last"
 * companion object {
 * /** An empty range of values of type Int.
 * Kotlin internal public val
EMPTY: IntRange = IntRange(1, 0)
 * }
 * A range of values of type `Long`.
 * Kotlin internal public class
LongRange(start: Long, endInclusive: Long) : LongProgression(start, endInclusive, 1), ClosedRange<Long> {
 * override val
start: Long get() = first
 * override val endInclusive: Long get() = last
 * override fun
contains(value: Long): Boolean = first <= value && value <= last
 * Checks whether the range is

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samples.collections.Collections.Lists.mutableList\n *\npublic fun <T> mutableListOf(vararg elements: T):
MutableList<T> =\n if (elements.size == 0) ArrayList() else ArrayList(ArrayAsCollection(elements,
isVarargs = true))\n\n/**\n * Returns a new [ArrayList] with the given elements.\n * @sample
samples.collections.Collections.Lists.arrayList\n *\npublic fun <T> arrayListOf(vararg elements: T): ArrayList<T>
=\n if (elements.size == 0) ArrayList() else ArrayList(ArrayAsCollection(elements, isVarargs = true))\n\n/**\n *
Returns a new read-only list either of single given element, if it is not null, or empty list if the element is null. The
returned list is serializable (JVM).\n * @sample samples.collections.Collections.Lists.listOfNotNull\n *\npublic fun
<T : Any> listOfNotNull(element: T?): List<T> = if (element != null) listOf(element) else emptyList()\n\n/**\n *
Returns a new read-only list only of those given elements, that are not null. The returned list is serializable
(JVM).\n * @sample samples.collections.Collections.Lists.listOfNotNull\n *\npublic fun <T : Any>
listOfNotNull(vararg elements: T?): List<T> = elements.filterNotNull()\n\n/**\n * Creates
a new read-only list with the specified [size], where each element is calculated by calling the specified\n * [init]
function.\n * The function [init] is called for each list element sequentially starting from the first one.\n * It
should return the value for a list element given its index.\n * @sample
samples.collections.Collections.Lists.readOnlyListFromInitializer\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> List(size: Int, init: (index: Int) -> T):
List<T> = MutableList(size, init)\n\n/**\n * Creates a new mutable list with the specified [size], where each element
is calculated by calling the specified\n * [init] function.\n * The function [init] is called for each list element
sequentially starting from the first one.\n * It should return the value for a list element given its index.\n * @sample
samples.collections.Collections.Lists.mutableListFromInitializer\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline
fun <T> MutableList(size: Int, init: (index: Int) -> T): MutableList<T> {\n val list = ArrayList<T>(size)\n
repeat(size) { index -> list.add(init(index)) }\n return list\n}\n\n/**\n * Builds a new read-only [List] by
populating a [MutableList] using the given [builderAction]\n * and returning a read-only list with the same
elements.\n * The list passed as a receiver to the [builderAction] is valid only inside that function.\n * Using it
outside of the function produces an unspecified behavior.\n * The returned list is serializable (JVM).\n * @sample
samples.collections.Builders.Lists.buildListSample\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <E> buildList(@BuilderInference builderAction: MutableList<E>().-> Unit): List<E> {\n contract {
callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
buildListInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal
expect inline fun <E> buildListInternal(builderAction: MutableList<E>().-> Unit): List<E>\n\n/**\n * Builds a
new read-only [List] by populating a [MutableList] using the given [builderAction]\n * and returning a read-only list
with the same elements.\n * The list passed as a receiver to the [builderAction] is valid only inside that
function.\n * Using it outside of the function produces an unspecified behavior.\n * The returned list is
serializable (JVM).\n * [capacity] is used to hint the expected number of elements added in the
[builderAction].\n * @throws IllegalArgumentException if the given [capacity] is negative.\n * @sample
samples.collections.Builders.Lists.buildListSampleWithCapacity\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <E> buildList(capacity: Int, @BuilderInference builderAction: MutableList<E>().-> Unit): List<E> {\n
contract
{ callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return buildListInternal(capacity,
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline
fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>().-> Unit): List<E>\n\n/**\n * Returns an
[IntRange] of the valid indices for this collection.\n * @sample
samples.collections.Collections.Collections.indicesOfCollection\n *\npublic val Collection<*>.indices: IntRange\n
get() = 0..size - 1\n\n/**\n * Returns the index of the last item in the list or -1 if the list is empty.\n * @sample

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samples.collections.Collections.Lists.lastIndexOfList\n *^\\npublic val <T> List<T>.lastIndex: Int\n  get() =
this.size - 1\\n\\n/**\\n * Returns `true` if the collection is not empty.\\n * @sample
samples.collections.Collections.Collections.collectionIsNotEmpty\n *^\\n@kotlin.internal.InlineOnly\\npublic inline
fun <T> Collection<T>.isNotEmpty(): Boolean = !isEmpty()\\n\\n/**\\n
 * Returns `true` if this nullable collection is either null or empty.\\n * @sample
samples.collections.Collections.Collections.collectionOrNull\n *^\\n@SinceKotlin("1.3")\\n@kotlin.internal.InlineOnly\\npublic inline fun <T> Collection<T>?.isNullOrNull():
Boolean {\\n  contract {\\n    returns(false) implies (this@isNullOrNull != null)\\n  }\\n  return this == null ||
this.isEmpty()\\n}\\n\\n/**\\n * Returns this Collection if it's not `null` and the empty list otherwise.\\n * @sample
samples.collections.Collections.Collections.collectionOrNull\n *^\\n@kotlin.internal.InlineOnly\\npublic inline fun
<T> Collection<T>?.orEmpty(): Collection<T> = this ?: emptyList()\\n\\n/**\\n * Returns this List if it's not `null` and
the empty list otherwise.\\n * @sample samples.collections.Collections.Lists.listOrNull\n *^\\n@kotlin.internal.InlineOnly\\npublic inline fun <T> List<T>?.orEmpty(): List<T> = this ?: emptyList()\\n\\n/**\\n
 * Returns this collection if it's not empty\\n * or the
result of calling [defaultValue] function if the collection is empty.\\n *\\n * @sample
samples.collections.Collections.Collections.collectionIfEmpty\n *^\\n@SinceKotlin("1.3")\\n@kotlin.internal.InlineOnly\\npublic inline fun <C, R> C.ifEmpty(defaultValue: () ->
R): R where C : Collection<*>, C : R =\\n  if (isEmpty()) defaultValue() else this\\n\\n/**\\n * Checks if all
elements in the specified collection are contained in this collection.\\n *\\n * Allows to overcome type-safety
restriction of `containsAll` that requires to pass a collection of type `Collection<E>`.\\n * @sample
samples.collections.Collections.Collections.collectionContainsAll\n *^\\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\\n@kotlin.internal.InlineOnly\\npublic inline fun <@kotlin.internal.OnlyInputTypes T>
Collection<T>.containsAll(elements: Collection<T>): Boolean = this.containsAll(elements)\\n\\n/**\\n * Returns a
new list with the elements of this list randomly
shuffled\\n * using the specified [random] instance as the source of randomness.\\n
 *^\\n@SinceKotlin("1.3")\\npublic fun <T> Iterable<T>.shuffled(random: Random): List<T> =
toMutableList().apply { shuffle(random) }\\n\\ninternal fun <T> List<T>.optimizeReadOnlyList() = when (size) {\\n
  0 -> emptyList()\\n  1 -> listOf(this[0])\\n  else -> this\\n}\\n\\n/**\\n * Searches this list or its range for the provided
[element] using the binary search algorithm.\\n * The list is expected to be sorted into ascending order according to
the Comparable natural ordering of its elements,\\n * otherwise the result is undefined.\\n *\\n * If the list contains
multiple elements equal to the specified [element], there is no guarantee which one will be found.\\n *\\n * `null`
value is considered to be less than any non-null value.\\n *\\n * @return the index of the element, if it is contained in
the list within the specified range;\\n * otherwise, the inverted insertion point `(-insertion point - 1)`.\\n * The
insertion point is defined as the index at which the element should be inserted,\\n * so that the list (or the specified
subrange of list) still remains sorted.\\n * @sample
samples.collections.Collections.Lists.binarySearchOnComparable\n * @sample
samples.collections.Collections.Lists.binarySearchWithBoundaries\n *^\\npublic fun <T : Comparable<T>>
List<T>?.binarySearch(element: T?, fromIndex: Int = 0, toIndex: Int = size): Int {\\n  rangeCheck(size, fromIndex,
toIndex)\\n\\n  var low = fromIndex\\n  var high = toIndex - 1\\n\\n  while (low <= high) {\\n    val mid = (low +
high).ushr(1) // safe from overflows\\n    val midVal = get(mid)\\n    val cmp = compareValues(midVal,
element)\\n\\n    if (cmp < 0)\\n      low = mid + 1\\n    else if (cmp > 0)\\n      high = mid - 1\\n    else\\n
return mid // key found\\n  }\\n  return -(low + 1) // key not found\\n}\\n\\n/**\\n * Searches this list or its range
for the provided [element] using the binary search
algorithm.\\n * The list is expected to be sorted into ascending order according to the specified [comparator],\\n *
otherwise the result is undefined.\\n *\\n * If the list contains multiple elements equal to the specified [element], there
is no guarantee which one will be found.\\n *\\n * `null` value is considered to be less than any non-null value.\\n *\\n *
@return the index of the element, if it is contained in the list within the specified range;\\n * otherwise, the inverted

```

insertion point ``(-insertion point - 1)``.
 The insertion point is defined as the index at which the element should be inserted, so that the list (or the specified subrange of list) still remains sorted according to the specified [comparator].

@sample samples.collections.Collections.Lists.binarySearchWithComparator
 public fun <T> List<T>.binarySearch(element: T, comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Int {
 rangeCheck(size, fromIndex, toIndex)
 var low = fromIndex
 var high = toIndex - 1
 while (low <= high) {
 val mid = (low + high).ushr(1) // safe from overflows
 val midVal = get(mid)
 val cmp = comparator.compare(midVal, element)
 if (cmp < 0) low = mid + 1
 else if (cmp > 0) high = mid - 1
 else return mid // key found
 }
 return -(low + 1) // key not found
 }

Searches this list or its range for an element having the key returned by the specified [selector] function equal to the provided [key] value using the binary search algorithm. The list is expected to be sorted into ascending order according to the Comparable natural ordering of keys of its elements. otherwise the result is undefined.
 * If the list contains multiple elements with the specified [key], there is no guarantee which one will be found.
 * `null` value is considered to be less than any non-null value.
 * @return the index of the element with the specified [key], if it is contained in the list within the specified range; otherwise, the inverted insertion point ``(-insertion point - 1)``.

The insertion point is defined as the index at which the element should be inserted, so that the list (or the specified subrange of list) still remains sorted.

@sample samples.collections.Collections.Lists.binarySearchByKey
 public inline fun <T, K : Comparable<K>> List<T>.binarySearchBy(key: K?, fromIndex: Int = 0, toIndex: Int = size, crossinline selector: (T) -> K?): Int = binarySearch(fromIndex, toIndex) { compareValues(selector(it), key) }

do not introduce this overload --- too rare
 public fun <T, K> List<T>.binarySearchBy(key: K, comparator: Comparator<K>, fromIndex: Int = 0, toIndex: Int = size(), selector: (T) -> K): Int = binarySearch(fromIndex, toIndex) { comparator.compare(selector(it), key) }

Searches this list or its range for an element for which the given [comparison] function returns zero using the binary search algorithm.
 * The list is expected to be sorted so that the signs of the [comparison] function's return values ascend on the list elements, i.e. negative values come before zero and zeroes come before positive values.
 * Otherwise, the result is undefined.
 * If the list contains multiple elements for which [comparison] returns zero, there is no guarantee which one will be found.
 * @param comparison function that returns zero when called on the list element being searched.
 * On the elements coming before the target element, the function must return negative values;
 * on the elements coming after the target element, the function must return positive values.
 * @return the index of the found element, if it is contained in the list within the specified range; otherwise, the inverted insertion point ``(-insertion point - 1)``.

The insertion point is defined as the index at which the element should be inserted, so that the list (or the specified subrange of list) still remains sorted.

@sample samples.collections.Collections.Lists.binarySearchWithComparisonFunction
 public fun <T> List<T>.binarySearch(fromIndex: Int = 0, toIndex: Int = size, comparison: (T) -> Int): Int {
 rangeCheck(size, fromIndex, toIndex)
 var low = fromIndex
 var high = toIndex - 1
 while (low <= high) {
 val mid = (low + high).ushr(1) // safe from overflows
 val midVal = get(mid)
 val cmp = comparison(midVal)
 if (cmp < 0) low = mid + 1
 else if (cmp > 0) high = mid - 1
 else return mid // key found
 }
 return -(low + 1) // key not found
 }

Checks that `from` and `to` are in the range of [0..size] and throws an appropriate exception, if they aren't.
 private fun rangeCheck(size: Int, fromIndex: Int, toIndex: Int) {
 when {
 fromIndex > toIndex -> throw IllegalArgumentException("fromIndex (\$fromIndex) is greater than toIndex (\$toIndex).")
 fromIndex < 0 -> throw IndexOutOfBoundsException("fromIndex (\$fromIndex) is less than zero.")
 toIndex > size -> throw IndexOutOfBoundsException("toIndex (\$toIndex) is greater than size (\$size).")
 }
 }

@PublishedApi
 @SinceKotlin("1.3")
 internal expect fun checkIndexOverflow(index: Int): Int
 @PublishedApi
 @SinceKotlin("1.3")
 internal expect fun checkCountOverflow(count: Int): Int
 @PublishedApi
 @SinceKotlin("1.3")
 internal fun throwIndexOverflow() {
 throw ArithmeticException("Index overflow has happened.")
 }

@PublishedApi
 @SinceKotlin("1.3")
 internal fun

```

throwCountOverflow() { throw ArithmeticException("Count overflow has happened.") }\n\n"/*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can
be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n@file:OptIn(kotlin.experiment
al.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\n\nprivate object
EmptyMap : Map<Any?, Nothing>, Serializable {\n    private const val serialVersionUID: Long =
8246714829545688274\n\n    override fun equals(other: Any?): Boolean = other is Map<*, *> &&
other.isEmpty()\n    override fun hashCode(): Int = 0\n    override fun toString(): String = "{}"\n\n    override val
size: Int get() = 0\n    override fun isEmpty(): Boolean = true\n\n    override fun containsKey(key: Any?): Boolean =
false\n    override fun containsValue(value: Nothing): Boolean = false\n    override fun get(key: Any?): Nothing? =
null\n    override val entries: Set<Map.Entry<Any?, Nothing>> get() = EmptySet\n    override val keys: Set<Any?>
get() = EmptySet\n    override val values: Collection<Nothing> get() = EmptyList\n\n    private fun readResolve(): Any = EmptyMap\n}\n\n/**\n * Returns an empty read-only map of specified type.\n
*\n * The returned map is serializable (JVM).\n * @sample
samples.collections.Maps.Instantiation.emptyReadOnlyMap\n */\n\npublic fun <K, V> emptyMap(): Map<K, V> =
@Suppress("UNCHECKED_CAST") (EmptyMap as Map<K, V>)\n\n/**\n * Returns a new read-only map with
the specified contents, given as a list of pairs\n * where the first value is the key and the second is the value.\n
*\n * If multiple pairs have the same key, the resulting map will contain the value from the last of those pairs.\n
*\n * Entries of the map are iterated in the order they were specified.\n * The returned map is serializable (JVM).\n
*\n * @sample samples.collections.Maps.Instantiation.mapFromPairs\n */\n\npublic fun <K, V> mapOf(vararg pairs:
Pair<K, V>): Map<K, V> =\n    if (pairs.size > 0) pairs.toMap(LinkedHashMap(mapCapacity(pairs.size))) else
emptyMap()\n\n/**\n * Returns an empty read-only map.\n
*\n * The returned map is serializable (JVM).\n * @sample
samples.collections.Maps.Instantiation.emptyReadOnlyMap\n */\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
<K, V> mapOf(): Map<K, V> = emptyMap()\n\n/**\n * Returns an empty new [MutableMap].\n * The returned
map preserves the entry iteration order.\n * @sample samples.collections.Maps.Instantiation.emptyMutableMap\n
*/\n\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <K, V> mutableMapOf():
MutableMap<K, V> = LinkedHashMap()\n\n/**\n * Returns a new [MutableMap] with the specified contents, given
as a list of pairs\n * where the first component is the key and the second is the value.\n * If multiple pairs have
the same key, the resulting map will contain the value from the last of those pairs.\n * Entries of the map are
iterated in the order they were specified.\n * @sample
samples.collections.Maps.Instantiation.mutableMapFromPairs\n * @sample
samples.collections.Maps.Instantiation.emptyMutableMap\n
*/\n\npublic fun <K, V> mutableMapOf(vararg pairs: Pair<K, V>): MutableMap<K, V> =\n    LinkedHashMap<K,
V>(mapCapacity(pairs.size)).apply { putAll(pairs) }\n\n/**\n * Returns an empty new [HashMap].\n * @sample
samples.collections.Maps.Instantiation.emptyHashMap\n
*/\n\n@SinceKotlin("1.1")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <K, V> hashMapOf(): HashMap<K, V>
= HashMap<K, V>()\n\n/**\n * Returns a new [HashMap] with the specified contents, given as a list of pairs\n *
where the first component is the key and the second is the value.\n * @sample
samples.collections.Maps.Instantiation.hashMapFromPairs\n */\n\npublic fun <K, V> hashMapOf(vararg pairs:
Pair<K, V>): HashMap<K, V> = HashMap<K, V>(mapCapacity(pairs.size)).apply { putAll(pairs) }\n\n/**\n *
Returns an empty new [LinkedHashMap].\n * @SinceKotlin("1.1")\n * @kotlin.internal.InlineOnly\n * public inline
fun <K, V> linkedMapOf(): LinkedHashMap<K, V> = LinkedHashMap<K, V>()\n\n/**\n * Returns a new
[LinkedHashMap]
with the specified contents, given as a list of pairs\n * where the first component is the key and the second is the
value.\n * If multiple pairs have the same key, the resulting map will contain the value from the last of those
pairs.\n * Entries of the map are iterated in the order they were specified.\n * @sample

```

```

samples.collections.Maps.Instantiation.linkedMapFromPairs\n */\npublic fun <K, V> linkedMapOf(vararg pairs:
Pair<K, V>): LinkedHashMap<K, V> = pairs.toMap(LinkedHashMap(mapCapacity(pairs.size)))\n\n/**\n * Builds
a new read-only [Map] by populating a [MutableMap] using the given [builderAction]\n * and returning a read-only
map with the same key-value pairs.\n * \n * The map passed as a receiver to the [builderAction] is valid only inside
that function.\n * Using it outside of the function produces an unspecified behavior.\n * \n * Entries of the map are
iterated in the order they were added by the [builderAction].\n * \n * The returned map is serializable
(JVM).\n * \n * @sample samples.collections.Builders.Maps.buildMapSample\n
*/\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V> buildMap(@BuilderInference builderAction: MutableMap<K, V>().->Unit): Map<K, V> {\n
contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
buildMapInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal
expect inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>().->Unit): Map<K,
V>\n\n/**\n * Builds a new read-only [Map] by populating a [MutableMap] using the given [builderAction]\n * and
returning a read-only map with the same key-value pairs.\n * \n * The map passed as a receiver to the
[builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified
behavior.\n * \n * [capacity] is used to hint the expected number of pairs added in the
[builderAction].\n * \n * Entries of the map are iterated in the order they were added by the [builderAction].\n * \n *
The returned map is serializable (JVM).\n * \n * @throws IllegalArgumentException if the given [capacity] is
negative.\n * \n * @sample samples.collections.Builders.Maps.buildMapSample\n
*/\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V> buildMap(capacity: Int, @BuilderInference builderAction: MutableMap<K, V>().->Unit):
Map<K, V> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
buildMapInternal(capacity,
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline
fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>().->Unit): Map<K, V>\n\n/**\n *
Calculate the initial capacity of a map.\n * \n * @PublishedApi\n * \n * internal expect fun mapCapacity(expectedSize: Int):
Int\n\n/**\n * Returns
`true` if this map is not empty.\n * \n * @sample samples.collections.Maps.Usage.mapIsNotEmpty\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.isNotEmpty(): Boolean =
!isEmpty()\n\n/**\n * Returns `true` if this nullable map is either null or empty.\n * \n * @sample
samples.collections.Maps.Usage.mapIsNullOrEmpty\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K,
V>?.isNullOrEmpty(): Boolean {\n contract {\n returns(false) implies (this@isNullOrEmpty != null)\n }\n\n
return this == null || isEmpty()\n}\n\n/**\n * Returns the [Map] if its not `null`, or the empty [Map] otherwise.\n
*/\n * \n * @sample samples.collections.Maps.Usage.mapOrElse\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun
<K, V> Map<K, V>?.orElse(): Map<K, V> = this ?: emptyMap()\n\n/**\n * Returns this map if it's not empty\n *
or the result of calling [defaultValue] function if the map is empty.\n * \n * @sample
samples.collections.Maps.Usage.mapIfEmpty\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <M, R> M.ifEmpty(defaultValue: () ->
R): R where M : Map<*, *>, M : R =\n if (isEmpty()) defaultValue() else this\n\n/**\n * Checks if the map
contains the given key.\n * \n * This method allows to use the `x in map` syntax for checking whether an object is
contained in the map.\n * \n * @sample samples.collections.Maps.Usage.containsKey\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <@kotlin.internal.OnlyInputTypes K, V> Map<out K,
V>.contains(key: K): Boolean = containsKey(key)\n\n/**\n * Returns the value corresponding to the given [key], or
`null` if such a key is not present in the map.\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline operator fun
<@kotlin.internal.OnlyInputTypes K, V> Map<out K, V>.get(key: K): V? =\n
@Suppress("UNCHECKED_CAST") (this as Map<K, V>).get(key)\n\n/**\n * Allows to use the index operator
for storing values in a mutable map.\n * \n * @kotlin.internal.InlineOnly\n * \n * public

```



```

inline operator fun <K, V> MutableMap<K, V>.set(key: K, value: V): Unit {
    put(key, value)
}

Returns `true` if the map contains the specified [key].
Allows to overcome type-safety restriction of `containsKey` that requires to pass a key of type `K`.
@kotlin.internal.InlineOnly
public inline fun
<@kotlin.internal.OnlyInputTypes K> Map<out K, *>.containsKey(key: K): Boolean =
    @Suppress("UNCHECKED_CAST") (this as Map<K, *>).containsKey(key)

Returns `true` if the map maps one or more keys to the specified [value].
Allows to overcome type-safety restriction of `containsValue` that requires to pass a value of type `V`.
@sample
samples.collections.Maps.Usage.containsValue
^
@Suppress("EXTENSION_SHADOWED_BY_MEMBER")
// false warning, extension takes precedence in some cases
@kotlin.internal.InlineOnly
public inline fun <K,
@kotlin.internal.OnlyInputTypes V> Map<K, V>.containsValue(value: V): Boolean
= this.containsValue(value)

Removes the specified key and its corresponding value from this map.
@return the previous value associated with the key, or `null` if the key was not present in the map.
Allows to overcome type-safety restriction of `remove` that requires to pass a key of type `K`.
^
@kotlin.internal.InlineOnly
public inline fun <@kotlin.internal.OnlyInputTypes K, V> MutableMap<out K,
V>.remove(key: K): V? =
    @Suppress("UNCHECKED_CAST") (this as MutableMap<K,
V>).remove(key)

Returns the key component of the map entry.
This method allows to use destructuring declarations when working with maps, for example:
```
for ((key, value) in map) {
 // do something with the key and the value
}
^
@kotlin.internal.InlineOnly
public inline operator fun <K,
V> Map.Entry<K, V>.component1(): K = key

Returns the value component of the map entry.
This method allows to use destructuring declarations when working with maps, for example:
```
for ((key, value) in map) {
    // do something with the key and the value
}
^
@kotlin.internal.InlineOnly
public inline operator fun <K, V>
Map.Entry<K, V>.component2(): V = value

Converts entry to [Pair] with key being first component and value being second.
^
@kotlin.internal.InlineOnly
public inline fun <K, V> Map.Entry<K, V>.toPair():
Pair<K, V> = Pair(key, value)

Returns the value for the given key, or the result of the [defaultValue] function if there was no entry for the given key.
@sample
samples.collections.Maps.Usage.getOrElse
^
@kotlin.internal.InlineOnly
public inline fun <K, V> Map<K, V>.getOrElse(key: K, defaultValue: () -> V): V
= get(key) ?: defaultValue()

internal inline fun <K, V> Map<K, V>.getOrElseNullable(key: K, defaultValue: ()
-> V): V {
    val value = get(key)
    if (value == null && !containsKey(key)) {
        return defaultValue()
    } else {
        @Suppress("UNCHECKED_CAST")
        return value as V
    }
}

Returns the value for the given [key] or throws an exception if there is no such key in the map.
If the map was created by [withDefault], resorts to its `defaultValue` provider function instead of throwing an exception.
@throws NoSuchElementException when the map doesn't contain a value for the specified key and no implicit default value was provided for that map.
^
@SinceKotlin("1.1")
public fun <K, V> Map<K, V>.getValue(key: K): V
= getOrDefault(key)

Returns the value for the given key. If the key is not found in the map, calls the [defaultValue] function, puts its result into the map under the given key and returns it.
Note that the operation is not guaranteed to be atomic if the map is being modified concurrently.
@sample
samples.collections.Maps.Usage.getOrPut
^
public inline fun <K, V> MutableMap<K, V>.getOrPut(key:
K, defaultValue: () -> V): V {
    val value = get(key)
    return if (value == null) {
        val answer =
defaultValue()
        put(key, answer)
        answer
    } else {
        value
    }
}

Returns an [Iterator] over the entries in the [Map].
@sample
samples.collections.Maps.Usage.forOverEntries
^
@kotlin.internal.InlineOnly
public inline operator fun <K, V> Map<out K, V>.iterator():
Iterator<Map.Entry<K, V>> = entries.iterator()

Returns a [MutableIterator] over the mutable entries in the [MutableMap].
^
@kotlin.jvm.JvmName("mutableIterator")
@kotlin.internal.InlineOnly
public inline operator fun <K, V> MutableMap<K, V>.iterator():
MutableIterator<MutableMap.MutableEntry<K, V>> =
entries.iterator()

Populates the given [destination] map with entries having the keys of this map and the values obtained by applying the [transform] function to each entry in this [Map].
^
public inline fun <K,

```

```

V, R, M : MutableMap<in K, in R>> Map<out K, V>.mapValuesTo(destination: M, transform: (Map.Entry<K, V>
-> R): M {\n  return entries.associateByTo(destination, { it.key }, transform)\n}\n\n/**\n * Populates the given
[destination] map with entries having the keys obtained\n * by applying the [transform] function to each entry in this
[Map] and the values of this map.\n *\n * In case if any two entries are mapped to the equal keys, the value of the
latter one will overwrite\n * the value associated with the former one.\n */\npublic inline fun <K, V, R, M :
MutableMap<in R, in V>> Map<out K, V>.mapKeysTo(destination: M, transform: (Map.Entry<K, V> -> R): M
{\n  return entries.associateByTo(destination, transform, { it.value })\n}\n\n/**\n * Puts all the given [pairs] into
this [MutableMap] with the first component in the pair being the key and the second the value.\n */\npublic fun <K,
V> MutableMap<in K, in V>.putAll(pairs: Array<out Pair<K, V>>): Unit {\n  for ((key, value) in
pairs) {\n    put(key, value)\n  }\n}\n\n/**\n * Puts all the elements of the given collection into this
[MutableMap] with the first component in the pair being the key and the second the value.\n */\npublic fun <K, V>
MutableMap<in K, in V>.putAll(pairs: Iterable<Pair<K, V>>): Unit {\n  for ((key, value) in pairs) {\n
put(key, value)\n  }\n}\n\n/**\n * Puts all the elements of the given sequence into this [MutableMap] with the first
component in the pair being the key and the second the value.\n */\npublic fun <K, V> MutableMap<in K, in
V>.putAll(pairs: Sequence<Pair<K, V>>): Unit {\n  for ((key, value) in pairs) {\n    put(key, value)\n
}\n}\n\n/**\n * Returns a new map with entries having the keys of this map and the values obtained by applying the
[transform]\n * function to each entry in this [Map].\n *\n * The returned map preserves the entry iteration order of
the original map.\n */\n * @sample samples.collections.Maps.Transformations.mapValues\n */\npublic
inline fun <K, V, R> Map<out K, V>.mapValues(transform: (Map.Entry<K, V>) -> R): Map<K, R> {\n  return
mapValuesTo(LinkedHashMap<K, R>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()\n}\n\n/**\n *
Returns a new Map with entries having the keys obtained by applying the [transform] function to each entry in this\n
* [Map] and the values of this map.\n *\n * In case if any two entries are mapped to the equal keys, the value of the
latter one will overwrite\n * the value associated with the former one.\n *\n * The returned map preserves the entry
iteration order of the original map.\n */\n * @sample samples.collections.Maps.Transformations.mapKeys\n
*/\npublic inline fun <K, V, R> Map<out K, V>.mapKeys(transform: (Map.Entry<K, V>) -> R): Map<R, V> {\n
return mapKeysTo(LinkedHashMap<R, V>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()\n}\n\n/**\n *
Returns a map containing all key-value pairs with keys matching the given [predicate].\n *\n * The returned map
preserves
the entry iteration order of the original map.\n */\n * @sample samples.collections.Maps.Filtering.filterKeys\n
*/\npublic inline fun <K, V> Map<out K, V>.filterKeys(predicate: (K) -> Boolean): Map<K, V> {\n  val result =
LinkedHashMap<K, V>()\n  for (entry in this) {\n    if (predicate(entry.key)) {\n      result.put(entry.key,
entry.value)\n    }\n  }\n  return result\n}\n\n/**\n * Returns a map containing all key-value pairs with values
matching the given [predicate].\n *\n * The returned map preserves the entry iteration order of the original map.\n
*/\n * @sample samples.collections.Maps.Filtering.filterValues\n */\npublic inline fun <K, V> Map<out K,
V>.filterValues(predicate: (V) -> Boolean): Map<K, V> {\n  val result = LinkedHashMap<K, V>()\n  for (entry
in this) {\n    if (predicate(entry.value)) {\n      result.put(entry.key, entry.value)\n    }\n  }\n  return
result\n}\n\n/**\n * Appends all entries matching the given [predicate] into
the mutable map given as [destination] parameter.\n *\n * @return the destination map.\n */\n * @sample
samples.collections.Maps.Filtering.filterTo\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> Map<out
K, V>.filterTo(destination: M, predicate: (Map.Entry<K, V>) -> Boolean): M {\n  for (element in this) {\n    if
(predicate(element)) {\n      destination.put(element.key, element.value)\n    }\n  }\n  return
destination\n}\n\n/**\n * Returns a new map containing all key-value pairs matching the given [predicate].\n *\n *
The returned map preserves the entry iteration order of the original map.\n */\n * @sample
samples.collections.Maps.Filtering.filter\n */\npublic inline fun <K, V> Map<out K, V>.filter(predicate:
(Map.Entry<K, V>) -> Boolean): Map<K, V> {\n  return filterTo(LinkedHashMap<K, V>(),
predicate)\n}\n\n/**\n * Appends all entries not matching the given [predicate] into the given [destination].\n *\n *
@return the destination map.\n */\n * @sample samples.collections.Maps.Filtering.filterNotTo\n

```

```

*^public inline fun <K, V, M : MutableMap<in K, in V>> Map<out K, V>.filterNotTo(destination: M, predicate:
(Map.Entry<K, V> -> Boolean): M {
    for (element in this)
        if (!predicate(element))
            destination.put(element.key, element.value)
    return destination
}

* Returns a new map
containing all key-value pairs not matching the given [predicate].
* The returned map preserves the entry
iteration order of the original map.
* @sample samples.collections.Maps.Filtering.filterNot

*^public inline fun
<K, V> Map<out K, V>.filterNot(predicate: (Map.Entry<K, V> -> Boolean): Map<K, V> {
    return
filterNotTo(LinkedHashMap<K, V>(), predicate)
}

* Returns a new map containing all key-value pairs
from the given collection of pairs.
* The returned map preserves the entry iteration order of the original
collection.
* If any of two pairs would have the same key the last
one gets added to the map.

*^public fun <K, V> Iterable<Pair<K, V>>.toMap(): Map<K, V> {
    if (this is
Collection)
        return when (size)
            0 -> emptyMap()
            1 -> mapOf(if (this is List) this[0] else
iterator().next())
            else -> toMap(LinkedHashMap<K, V>(mapCapacity(size)))
    }
    return
toMap(LinkedHashMap<K, V>()).optimizeReadOnlyMap()
}

* Populates and returns the [destination]
mutable map with key-value pairs from the given collection of pairs.

*^public fun <K, V, M : MutableMap<in K,
in V>> Iterable<Pair<K, V>>.toMap(destination: M): M =
    destination.apply { putAll(this@toMap) }

* Returns a new map containing all key-value pairs from the given array of pairs.
* The returned map preserves
the entry iteration order of the original array.
* If any of two pairs would have the same key the last one gets added
to the map.

*^public fun <K, V> Array<out Pair<K, V>>.toMap(): Map<K, V> =
    when (size) {
        0 -> emptyMap()
        1 -> mapOf(this[0])
        else -> toMap(LinkedHashMap<K,
V>(mapCapacity(size)))
    }

* Populates and returns the [destination] mutable map with key-value pairs
from the given array of pairs.

*^public fun <K, V, M : MutableMap<in K,
in V>> Array<out Pair<K,
V>>.toMap(destination: M): M =
    destination.apply { putAll(this@toMap) }

* Returns a new map
containing all key-value pairs from the given sequence of pairs.
* The returned map preserves the entry
iteration order of the original sequence.
* If any of two pairs would have the same key the last one gets added to
the map.

*^public fun <K, V> Sequence<Pair<K, V>>.toMap(): Map<K, V> =
toMap(LinkedHashMap<K,
V>()).optimizeReadOnlyMap()

* Populates and returns the [destination] mutable map with key-value pairs
from the given sequence of pairs.

*^public fun <K, V, M : MutableMap<in K,
in V>> Sequence<Pair<K,
V>>.toMap(destination: M): M =
    destination.apply
    { putAll(this@toMap) }

* Returns a new read-only map containing all key-value pairs from the original
map.
* The returned map preserves the entry iteration order of the original map.

*^@SinceKotlin("1.1")
public fun <K, V> Map<out K, V>.toMap(): Map<K, V> =
when (size) {
    0 ->
emptyMap()
    1 -> toSingletonMap()
    else -> toMutableMap()
}

* Returns a new mutable map
containing all key-value pairs from the original map.
* The returned map preserves the entry iteration order of
the original map.

*^@SinceKotlin("1.1")
public fun <K, V> Map<out K, V>.toMutableMap():
MutableMap<K, V> =
LinkedHashMap(this)

* Populates and returns the [destination] mutable map with
key-value pairs from the given map.

*^@SinceKotlin("1.1")
public fun <K, V, M : MutableMap<in K,
in V>>
Map<out K, V>.toMap(destination: M): M =
    destination.apply { putAll(this@toMap) }

* Creates a new
read-only map by replacing or adding an
entry to this map from a given key-value [pair].
* The returned map preserves the entry iteration order of the
original map.
* The [pair] is iterated in the end if it has a unique key.

*^public operator fun <K, V> Map<out
K, V>.plus(pair: Pair<K, V>): Map<K, V> =
    if (this.isEmpty()) mapOf(pair) else
LinkedHashMap(this).apply {
put(pair.first, pair.second) }

* Creates a new read-only map by replacing or adding entries to this map from
a given collection of key-value [pairs].
* The returned map preserves the entry iteration order of the original
map.
* Those [pairs] with unique keys are iterated in the end in the order of [pairs] collection.

*^public
operator fun <K, V> Map<out K, V>.plus(pairs: Iterable<Pair<K, V>>): Map<K, V> =
    if (this.isEmpty())
pairs.toMap() else
LinkedHashMap(this).apply { putAll(pairs) }

* Creates a new read-only map by
replacing or adding entries to this map from a given array of key-value [pairs].
* The

```

returned map preserves the entry iteration order of the original map.

- * Those [pairs] with unique keys are iterated in the end in the order of [pairs] array.

```

public operator fun <K, V> Map<out K, V>.plus(pairs: Array<out Pair<K, V>>): Map<K, V> =
    if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs) }

```

- * Creates a new read-only map by replacing or adding entries to this map from a given sequence of key-value [pairs].
- * The returned map preserves the entry iteration order of the original map.
- * Those [pairs] with unique keys are iterated in the end in the order of [pairs] sequence.

```

public operator fun <K, V> Map<out K, V>.plus(pairs: Sequence<Pair<K, V>>): Map<K, V> =
    LinkedHashMap(this).apply { putAll(pairs) }.optimizeReadOnlyMap()

```

- * Creates a new read-only map by replacing or adding entries to this map from another [map].
- * The returned map preserves the entry iteration order of the original map.
- * Those entries of another [map] that are missing in this map are iterated in the end in the order of that [map].

```

public operator fun <K, V> Map<out K, V>.plus(map: Map<out K, V>): Map<K, V> =
    LinkedHashMap(this).apply { putAll(map) }

```

- * Appends or replaces the given [pair] in this mutable map.

```

@kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pair: Pair<K, V>) {
    put(pair.first, pair.second)
}

```

- * Appends or replaces all pairs from the given collection of [pairs] in this mutable map.

```

@kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs: Iterable<Pair<K, V>>) {
    putAll(pairs)
}

```

- * Appends or replaces all pairs from the given array of [pairs] in this mutable map.

```

@kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs: Array<out Pair<K, V>>) {
    putAll(pairs)
}

```

- * Appends or replaces all pairs from the given sequence of [pairs] in this mutable map.

```

@kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs: Sequence<Pair<K, V>>) {
    putAll(pairs)
}

```

- * Appends or replaces all entries from the given [map] in this mutable map.

```

@kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(map: Map<K, V>) {
    putAll(map)
}

```

- * Returns a map containing all entries of the original map except the entry with the given [key].
- * The returned map preserves the entry iteration order of the original map.

```

@SinceKotlin("1.1") public operator fun <K, V> Map<out K, V>.minus(key: K): Map<K, V> =
    this.toMutableMap().apply { minusAssign(key) }.optimizeReadOnlyMap()

```

- * Returns a map containing all entries of the original map except those entries the keys of which are contained in the given [keys] collection.
- * The returned map preserves the entry iteration order of the original map.

```

@SinceKotlin("1.1") public operator fun <K, V> Map<out K, V>.minus(keys: Iterable<K>): Map<K, V> =
    this.toMutableMap().apply { minusAssign(keys) }.optimizeReadOnlyMap()

```

- * Returns a map containing all entries of the original map except those entries the keys of which are contained in the given [keys] array.
- * The returned map preserves the entry iteration order of the original map.

```

@SinceKotlin("1.1") public operator fun <K, V> Map<out K, V>.minus(keys: Array<out K>): Map<K, V> =
    this.toMutableMap().apply { minusAssign(keys) }.optimizeReadOnlyMap()

```

- * Returns a map containing all entries of the original map except those entries the keys of which are contained in the given [keys] sequence.
- * The returned map preserves the entry iteration order of the original map.

```

@SinceKotlin("1.1") public operator fun <K, V> Map<out K, V>.minus(keys: Sequence<K>): Map<K, V> =
    this.toMutableMap().apply { minusAssign(keys) }.optimizeReadOnlyMap()

```

- * Removes the entry with the given [key] from this mutable map.

```

@SinceKotlin("1.1") @kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<K, V>.minusAssign(key: K) {
    remove(key)
}

```

- * Removes all entries the keys of which are contained in the given [keys] collection from this mutable map.

```

@SinceKotlin("1.1") @kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Iterable<K>) {
    this.keys.removeAll(keys)
}

```

- * Removes all entries the keys of which are contained in the given [keys] array from this mutable map.

```

@SinceKotlin("1.1") @kotlin.internal.InlineOnly public inline operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Array<out K>) {
    this.keys.removeAll(keys)
}

```

- * Removes all entries from the

```

keys of which are contained in the given [keys] sequence from this mutable map.\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K,
V>.minusAssign(keys: Sequence<K>) {\n    this.keys.removeAll(keys)\n}\n\n// do not expose for now
@PublishedApi\ninternal fun <K, V> Map<K, V>.optimizeReadOnlyMap() = when (size) {\n    0 -> emptyMap()\n    1 -> toSingletonMapOrSelf()\n    else -> this\n}\n"/\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SetsKt")\n@file:OptIn(kotlin.experimenta
l.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\n\ninternal object
EmptySet : Set<Nothing>, Serializable {\n    private const val serialVersionUID: Long =
3406603774387020532\n\n    override fun equals(other: Any?): Boolean = other is Set<*> && other.isEmpty()\n
    override fun hashCode(): Int = 0\n    override fun toString(): String = "[]"\n\n    override val size: Int get() = 0\n
    override fun isEmpty(): Boolean = true\n    override fun contains(element: Nothing): Boolean = false\n    override
fun containsAll(elements: Collection<Nothing>): Boolean = elements.isEmpty()\n\n    override fun iterator():
Iterator<Nothing> = EmptyIterator\n\n    private fun readResolve(): Any = EmptySet\n}\n\n/**\n * Returns an
empty read-only set. The returned set is serializable (JVM).\n * @sample
samples.collections.Collections.Sets.emptyReadOnlySet\n */\npublic fun <T> emptySet(): Set<T> =
EmptySet\n\n/**\n * Returns a new read-only set with the given elements.\n * Elements of the set are iterated in the
order they were specified.\n * The returned set is serializable (JVM).\n * @sample
samples.collections.Collections.Sets.readOnlySet\n */\npublic fun <T> setOf(vararg elements: T): Set<T> = if
(elements.size > 0) elements.toSet() else emptySet()\n\n/**\n * Returns an empty read-only set. The returned set is serializable (JVM).\n * @sample
samples.collections.Collections.Sets.emptyReadOnlySet\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T>
setOf(): Set<T> = emptySet()\n\n/**\n * Returns an empty new [MutableSet].\n * The returned set preserves the
element iteration order.\n * @sample samples.collections.Collections.Sets.emptyMutableSet\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> mutableSetOf(): MutableSet<T> =
LinkedHashSet()\n\n/**\n * Returns a new [MutableSet] with the given elements.\n * Elements of the set are
iterated in the order they were specified.\n * @sample samples.collections.Collections.Sets.mutableSet\n */\npublic
fun <T> mutableSetOf(vararg elements: T): MutableSet<T> =
elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))\n\n/**\n * Returns an empty new [HashSet].
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> hashSetOf(): HashSet<T>
= HashSet()\n\n/**\n * Returns a new [HashSet] with the given elements. */\npublic fun <T> hashSetOf(vararg
elements: T): HashSet<T> = elements.toCollection(HashSet(mapCapacity(elements.size)))\n\n/**\n * Returns an
empty new [LinkedHashSet].\n * @sample samples.collections.Collections.Sets.emptyLinkedHashSet\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> linkedSetOf(): LinkedHashSet<T>
= LinkedHashSet()\n\n/**\n * Returns a new [LinkedHashSet] with the given elements.\n * Elements of the set are
iterated in the order they were specified.\n * @sample samples.collections.Collections.Sets.linkedHashSet\n
*/\npublic fun <T> linkedSetOf(vararg elements: T): LinkedHashSet<T> =
elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))\n\n/**\n * Returns a new read-only set either
with single given element, if it is not null, or empty set if the element is null.\n * The returned set is serializable
(JVM).\n * @sample samples.collections.Collections.Sets.setOfNotNull\n
*/\n@SinceKotlin("1.4")\npublic fun <T : Any> setOfNotNull(element: T?): Set<T> = if (element != null)
setOf(element) else emptySet()\n\n/**\n * Returns a new read-only set only with those given elements, that are not
null.\n * Elements of the set are iterated in the order they were specified.\n * The returned set is serializable
(JVM).\n * @sample samples.collections.Collections.Sets.setOfNotNull\n */\n@SinceKotlin("1.4")\npublic fun <T
: Any> setOfNotNull(vararg elements: T?): Set<T> {\n    return
elements.filterNotNullTo(LinkedHashSet())\n}\n\n/**\n * Builds a new read-only [Set] by populating a
[MutableSet] using the given [builderAction]\n * and returning a read-only set with the same elements.\n * The

```

set passed as a receiver to the [builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified behavior.\n *\n * Elements of the set are iterated in the order they were added by the [builderAction].\n *\n * The returned set is serializable (JVM).\n *\n * @sample samples.collections.Builders.Sets.buildSetSample\n *\n @SinceKotlin("1.6")\n @WasExperimental(ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun <E> buildSet(@BuilderInference builderAction: MutableSet<E>().-> Unit): Set<E> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return buildSetInternal(builderAction)\n }\n\n @PublishedApi\n @SinceKotlin("1.3")\n @kotlin.internal.InlineOnly\n internal expect inline fun <E> buildSetInternal(builderAction: MutableSet<E>().-> Unit): Set<E>\n\n /**\n * Builds a new read-only [Set] by populating a [MutableSet] using the given [builderAction]\n * and returning a read-only set with the same elements.\n *\n * The set passed as a receiver to the [builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified behavior.\n *\n * [capacity] is used to hint the expected number of elements added in the [builderAction].\n *\n * Elements of the set are iterated in the order they were added by the [builderAction].\n *\n * The returned set is serializable (JVM).\n *\n * @throws IllegalArgumentException if the given [capacity] is negative.\n *\n * @sample samples.collections.Builders.Sets.buildSetSample\n *\n @SinceKotlin("1.6")\n @WasExperimental(ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun <E> buildSet(capacity: Int, @BuilderInference builderAction: MutableSet<E>().-> Unit): Set<E> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return buildSetInternal(capacity, builderAction)\n }\n\n @PublishedApi\n @SinceKotlin("1.3")\n @kotlin.internal.InlineOnly\n internal expect inline fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>().-> Unit): Set<E>\n\n\n /**\n * Returns this Set if it's not `null` and the empty set otherwise. *\n @kotlin.internal.InlineOnly\n public inline fun <T> Set<T>?.orEmpty(): Set<T> = this\n\n\n ?: emptySet()\n\n\n internal fun <T> Set<T>.optimizeReadOnlySet() = when (size) {\n 0 -> emptySet()\n 1 -> setOf(iterator().next())\n else -> this\n }\n\n\n ", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n\n *\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("StringsKt")\n @file:Suppress("PLATFORM_CLASS_MAPPED_TO_KOTLIN")\n\n\n package kotlin.text\n\n\n /**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n\n\n *\n @SinceKotlin("1.1")\n\n\n public fun String.toByteArrayOrNull(): Byte? = toByteOrNull(radix = 10)\n\n\n /**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n\n *\n @SinceKotlin("1.1")\n\n\n public fun String.toByteArrayOrNull(radix: Int): Byte? {\n val int = this.toIntOrNull(radix)?: return null\n if (int < Byte.MIN_VALUE || int > Byte.MAX_VALUE) return null\n return int.toByteArray()\n }\n\n\n /**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n @SinceKotlin("1.1")\n\n\n public fun String.toShortOrNull(): Short? = toShortOrNull(radix = 10)\n\n\n /**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n\n *\n @SinceKotlin("1.1")\n\n\n public fun String.toShortOrNull(radix: Int): Short? {\n val int = this.toIntOrNull(radix)?: return null\n if (int < Short.MIN_VALUE || int > Short.MAX_VALUE) return null\n return int.toShort()\n }\n\n\n /**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n\n\n *\n @SinceKotlin("1.1")\n\n\n public fun String.toIntOrNull(): Int? = toIntOrNull(radix = 10)\n\n\n /**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n\n\n *\n @SinceKotlin("1.1")\n\n\n public fun String.toIntOrNull(radix: Int): Int? {\n checkRadix(radix)\n\n val length = this.length\n if (length == 0) return null\n\n val start: Int\n val isNegative: Boolean\n val limit:

```

Int\n\n val firstChar = this[0]\n if (firstChar < '0') { // Possible leading sign\n     if (length == 1) return null //
non-digit (possible sign) only, no digits after\n\n     start = 1\n\n     if (firstChar == '-') {\n         isNegative =
true\n         limit = Int.MIN_VALUE\n     } else if (firstChar == '+') {\n         isNegative = false\n         limit = -Int.MAX_VALUE\n     } else\n
return null\n } else {\n     start = 0\n     isNegative = false\n     limit = -Int.MAX_VALUE\n }\n\n val
limitForMaxRadix = (-Int.MAX_VALUE) / 36\n\n var limitBeforeMul = limitForMaxRadix\n var result = 0\n
for (i in start until length) {\n     val digit = digitOf(this[i], radix)\n\n     if (digit < 0) return null\n     if (result <
limitBeforeMul) {\n         if (limitBeforeMul == limitForMaxRadix) {\n             limitBeforeMul = limit /
radix\n\n             if (result < limitBeforeMul) {\n                 return null\n             }\n         } else {\n
return null\n         }\n     }\n\n     result *= radix\n\n     if (result < limit + digit) return null\n\n     result -=
digit\n }\n\n return if (isNegative) result else -result\n}\n\n**\n * Parses
the string as a [Long] number and returns the result\n * or `null` if the string is not a valid representation of a
number.\n *^\n@SinceKotlin("1.1")\npublic fun String.toLongOrNull(): Long? = toLongOrNull(radix =
10)\n\n**\n * Parses the string as a [Long] number and returns the result\n * or `null` if the string is not a valid
representation of a number.\n *^\n * @throws IllegalArgumentException when [radix] is not a valid radix for string
to number conversion.\n *^\n@SinceKotlin("1.1")\npublic fun String.toLongOrNull(radix: Int): Long? {\n
checkRadix(radix)\n\n val length = this.length\n if (length == 0) return null\n\n val start: Int\n val isNegative:
Boolean\n val limit: Long\n\n val firstChar = this[0]\n if (firstChar < '0') { // Possible leading sign\n     if
(length == 1) return null // non-digit (possible sign) only, no digits after\n\n     start = 1\n\n     if (firstChar == '-')
{\n         isNegative = true\n         limit = Long.MIN_VALUE\n     } else if (firstChar == '+') {\n         isNegative = false\n
         limit = -Long.MAX_VALUE\n     } else\n
return null\n } else {\n     start = 0\n     isNegative = false\n     limit = -Long.MAX_VALUE\n }\n\n val
limitForMaxRadix = (-Long.MAX_VALUE) / 36\n\n var limitBeforeMul = limitForMaxRadix\n var result =
0L\n for (i in start until length) {\n     val digit = digitOf(this[i], radix)\n\n     if (digit < 0) return null\n     if
(result < limitBeforeMul) {\n         if (limitBeforeMul == limitForMaxRadix) {\n             limitBeforeMul = limit
/ radix\n\n             if (result < limitBeforeMul) {\n                 return null\n             }\n         } else {\n
return null\n         }\n     }\n\n     result *= radix\n\n     if (result < limit + digit) return null\n\n     result -=
digit\n }\n\n return if (isNegative) result else -result\n}\n\n\ninternal
fun numberFormatError(input: String): Nothing = throw NumberFormatException("Invalid number format:
'$input')\n\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n@package kotlin.time\n\nimport kotlin.contracts.*\nimport kotlin.jvm.JvmInline\nimport kotlin.math.*\n\n**\n * Represents the amount of time one instant of time is away from another instant.\n *^\n * A negative duration is
possible in a situation when the second instant is earlier than the first one.\n *^\n * The type can store duration values
up to \u00b1146 years with nanosecond precision,\n * and up to \u00b1146 million years with millisecond
precision.\n *^\n * If a duration-returning operation provided in `kotlin.time` produces a duration value that doesn't fit
into the above range,\n * the returned `Duration` is infinite.\n *^\n * An infinite duration value
[Duration.INFINITE] can be used to represent infinite timeouts.\n *^\n * To construct a duration use either the
extension function [toDuration],\n * or the extension properties [hours], [minutes], [seconds], and so on,\n *
available on [Int], [Long], and [Double] numeric types.\n *^\n * To get the value of this duration expressed in a
particular [duration units][DurationUnit]\n * use the functions [toInt], [toLong], and [toDouble]\n * or the properties
[inWholeHours], [inWholeMinutes], [inWholeSeconds], [inWholeNanoseconds], and so on.\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\n@JvmInline\npublic value class
Duration internal constructor(private val rawValue: Long) : Comparable<Duration> {\n\n     private val value: Long
get() = rawValue shr 1\n     private inline val unitDiscriminator: Int get() = rawValue.toInt() and 1\n     private fun
isInNanos() = unitDiscriminator == 0\n     private fun isInMillis() = unitDiscriminator == 1\n     private val
storageUnit get()

```

```

= if (isInNanos()) DurationUnit.NANOSECONDS else DurationUnit.MILLISECONDS\n\n init {\n    if
(durationAssertionsEnabled) {\n        if (isInNanos()) {\n            if (value !in -MAX_NANOS..MAX_NANOS)
throw AssertionError("\$value ns is out of nanoseconds range")\n        } else {\n            if (value !in -
MAX_MILLIS..MAX_MILLIS) throw AssertionError("\$value ms is out of milliseconds range")\n        } if
(value in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) throw AssertionError("\$value ms is
denormalized")\n    }\n }\n }\n\n companion object {\n    /** The duration equal to exactly 0
seconds. */\n    public val ZERO: Duration = Duration(0L)\n\n    /** The duration whose value is positive
infinity. It is useful for representing timeouts that should never expire. */\n    public val INFINITE: Duration =
durationOfMillis(MAX_MILLIS)\n\n    internal val NEG_INFINITE: Duration = durationOfMillis(-
MAX_MILLIS)\n\n\n    /** Converts the given time duration [value] expressed in the specified [sourceUnit] into the specified
[targetUnit]. */\n    @ExperimentalTime\n    public fun convert(value: Double, sourceUnit: DurationUnit,
targetUnit: DurationUnit): Double =\n        convertDurationUnit(value, sourceUnit, targetUnit)\n\n    //
Duration construction extension properties in Duration companion scope\n\n    /** Returns a [Duration] equal to
this [Int] number of nanoseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.nanoseconds get()
= toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a [Duration] equal to this [Long] number of
nanoseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n    /**\n     * Returns a [Duration] equal to this [Double]
number of nanoseconds.\n     *\n     * Depending on its magnitude, the value is rounded to an integer
number of nanoseconds or milliseconds.\n     *\n     * @throws IllegalArgumentException if this [Double]
value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public inline val Double.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a [Duration] equal to this [Int] number of
microseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n    /** Returns a [Duration] equal to this [Long] number of
microseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n    /**\n     * Returns a [Duration] equal to this [Double]
number of microseconds.\n     *\n     * Depending on its magnitude, the value is rounded to an integer number
of nanoseconds or milliseconds.\n     *\n     * @throws IllegalArgumentException if this [Double] value
is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public inline val Double.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n    /** Returns a [Duration] equal to this [Int] number of
milliseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n    /** Returns a [Duration] equal to this [Long] number of
milliseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n    /**\n     * Returns a [Duration] equal to this [Double]
number of milliseconds.\n     *\n     * Depending on its magnitude, the value is rounded to an integer number of
nanoseconds or milliseconds.\n     *\n     * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n     */\n    @kotlin.internal.InlineOnly\n    public inline val Double.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n\n    /** Returns a [Duration] equal to this [Int] number of seconds. */\n    @kotlin.internal.InlineOnly\n
public inline val Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n    /** Returns a [Duration] equal to
this [Long] number of seconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n    /**\n     * Returns a [Duration] equal to this [Double] number of
seconds.\n     *\n     * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or
milliseconds.\n     *\n     * @throws IllegalArgumentException if this [Double] value is `NaN`.\n     */\n    @kotlin.internal.InlineOnly\n
public inline val Double.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n\n    /** Returns a [Duration] equal to this [Int] number of minutes. */\n    @kotlin.internal.InlineOnly\n
public inline

```



```

val Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n    /** Returns a [Duration] equal to this [Long]
number of minutes. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.minutes get() =
toDuration(DurationUnit.MINUTES)\n\n    /**\n    * Returns a [Duration] equal to this [Double] number of
minutes.\n    *\n    * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or
milliseconds.\n    *\n    * @throws IllegalArgumentException if this [Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.minutes get() =
toDuration(DurationUnit.MINUTES)\n\n\n    /** Returns a [Duration] equal to this [Int] number of hours. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.hours get() = toDuration(DurationUnit.HOURS)\n\n\n    /**
Returns a [Duration] equal to this [Long] number of hours. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.hours get() = toDuration(DurationUnit.HOURS)\n\n\n    /**\n    * Returns a
[Duration] equal to this [Double] number of hours.\n    *\n    * Depending on its magnitude, the value is
rounded to an integer number of nanoseconds or milliseconds.\n    *\n    * @throws IllegalArgumentException
if this [Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.hours
get() = toDuration(DurationUnit.HOURS)\n\n\n    /** Returns a [Duration] equal to this [Int] number of days. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.days get() = toDuration(DurationUnit.DAYS)\n\n\n    /**
Returns a [Duration] equal to this [Long] number of days. */\n    @kotlin.internal.InlineOnly\n    public inline
val Long.days get() = toDuration(DurationUnit.DAYS)\n\n\n    /**\n    * Returns a [Duration] equal to this
[Double] number of days.\n    *\n    * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or milliseconds.\n    *\n    * @throws IllegalArgumentException if this [Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.days get() = toDuration(DurationUnit.DAYS)\n\n\n\n    // deprecated static factory functions\n    /** Returns a [Duration] representing the specified [value] number of
nanoseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use
'Int.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("value.nanoseconds",
"\"kotlin.time.Duration.Companion.nanoseconds\""))\n    @DeprecatedSinceKotlin(warningSince = "1.6")\n    public fun nanoseconds(value: Int): Duration = value.toDuration(DurationUnit.NANOSECONDS)\n\n\n    /**
Returns a [Duration] representing the specified [value] number of nanoseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Long.nanoseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6")\n    public fun nanoseconds(value: Long): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n\n    /**\n    * Returns a [Duration] representing the
specified [value] number of nanoseconds.\n    *\n    * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n    */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Double.nanoseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6")\n    public fun nanoseconds(value: Double): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n\n\n    Returns a [Duration] representing the specified [value] number of microseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Int.microseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6")\n    public fun microseconds(value: Int): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n\n    /** Returns a [Duration] representing the specified
[value] number of microseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Long.microseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6")\n    public fun microseconds(value: Long): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n\n    /**\n

```

```

    * Returns a [Duration] representing the specified [value] number of microseconds.\n
    * @throws\n
    IllegalArgumentException if the provided `Double` [value] is `NaN`.\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Double.microseconds' extension property from\n
    Duration.Companion instead.", ReplaceWith("value.microseconds",\n
    "kotlin.time.Duration.Companion.microseconds"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public fun microseconds(value: Double): Duration = value.toDuration(DurationUnit.MICROSECONDS)\n
    /** Returns a [Duration] representing the specified [value] number of milliseconds. *\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Int.milliseconds' extension property\n
    from Duration.Companion instead.", ReplaceWith("value.milliseconds",\n
    "kotlin.time.Duration.Companion.milliseconds"))\n
    @DeprecatedSinceKotlin(warningSince\n
    = "1.6")\n
    public fun milliseconds(value: Int): Duration =\n
    value.toDuration(DurationUnit.MILLISECONDS)\n
    /** Returns a [Duration] representing the specified\n
    [value] number of milliseconds. *\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Long.milliseconds' extension property from Duration.Companion instead.",\n
    ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public fun milliseconds(value: Long): Duration =\n
    value.toDuration(DurationUnit.MILLISECONDS)\n
    /**\n
    * Returns a [Duration] representing the\n
    specified [value] number of milliseconds.\n
    * @throws IllegalArgumentException if the provided\n
    `Double` [value] is `NaN`.\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Double.milliseconds' extension property from Duration.Companion instead.",\n
    ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public fun milliseconds(value: Double): Duration =\n
    value.toDuration(DurationUnit.MILLISECONDS)\n
    /** Returns a [Duration] representing the specified\n
    [value] number of seconds. *\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use\n
    'Int.seconds' extension property from Duration.Companion instead.", ReplaceWith("value.seconds",\n
    "kotlin.time.Duration.Companion.seconds"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public\n
    fun seconds(value: Int): Duration = value.toDuration(DurationUnit.SECONDS)\n
    /** Returns a [Duration]\n
    representing the specified [value] number of seconds. *\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Long.seconds' extension property from Duration.Companion instead.",\n
    ReplaceWith("value.seconds", "kotlin.time.Duration.Companion.seconds"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public fun seconds(value: Long): Duration =\n
    value.toDuration(DurationUnit.SECONDS)\n
    /**\n
    * Returns a [Duration] representing the specified\n
    [value] number of seconds.\n
    * @throws IllegalArgumentException if the provided `Double` [value] is\n
    `NaN`.\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use\n
    'Double.seconds' extension property from Duration.Companion instead.", ReplaceWith("value.seconds",\n
    "kotlin.time.Duration.Companion.seconds"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public\n
    fun seconds(value: Double): Duration = value.toDuration(DurationUnit.SECONDS)\n
    /** Returns a\n
    [Duration] representing the specified [value] number of minutes. *\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Int.minutes' extension property\n
    from Duration.Companion instead.", ReplaceWith("value.minutes",\n
    "kotlin.time.Duration.Companion.minutes"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public\n
    fun minutes(value: Int): Duration = value.toDuration(DurationUnit.MINUTES)\n
    /** Returns a [Duration]\n
    representing the specified [value] number of minutes. *\n
    * @SinceKotlin("1.5")\n
    @ExperimentalTime\n
    @Deprecated("Use 'Long.minutes' extension property from Duration.Companion instead.",\n
    ReplaceWith("value.minutes", "kotlin.time.Duration.Companion.minutes"))\n
    @DeprecatedSinceKotlin(warningSince = "1.6")\n
    public fun minutes(value: Long): Duration =\n
    value.toDuration(DurationUnit.MINUTES)\n
    /**\n
    * Returns a [Duration] representing the specified\n
    [value] number of minutes.\n
    * @throws IllegalArgumentException if the provided `Double` [value] is
  
```

```

`NaN`.n    */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
    @Deprecated("Use 'Double.minutes' extension property from Duration.Companion instead.",
ReplaceWith("value.minutes", "kotlin.time.Duration.Companion.minutes"))n
@DeprecatedSinceKotlin(warningSince = "1.6")n    public fun minutes(value: Double): Duration =
value.toDuration(DurationUnit.MINUTES)n\n\n    /** Returns a [Duration] representing the specified [value]
number of hours. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n    @Deprecated("Use 'Int.hours'
extension property from Duration.Companion instead.", ReplaceWith("value.hours",
"kotlin.time.Duration.Companion.hours"))n    @DeprecatedSinceKotlin(warningSince = "1.6")n    public
fun hours(value: Int): Duration = value.toDuration(DurationUnit.HOURS)n\n\n    /** Returns a [Duration]
representing the specified [value] number of hours. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Long.hours' extension property from
Duration.Companion instead.", ReplaceWith("value.hours", "kotlin.time.Duration.Companion.hours"))n
@DeprecatedSinceKotlin(warningSince = "1.6")n    public fun hours(value: Long): Duration =
value.toDuration(DurationUnit.HOURS)n\n\n    /**n    * Returns a [Duration] representing the specified
[value] number of hours.n    *n    * @throws IllegalArgumentException if the provided `Double` [value] is
`NaN`.n    */n    @SinceKotlin("1.5")n    @ExperimentalTime\n    @Deprecated("Use 'Double.hours'
extension property from Duration.Companion instead.", ReplaceWith("value.hours",
"kotlin.time.Duration.Companion.hours"))n    @DeprecatedSinceKotlin(warningSince = "1.6")n    public
fun hours(value: Double): Duration = value.toDuration(DurationUnit.HOURS)n\n\n    /** Returns a [Duration]
representing the specified [value] number of days. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use
'Int.days' extension property from Duration.Companion instead.", ReplaceWith("value.days",
"kotlin.time.Duration.Companion.days"))n    @DeprecatedSinceKotlin(warningSince = "1.6")n    public
fun days(value: Int): Duration = value.toDuration(DurationUnit.DAYS)n\n\n    /** Returns a [Duration]
representing the specified [value] number of days. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Long.days' extension property from Duration.Companion instead.",
ReplaceWith("value.days", "kotlin.time.Duration.Companion.days"))n
@DeprecatedSinceKotlin(warningSince = "1.6")n    public fun days(value: Long): Duration =
value.toDuration(DurationUnit.DAYS)n\n\n    /**n    * Returns a [Duration] representing the specified [value]
number of days.n    *n    * @throws IllegalArgumentException if the provided `Double` [value] is `NaN`.n
*/n    @SinceKotlin("1.5")n    @ExperimentalTime\n
    @Deprecated("Use 'Double.days' extension property from Duration.Companion instead.",
ReplaceWith("value.days", "kotlin.time.Duration.Companion.days"))n
@DeprecatedSinceKotlin(warningSince = "1.6")n    public fun days(value: Double): Duration =
value.toDuration(DurationUnit.DAYS)n\n\n    /**n    * Parses a string that represents a duration and returns the
parsed [Duration] value.n    *n    * The following formats are accepted:n    *n    * - ISO-8601
Duration format, e.g. `P1DT2H3M4.058S`, see [toIsoString] and [parseIsoString].n    * - The format of string
returned by the default [Duration.toString] and `toString` in a specific unit,n    * e.g. `10s`, `1h 30m` or
`-(1h 30m)`.n    *n    * @throws IllegalArgumentException if the string doesn't represent a duration in any of the
supported formats.n    * @sample samples.time.Durations.parse\n    */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
    @Deprecated("Use 'Double.days' extension property from Duration.Companion instead.",
ReplaceWith("value.days", "kotlin.time.Duration.Companion.days"))n
@DeprecatedSinceKotlin(warningSince = "1.6")n    public fun parse(value:
String): Duration = try {\n        parseDuration(value, strictIso = false)\n    } catch (e:
IllegalArgumentException) {\n        throw IllegalArgumentException("Invalid duration string format: '$value'.",
e)\n    }\n\n    /**n    * Parses a string that represents a duration in ISO-8601 format and returns the parsed
[Duration] value.n    *n    * @throws IllegalArgumentException if the string doesn't represent a duration in
ISO-8601 format.n    * @sample samples.time.Durations.parseIsoString\n    */n    @SinceKotlin("1.5")n
@ExperimentalTime\n    public fun
parseIsoString(value: String): Duration = try {\n        parseDuration(value, strictIso = true)\n    } catch (e:
IllegalArgumentException) {\n        throw IllegalArgumentException("Invalid ISO duration string format:
'$value'.", e)\n    }\n\n    /**n    * Parses a string that represents a duration and returns the parsed [Duration]

```



```

{\n      if (result / scale == value) {\n          durationOfMillis(result.coerceIn(-
MAX_MILLIS..MAX_MILLIS))\n      } else {\n          if (value.sign * scale.sign > 0) INFINITE else
NEG_INFINITE\n      }\n  }\n  }\n  }\n  /**\n   * Returns a duration whose value is this duration value
multiplied by the given [scale] number.\n   * \n   * The operation may involve rounding when the result cannot be
represented exactly with a [Double] number.\n   * \n   * @throws IllegalArgumentException if the operation
results in an undefined value for the given arguments,\n   * e.g. when
multiplying an infinite duration by zero.\n   */\n  public operator fun times(scale: Double): Duration {\n      val
intScale = scale.roundToInt()\n      if (intScale.toDouble() == scale) {\n          return times(intScale)\n      }\n      val
unit = storageUnit\n      val result = toDouble(unit) * scale\n      return result.toDuration(unit)\n  }\n  }\n  /**\n   * Returns a duration whose value is this duration value divided by the given [scale] number.\n   * \n   *
@throws IllegalArgumentException if the operation results in an undefined value for the given arguments,\n   *
e.g. when dividing zero duration by zero.\n   */\n  public operator fun div(scale: Int): Duration {\n      if (scale ==
0) {\n          return when {\n              isPositive() -> INFINITE\n              isNegative() -> NEG_INFINITE\n              else -> throw IllegalArgumentException("Dividing zero duration by zero yields an undefined result.")\n          }\n      }\n      if (isInNanos()) {\n          return durationOfNanos(value / scale)\n      } else {\n          if (isInfinite())\n              return this * scale.sign\n          val result = value / scale\n          if (result in -
MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n              val rem = millisToNanos(value - (result *
scale)) / scale\n              return durationOfNanos(millisToNanos(result) + rem)\n          }\n          return
durationOfMillis(result)\n      }\n  }\n  }\n  /**\n   * Returns a duration whose value is this duration value divided
by the given [scale] number.\n   * \n   * @throws IllegalArgumentException if the operation results in an
undefined value for the given arguments,\n   * e.g. when dividing an infinite duration by infinity or zero duration
by zero.\n   */\n  public operator fun div(scale: Double): Duration {\n      val intScale = scale.roundToInt()\n      if
(intScale.toDouble() == scale && intScale != 0) {\n          return div(intScale)\n      }\n      val unit = storageUnit\n      val result = toDouble(unit) / scale\n      return result.toDuration(unit)\n  }\n  }\n  /** Returns a number that is the ratio of this and [other] duration values.
*/\n  public operator fun div(other: Duration): Double {\n      val coarserUnit = maxOf(this.storageUnit,
other.storageUnit)\n      return this.toDouble(coarserUnit) / other.toDouble(coarserUnit)\n  }\n  }\n  /** Returns
true, if the duration value is less than zero. */\n  public fun isNegative(): Boolean = rawValue < 0\n  /** Returns
true, if the duration value is greater than zero. */\n  public fun isPositive(): Boolean = rawValue > 0\n  /**
Returns true, if the duration value is infinite. */\n  public fun isInfinite(): Boolean = rawValue ==
INFINITE.rawValue || rawValue == NEG_INFINITE.rawValue\n  /** Returns true, if the duration value is finite.
*/\n  public fun isFinite(): Boolean = !isInfinite()\n  }\n  }\n  Returns the absolute value of this value. The returned value is always non-negative. */\n  public val absoluteValue:
Duration get() = if (isNegative()) -this else this\n  override fun compareTo(other: Duration): Int {\n      val
compareBits = this.rawValue xor other.rawValue\n      if (compareBits < 0 || compareBits.toInt() and 1 == 0) //
different signs or same sign/same range\n          return this.rawValue.compareTo(other.rawValue)\n      // same
sign/different ranges\n      val r = this.unitDiscriminator - other.unitDiscriminator // compare ranges\n      return if
(isNegative()) -r else r\n  }\n  }\n  /**\n   * Splits this duration into days, hours,
minutes, seconds, and nanoseconds and executes the given [action] with these components.\n   * The result of
[action] is returned as the result of this function.\n   * \n   * - `nanoseconds` represents the whole number of
nanoseconds in this duration, and its absolute value
is less than 1_000_000_000;\n   * - `seconds` represents the whole number of seconds in this duration, and its
absolute value is less than 60;\n   * - `minutes` represents the whole number of minutes in this duration, and its
absolute value is less than 60;\n   * - `hours` represents the whole number of hours in this duration, and its absolute
value is less than 24;\n   * - `days` represents the whole number of days in this duration.\n   * \n   * Infinite
durations are represented as either [Long.MAX_VALUE] days, or [Long.MIN_VALUE] days (depending on the
sign of infinity),\n   * and zeroes in the lower components.\n   */\n  public inline fun <T> toComponents(action:

```

```

(days: Long, hours: Int, minutes: Int, seconds: Int, nanoseconds: Int) -> T): T {
  contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }
  return action(inWholeDays, hoursComponent, minutesComponent,
secondsComponent, nanosecondsComponent)
}

/**
 * Splits this duration into hours, minutes, seconds, and nanoseconds and executes the given [action] with these components.
 * The result of [action] is returned as the result of this function.
 * - `nanoseconds` represents the whole number of nanoseconds in this duration, and its absolute value is less than 1_000_000_000;
 * - `seconds` represents the whole number of seconds in this duration, and its absolute value is less than 60;
 * - `minutes` represents the whole number of minutes in this duration, and its absolute value is less than 60;
 * - `hours` represents the whole number of hours in this duration.
 * Infinite durations are represented as either [Long.MAX_VALUE] hours, or [Long.MIN_VALUE] hours (depending on the sign of infinity),
 * and zeroes in the lower components.
 */
public inline fun <T> toComponents(action: (hours: Long, minutes: Int, seconds: Int, nanoseconds: Int) -> T): T {
  contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }
  return action(inWholeHours, minutesComponent, secondsComponent, nanosecondsComponent)
}

/**
 * Splits this duration into minutes, seconds, and nanoseconds and executes the given [action] with these components.
 * The result of [action] is returned as the result of this function.
 * - `nanoseconds` represents the whole number of nanoseconds in this duration, and its absolute value is less than 1_000_000_000;
 * - `seconds` represents the whole number of seconds in this duration, and its absolute value is less than 60;
 * - `minutes` represents the whole number of minutes in this duration.
 * Infinite durations are represented as either [Long.MAX_VALUE] minutes, or [Long.MIN_VALUE] minutes (depending on the sign of infinity),
 * and zeroes in the lower components.
 */
public inline fun <T> toComponents(action: (minutes: Long, seconds: Int, nanoseconds: Int) -> T): T {
  contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }
  return action(inWholeMinutes, secondsComponent, nanosecondsComponent)
}

/**
 * Splits this duration into seconds, and nanoseconds and executes the given [action] with these components.
 * The result of [action] is returned as the result of this function.
 * - `nanoseconds` represents the whole number of nanoseconds in this duration, and its absolute value is less than 1_000_000_000;
 * - `seconds` represents the whole number of seconds in this duration, and its absolute value is less than 60.
 * Infinite durations are represented as either [Long.MAX_VALUE] seconds, or [Long.MIN_VALUE] seconds (depending on the sign of infinity),
 * and zero nanoseconds.
 */
public inline fun <T> toComponents(action: (seconds: Long, nanoseconds: Int) -> T): T {
  contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }
  return action(inWholeSeconds, nanosecondsComponent)
}

}

@PublishedApi
internal val hoursComponent: Int
  get() = if (isInfinite()) 0 else (inWholeHours % 24).toInt()

@PublishedApi
internal val minutesComponent: Int
  get() = if (isInfinite()) 0 else (inWholeMinutes % 60).toInt()

@PublishedApi
internal val secondsComponent: Int
  get() = if (isInfinite()) 0 else (inWholeSeconds % 60).toInt()

@PublishedApi
internal val nanosecondsComponent: Int
  get() = when {
    isInfinite() -> 0
    isInMillis() -> millisToNanos(value % 1_000).toInt()
    else -> (value % 1_000_000_000).toInt()
  }

// conversion to units
/**
 * Returns the value of this duration expressed as a [Double] number of the specified [unit].
 * The operation may involve rounding when the result cannot be represented exactly with a [Double] number.
 * An infinite duration value is converted either to [Double.POSITIVE_INFINITY] or [Double.NEGATIVE_INFINITY] depending on its sign.
 */
public fun toDouble(unit: DurationUnit): Double {
  return when (rawValue) {
    INFINITE.rawValue -> Double.POSITIVE_INFINITY
    NEG_INFINITE.rawValue -> Double.NEGATIVE_INFINITY
    else -> {
      // TODO: whether it's ok to convert to Double before scaling
      convertDurationUnit(value.toDouble(), storageUnit, unit)
    }
  }
}

/**
 * Returns the value of this duration expressed as a [Long] number of the specified [unit].
 * If the result doesn't fit in the range of [Long] type, it is coerced into that range:
 * - [Long.MIN_VALUE] is returned if it's less than `Long.MIN_VALUE`,
 * - [Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.
 * An infinite duration value is converted either to

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[Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n    */\n    public fun
    toLong(unit: DurationUnit): Long {\n        return when (rawValue) {\n            INFINITE.rawValue ->
Long.MAX_VALUE\n            NEG_INFINITE.rawValue -> Long.MIN_VALUE\n            else ->
convertDurationUnit(value, storageUnit, unit)\n        }\n    }\n    /**\n     * Returns the value of this duration
expressed as an [Int] number of the specified [unit].\n     *\n     * If the result doesn't fit in the range of [Int] type, it
is coerced into that range:\n     * - [Int.MIN_VALUE] is returned if it's less than `Int.MIN_VALUE`,\n     * -
[Int.MAX_VALUE] is returned if it's greater than `Int.MAX_VALUE`.\n     *\n     * An infinite duration value is
converted either to [Int.MAX_VALUE] or [Int.MIN_VALUE] depending on its sign.\n    */\n    public fun
    toInt(unit: DurationUnit): Int =\n        toLong(unit).coerceIn(Int.MIN_VALUE.toLong(),
Int.MAX_VALUE.toLong()).toInt()\n    /** The value of this duration expressed as a [Double] number of days.
*/\n    @ExperimentalTime\n    @Deprecated("\nUse
    inWholeDays property instead or convert toDouble(DAYS) if a double value is required.\n",
    ReplaceWith("\ntoDouble(DurationUnit.DAYS)\n"))\n    public val inDays: Double get() =
    toDouble(DurationUnit.DAYS)\n    /** The value of this duration expressed as a [Double] number of hours. */\n
    @ExperimentalTime\n    @Deprecated("\nUse inWholeHours property instead or convert toDouble(HOURS) if a
double value is required.\n", ReplaceWith("\ntoDouble(DurationUnit.HOURS)\n"))\n    public val inHours: Double
get() = toDouble(DurationUnit.HOURS)\n    /** The value of this duration expressed as a [Double] number of
minutes. */\n    @ExperimentalTime\n    @Deprecated("\nUse inWholeMinutes property instead or convert
toDouble(MINUTES) if a double value is required.\n", ReplaceWith("\ntoDouble(DurationUnit.MINUTES)\n"))\n
    public val inMinutes: Double get() = toDouble(DurationUnit.MINUTES)\n    /** The value of this duration
expressed as a [Double] number of seconds. */\n    @ExperimentalTime\n
    @Deprecated("\nUse inWholeSeconds property instead or convert toDouble(SECONDS) if a double value is
required.\n", ReplaceWith("\ntoDouble(DurationUnit.SECONDS)\n"))\n    public val inSeconds: Double get() =
    toDouble(DurationUnit.SECONDS)\n    /** The value of this duration expressed as a [Double] number of
milliseconds. */\n    @ExperimentalTime\n    @Deprecated("\nUse inWholeMilliseconds property instead or
convert toDouble(MILLISECONDS) if a double value is required.\n",
    ReplaceWith("\ntoDouble(DurationUnit.MILLISECONDS)\n"))\n    public val inMilliseconds: Double get() =
    toDouble(DurationUnit.MILLISECONDS)\n    /** The value of this duration expressed as a [Double] number of
microseconds. */\n    @ExperimentalTime\n    @Deprecated("\nUse inWholeMicroseconds property instead or
convert toDouble(MICROSECONDS) if a double value is required.\n",
    ReplaceWith("\ntoDouble(DurationUnit.MICROSECONDS)\n"))\n    public val inMicroseconds: Double get() =
    toDouble(DurationUnit.MICROSECONDS)\n\n    /** The value of this duration expressed as a [Double] number of
nanoseconds. */\n    @ExperimentalTime\n    @Deprecated("\nUse inWholeNanoseconds property instead or
convert toDouble(NANOSECONDS) if a double
value is required.\n", ReplaceWith("\ntoDouble(DurationUnit.NANOSECONDS)\n"))\n    public val inNanoseconds:
Double get() = toDouble(DurationUnit.NANOSECONDS)\n\n    /**\n     * The value of this duration expressed as
a [Long] number of days.\n     *\n     * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n    */\n    public val inWholeDays: Long\n        get() =
    toLong(DurationUnit.DAYS)\n    /**\n     * The value of this duration expressed as a [Long] number of hours.\n
*/\n    * An infinite duration value is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending
on its sign.\n    */\n    public val inWholeHours: Long\n        get() = toLong(DurationUnit.HOURS)\n\n    /**\n
     * The value of this
duration expressed as a [Long] number of minutes.\n     *\n     * An infinite duration value is converted either
to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n    */\n    public val inWholeMinutes:
Long\n        get() = toLong(DurationUnit.MINUTES)\n    /**\n     * The value of this duration expressed as a
[Long] number of seconds.\n     *\n     * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n    */\n    public val inWholeSeconds: Long\n        get() =
    toLong(DurationUnit.SECONDS)\n    /**\n     * The value of this duration expressed as a [Long] number of

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milliseconds.\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n * public val inWholeMilliseconds: Long\n get() {\n
return if (isInMillis() && isFinite()) value else toLong(DurationUnit.MILLISECONDS)\n }\n /**\n *
The value of this
duration expressed as a [Long] number of microseconds.\n * If the result doesn't fit in the range of [Long]
type, it is coerced into that range:\n * - [Long.MIN_VALUE] is returned if it's less than `Long.MIN_VALUE`,\n
* - [Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n * An infinite duration
value is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n * public
val inWholeMicroseconds: Long\n get() = toLong(DurationUnit.MICROSECONDS)\n /**\n * The value
of this duration expressed as a [Long] number of nanoseconds.\n * If the result doesn't fit in the range of
[Long] type, it is coerced into that range:\n * - [Long.MIN_VALUE] is returned if it's less than
`Long.MIN_VALUE`,\n * - [Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n * An
infinite duration value is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending
on its sign.\n * public val inWholeNanoseconds: Long\n get() {\n val value = value\n
return when {\n isInNanos() -> value\n value > Long.MAX_VALUE / NANOS_IN_MILLIS ->
Long.MAX_VALUE\n value < Long.MIN_VALUE / NANOS_IN_MILLIS -> Long.MIN_VALUE\n
else -> millisToNanos(value)\n }\n }\n // shortcuts\n /**\n * Returns the value of this
duration expressed as a [Long] number of nanoseconds.\n * If the value doesn't fit in the range of [Long]
type, it is coerced into that range, see the conversion [Double.toLong] for details.\n * The range of
durations that can be expressed as a `Long` number of nanoseconds is approximately \u00b1292 years.\n *
@ExperimentalTime\n @Deprecated("Use inWholeNanoseconds property instead.")\n
ReplaceWith("this.inWholeNanoseconds")\n public fun toLongNanoseconds(): Long =
inWholeNanoseconds\n\n
/**\n * Returns the value of this duration expressed as a [Long] number of milliseconds.\n * The value
is coerced to the range of [Long] type, if it doesn't fit in that range, see the conversion [Double.toLong] for details.\n
*\n * The range of durations that can be expressed as a `Long` number of milliseconds is approximately
\u00b11292 million years.\n * @ExperimentalTime\n @Deprecated("Use inWholeMilliseconds property
instead.", ReplaceWith("this.inWholeMilliseconds"))\n public fun toLongMilliseconds(): Long =
inWholeMilliseconds\n\n
/**\n * Returns a string representation of this duration value\n * expressed as a
combination of numeric components, each in its own unit.\n * Each component is a number followed by the
unit abbreviated name: `d`, `h`, `m`, `s`:\n * `5h`, `1d 12h`, `1h 0m 30.340s`.\n * The last component, usually
seconds, can be a number with a fractional part.\n * If the duration
is less than a second, it is represented as a single number\n * with one of sub-second units: `ms` (milliseconds),
`us` (microseconds), or `ns` (nanoseconds):\n * `140.884ms`, `500us`, `24ns`.\n * A negative duration is
prefixed with `-` sign and, if it consists of multiple components, surrounded with parentheses:\n * `-12m` and
`-(1h 30m)`.\n * Special cases:\n * - an infinite duration is formatted as `"Infinity"` or `"-Infinity"`
without a unit.\n * It's recommended to use [toIsoString] that uses more strict ISO-8601 format instead of
this `toString`\n * when you want to convert a duration to a string in cases of serialization, interchange, etc.\n
*\n * @sample samples.time.Durations.toStringDefault\n * override fun toString(): String = when
(rawValue) {\n 0L -> "0s"\n INFINITE.rawValue -> "Infinity"\n NEG_INFINITE.rawValue -> "-
Infinity"\n else -> {\n val isNegative
= isNegative()\n buildString {\n if (isNegative) append('-')\n absoluteValue.toComponents
{ days, hours, minutes, seconds, nanoseconds ->\n val hasDays = days != 0L\n val hasHours
= hours != 0\n val hasMinutes = minutes != 0\n val hasSeconds = seconds != 0 ||
nanoseconds != 0\n var components = 0\n if (hasDays) {\n
append(days).append('d')\n components++\n }\n if (hasHours || (hasDays &&
(hasMinutes || hasSeconds))) {\n if (components++ > 0) append(' ')\n
append(hours).append('h')\n }\n if (hasMinutes || (hasSeconds && (hasHours || hasDays)))

```



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        if (components++ > 0) append(' ')
        append(minutes).append('m')
    }
    if (hasSeconds) {
        if (components++ > 0) append(' ')
        when
        seconds != 0 || hasDays || hasHours || hasMinutes ->
        appendFractional(seconds, nanoseconds, 9, "s", isoZeroes = false)
        nanoseconds >= 1_000_000 ->
        appendFractional(nanoseconds / 1_000_000, nanoseconds % 1_000_000, 6, "ms",
        isoZeroes = false)
        nanoseconds >= 1_000 ->
        appendFractional(nanoseconds / 1_000, nanoseconds % 1_000, 3, "us", isoZeroes = false)
        else ->
        append(nanoseconds).append("ns")
    }
    if (isNegative && components > 1) insert(1, '(').append(')')
}
private fun
StringBuilder.appendFractional(whole:
Int, fractional: Int, fractionalSize: Int, unit: String, isoZeroes: Boolean) {
    append(whole)
    if (fractional != 0) {
        append('.')
        val fracString = fractional.toString().padStart(fractionalSize, '0')
        val nonZeroDigits = fracString.indexOfLast { it != '0' } + 1
        when {
            !isoZeroes && nonZeroDigits < 3 -> appendRange(fracString, 0, nonZeroDigits)
            else -> appendRange(fracString, 0, ((nonZeroDigits + 2) / 3) * 3)
        }
        append(unit)
    }
}
/**
 * Returns a string representation of this duration value expressed in the given [unit] and formatted with the specified [decimals] number of digits after decimal point.
 * Special cases:
 * - an infinite duration is formatted as "Infinity" or "-Infinity" without a unit.
 * @param decimals the number of digits after decimal point to show. The value must be non-negative.
 * No more than 12 decimals will be shown, even if a larger number is requested.
 * @return the value of duration in the specified [unit] followed by that unit abbreviated name: `d`, `h`, `m`, `s`, `ms`, `us`, or `ns`.
 * @throws IllegalArgumentException if [decimals] is less than zero.
 * @sample samples.time.Durations.toStringDecimals
 */
public fun toString(unit: DurationUnit, decimals: Int = 0): String {
    require(decimals >= 0) { "decimals must be not negative, but was $decimals" }
    val number = toDouble(unit)
    if (number.isInfinite()) return number.toString()
    return formatToExactDecimals(number, decimals.coerceAtMost(12)) + unit.shortName()
}
/**
 * Returns an ISO-8601 based string representation of this duration.
 * The returned value is presented in the format `PThHmMs.fS`, where `h`, `m`, `s` are the integer components of this duration (see [toComponents]) and `f` is a fractional part of second. Depending on the roundness of the value the fractional part can be formatted with either 0, 3, 6, or 9 decimal digits.
 * The infinite duration is represented as "PT999999999999999H" which is larger than any possible finite duration in Kotlin.
 * Negative durations are indicated with the sign '-' in the beginning of the returned string, for example, "-PT5M30S".
 * @sample samples.time.Durations.toIsoString
 */
public fun toIsoString(): String = buildString {
    if (isNegative()) append('-')
    append("PT")
    this@Duration.absoluteValue.toComponents { hours, minutes, seconds, nanoseconds ->
        @Suppress("NAME_SHADOWING")
        var hours = hours
        if (isInfinite()) {
            // use large enough value instead of Long.MAX_VALUE
            hours = 9_999_999_999_999
        }
        val hasHours = hours != 0L
        val hasSeconds = seconds != 0 || nanoseconds != 0
        val hasMinutes = minutes != 0 || (hasSeconds && hasHours)
        if (hasHours) {
            append(hours).append('H')
        }
        if (hasMinutes) {
            append(minutes).append('M')
        }
        if (hasSeconds || (!hasHours && !hasMinutes)) {
            appendFractional(seconds, nanoseconds, 9, "S", isoZeroes = true)
        }
    }
}
// constructing from number of units
// extension functions
/**
 * Returns a [Duration] equal to this [Int] number of the specified [unit].
 */
@SinceKotlin("1.6")
@WasExperimental(ExperimentalTime::class)
public fun Int.toDuration(unit: DurationUnit): Duration {
    return if (unit <= DurationUnit.SECONDS) {
        durationOfNanos(convertDurationUnitOverflow(this.toLong(), unit, DurationUnit.NANOSECONDS))
    } else {
        toLong().toDuration(unit)
    }
}
/**
 * Returns a [Duration] equal to this [Long] number of the specified [unit].
 */
@SinceKotlin("1.6")
@WasExperimental(ExperimentalTime::class)
public fun Long.toDuration(unit:

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DurationUnit): Duration {
    val maxNsInUnit = convertDurationUnitOverflow(MAX_NANOS,
DurationUnit.NANOSECONDS, unit)
    if (this in -maxNsInUnit..maxNsInUnit) {
        return durationOfNanos(
convertDurationUnitOverflow(this, unit, DurationUnit.NANOSECONDS))
    } else {
        val millis = convertDurationUnit(
this, unit, DurationUnit.MILLISECONDS)
        return durationOfMillis(
millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))
    }
}

/** Returns a [Duration] equal to this [Double] number of the specified [unit].
 * Depending on its magnitude, the value is rounded to an integer number of nanoseconds or milliseconds.
 * @throws IllegalArgumentException if this `Double` value is `NaN`.
 */
@SinceKotlin("1.6")
@WasExperimental(ExperimentalTime::class)
public fun Double.toDuration(unit: DurationUnit): Duration {
    val valueInNs = convertDurationUnit(this, unit, DurationUnit.NANOSECONDS)
    require(!valueInNs.isNaN()) { "Duration value cannot be NaN." }
    val nanos = valueInNs.roundToLong()
    return if (nanos in -MAX_NANOS..MAX_NANOS) {
        durationOfNanos(nanos)
    } else {
        val millis = convertDurationUnit(
this, unit, DurationUnit.MILLISECONDS).roundToLong()
        durationOfMillisNormalized(millis)
    }
}

// constructing from number of units
// deprecated extension properties
/** Returns a [Duration] equal to this [Int] number of nanoseconds.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Int.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("this.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Int.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)

/** Returns a [Duration] equal to this [Long] number of nanoseconds.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Long.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("this.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Long.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)

/** Returns a [Duration] equal to this [Double] number of nanoseconds.
 * @throws IllegalArgumentException if this [Double] value is `NaN`.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Double.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("this.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Double.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)

/** Returns a [Duration] equal to this [Int] number of microseconds.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Int.microseconds' extension property from Duration.Companion instead.", ReplaceWith("this.microseconds", "kotlin.time.Duration.Companion.microseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Int.microseconds get() = toDuration(DurationUnit.MICROSECONDS)

/** Returns a [Duration] equal to this [Long] number of microseconds.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Long.microseconds' extension property from Duration.Companion instead.", ReplaceWith("this.microseconds", "kotlin.time.Duration.Companion.microseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Long.microseconds get() = toDuration(DurationUnit.MICROSECONDS)

/** Returns a [Duration] equal to this [Double] number of microseconds.
 * @throws IllegalArgumentException if this [Double] value is `NaN`.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Double.microseconds' extension property from Duration.Companion instead.", ReplaceWith("this.microseconds", "kotlin.time.Duration.Companion.microseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)

/** Returns a [Duration] equal to this [Int] number of milliseconds.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Int.milliseconds' extension property from Duration.Companion instead.", ReplaceWith("this.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public val Int.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)

/** Returns a [Duration] equal to this [Long] number of milliseconds.
 */
@SinceKotlin("1.3")
@ExperimentalTime
@Deprecated("Use 'Long.milliseconds' extension property from Duration.Companion instead.", ReplaceWith("this.milliseconds",

```

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\"kotlin.time.Duration.Companion.milliseconds\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic
val Long.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/**\n * Returns a [Duration] equal to
this [Double] number of milliseconds.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Double.milliseconds' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\"),
\"kotlin.time.Duration.Companion.milliseconds\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Double.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/**\n * Returns a [Duration] equal to this
[Int] number of seconds. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Int.seconds'
extension property from Duration.Companion instead.\", ReplaceWith(\"this.seconds\"),
\"kotlin.time.Duration.Companion.seconds\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/**\n * Returns a [Duration] equal
to this [Long] number of seconds. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use
'Long.seconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.seconds\"),
\"kotlin.time.Duration.Companion.seconds\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/**\n * Returns a [Duration] equal to this [Double]
number of seconds.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Double.seconds' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.seconds\"),
\"kotlin.time.Duration.Companion.seconds\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Double.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/**\n * Returns a [Duration] equal to this [Int]
number of minutes. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Int.minutes' extension
property
from Duration.Companion instead.\", ReplaceWith(\"this.minutes\"),
\"kotlin.time.Duration.Companion.minutes\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/**\n * Returns a [Duration] equal to this [Long] number of
minutes. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Long.minutes' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.minutes\"),
\"kotlin.time.Duration.Companion.minutes\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/**\n * Returns a [Duration] equal to this [Double]
number of minutes.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Double.minutes' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.minutes\"),
\"kotlin.time.Duration.Companion.minutes\")\n@DeprecatedSinceKotlin(warningSince
= \"1.5\")\npublic val Double.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/**\n * Returns a [Duration]
equal to this [Int] number of hours. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use
'Int.hours' extension property from Duration.Companion instead.\", ReplaceWith(\"this.hours\"),
\"kotlin.time.Duration.Companion.hours\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Int.hours get() = toDuration(DurationUnit.HOURS)\n\n/**\n * Returns a [Duration] equal to this [Long] number of
hours. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Long.hours' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.hours\"),
\"kotlin.time.Duration.Companion.hours\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Long.hours get() = toDuration(DurationUnit.HOURS)\n\n/**\n * Returns a [Duration] equal to this [Double]
number of hours.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use
'Double.hours' extension property from Duration.Companion instead.\", ReplaceWith(\"this.hours\"),
\"kotlin.time.Duration.Companion.hours\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Double.hours get() = toDuration(DurationUnit.HOURS)\n\n/**\n * Returns a [Duration] equal to this [Int] number of
days. *\n * @SinceKotlin(\"1.3\")\n * @ExperimentalTime\n * @Deprecated(\"Use 'Int.days' extension property from

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Duration.Companion instead.\", ReplaceWith(\"this.days\",
\"kotlin.time.Duration.Companion.days\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val Int.days
get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a [Duration] equal to this [Long] number of days.
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Long.days' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.days\",
\"kotlin.time.Duration.Companion.days\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic
val Long.days get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a [Duration] equal to this [Double]
number of days.\n * \n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Double.days' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.days\",
\"kotlin.time.Duration.Companion.days\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic val
Double.days get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a duration whose value is the specified
[duration] value multiplied by this number.
*\n@SinceKotlin(\"1.6\")\n@WasExperimental(ExperimentalTime::class)\n@kotlin.internal.InlineOnly\npublic
inline operator fun Int.times(duration: Duration): Duration = duration * this\n\n/** Returns a duration whose
value is the specified [duration] value multiplied by this number.\n * \n * The operation may involve rounding when
the result cannot be represented exactly with
a [Double] number.\n * \n * @throws IllegalArgumentException if the operation results in a `NaN` value.\n
*\n@SinceKotlin(\"1.6\")\n@WasExperimental(ExperimentalTime::class)\n@kotlin.internal.InlineOnly\npublic
inline operator fun Double.times(duration: Duration): Duration = duration * this\n\n\nprivate fun
parseDuration(value: String, strictIso: Boolean): Duration {\n    var length = value.length\n    if (length == 0) throw
IllegalArgumentException(\"The string is empty\")\n    var index = 0\n    var result = Duration.ZERO\n    val
infinityString = \"Infinity\"\n    when (value[index]) {\n        '+', '-' -> index++\n    }\n    val hasSign = index > 0\n    val
isNegative = hasSign && value.startsWith('-')\n    when {\n        length <= index ->\n            throw
IllegalArgumentException(\"No components\")\n        value[index] == 'P' -> {\n            if (++index == length) throw
IllegalArgumentException()\n            val nonDigitSymbols = \".-\" \n            var isTimeComponent
= false\n            var prevUnit: DurationUnit? = null\n            while (index < length) {\n                if (value[index] ==
'T') {\n                    if (isTimeComponent || ++index == length) throw IllegalArgumentException()\n                    isTimeComponent = true\n                    continue\n                }\n                val component =
value.substringWhile(index) { it in '0'..'9' || it in nonDigitSymbols }\n                if (component.isEmpty()) throw
IllegalArgumentException()\n                index += component.length\n                val unitChar =
value.getOrElse(index) { throw IllegalArgumentException(\"Missing unit for value $component\") }\n                index++\n                val unit = durationUnitByIsoChar(unitChar, isTimeComponent)\n                if (prevUnit != null
&& prevUnit <= unit) throw IllegalArgumentException(\"Unexpected order of duration components\")\n                prevUnit = unit\n                val dotIndex = component.indexOf('.')\n                if (unit == DurationUnit.SECONDS && dotIndex > 0) {\n                    val whole =
component.substring(0, dotIndex)\n                    result += parseOverLongIsoComponent(whole).toDuration(unit)\n                    result += component.substring(dotIndex).toDouble().toDuration(unit)\n                } else {\n                    result += parseOverLongIsoComponent(component).toDuration(unit)\n                }\n            }\n            strictIso
->\n                throw IllegalArgumentException()\n            value.regionMatches(index, infinityString, 0, length =
maxOf(length - index, infinityString.length), ignoreCase = true) -> {\n                result = Duration.INFINITE\n            }\n            else -> {\n                // parse default string format\n                var prevUnit: DurationUnit? = null\n                var
afterFirst = false\n                var allowSpaces = !hasSign\n                if (hasSign && value[index] == '(' && value.last()
== ')') {\n                    allowSpaces
= true\n                    if (++index == --length) throw IllegalArgumentException(\"No components\")\n                }\n                while (index < length) {\n                    if (afterFirst && allowSpaces) {\n                        index = value.skipWhile(index) {
it == ' ' }\n                    }\n                    afterFirst = true\n                    val component = value.substringWhile(index) { it in
'0'..'9' || it == '.' }\n                    if (component.isEmpty()) throw IllegalArgumentException()\n                    index +=

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component.length\n        val unitName = value.substringWhile(index) { it in 'a'..'z' }\n        index +=
unitName.length\n        val unit = durationUnitByShortName(unitName)\n        if (prevUnit != null &&
prevUnit <= unit) throw IllegalArgumentException("\Unexpected order of duration components")\n
prevUnit = unit\n        val dotIndex = component.indexOf('.')\n        if (dotIndex > 0) {\n
    val whole = component.substring(0, dotIndex)\n        result += whole.toLong().toDuration(unit)\n
    result += component.substring(dotIndex).toDouble().toDuration(unit)\n        if (index < length) throw
IllegalArgumentException("Fractional component must be last")\n        } else {\n        result +=
component.toLong().toDuration(unit)\n        }\n        }\n        }\n        return if (isNegative) -result else
result\n}\n\nprivate fun parseOverLongIsoComponent(value: String): Long {\n    val length = value.length\n    var
startIndex = 0\n    if (length > 0 && value[0] in '+-') startIndex++\n    if ((length - startIndex) > 16 &&
(startIndex..value.lastIndex).all { value[it] in '0'..'9' }) {\n        // all chars are digits, but more than
ceiling(log10(MAX_MILLIS / 1000)) of them\n        return if (value[0] == '-') Long.MIN_VALUE else
Long.MAX_VALUE\n    }\n    // TODO: replace with just toLong after
min JDK becomes 8\n    return if (value.startsWith("+")) value.drop(1).toLong() else
value.toLong()\n}\n\nprivate inline fun String.substringWhile(startIndex: Int, predicate: (Char) -> Boolean):
String =\n    substring(startIndex, skipWhile(startIndex, predicate))\n\nprivate inline fun
String.skipWhile(startIndex: Int, predicate: (Char) -> Boolean): Int {\n    var i = startIndex\n    while (i < length &&
predicate(this[i])) i++\n    return i}\n}\n}\n}\n}\n// The ranges are chosen so that they are:\n// - symmetric relative to
zero: this greatly simplifies operations with sign, e.g. unaryMinus and minus.\n// - non-overlapping, but adjacent:
the first value that doesn't fit in nanos range, can be exactly represented in millis.\n\ninternal const val
NANOS_IN_MILLIS = 1_000_000\n// maximum number duration can store in nanosecond range\n\ninternal const
val MAX_NANOS = Long.MAX_VALUE / 2 / NANOS_IN_MILLIS * NANOS_IN_MILLIS - 1 // ends in
..._999_999\n// maximum number duration can store
in millisecond range, also encodes an infinite value\n\ninternal const val MAX_MILLIS = Long.MAX_VALUE /
2\n// MAX_NANOS expressed in milliseconds\n\nprivate const val MAX_NANOS_IN_MILLIS = MAX_NANOS /
NANOS_IN_MILLIS\n\nprivate fun nanosToMillis(nanos: Long): Long = nanos / NANOS_IN_MILLIS\n\nprivate
fun millisToNanos(millis: Long): Long = millis * NANOS_IN_MILLIS\n\nprivate fun
durationOfNanos(normalNanos: Long) = Duration(normalNanos shl 1)\n\nprivate fun durationOfMillis(normalMillis:
Long) = Duration((normalMillis shl 1) + 1)\n\nprivate fun durationOf(normalValue: Long, unitDiscriminator: Int) =
Duration((normalValue shl 1) + unitDiscriminator)\n\nprivate fun durationOfNanosNormalized(nanos: Long) =\n    if
(nanos in -MAX_NANOS..MAX_NANOS) {\n        durationOfNanos(nanos)\n    } else {\n
durationOfMillis(nanosToMillis(nanos))\n    }\n\nprivate fun durationOfMillisNormalized(millis: Long) =\n    if
(millis in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n
durationOfNanos(millisToNanos(millis))\n    } else {\n
durationOfMillis(millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))\n    }\n}\n\ninternal expect val
durationAssertionsEnabled: Boolean\n\ninternal expect fun formatToExactDecimals(value: Double, decimals: Int):
String\n\ninternal expect fun formatUpToDecimals(value: Double, decimals: Int): String", "/*\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("UnsignedKt")\n\npackage kotlin\n\n@PublishedApi\n\ninternal fun uintCompare(v1:
Int, v2: Int): Int = (v1 xor Int.MIN_VALUE).compareTo(v2 xor Int.MIN_VALUE)\n\n@PublishedApi\n\ninternal fun
ulongCompare(v1: Long, v2: Long): Int = (v1 xor Long.MIN_VALUE).compareTo(v2 xor
Long.MIN_VALUE)\n\n@PublishedApi\n\ninternal fun uintDivide(v1: UInt, v2: UInt): UInt = (v1.toLong() /
v2.toLong()).toUInt()\n\n@PublishedApi\n\ninternal fun uintRemainder(v1:
UInt, v2: UInt): UInt = (v1.toLong() % v2.toLong()).toUInt()\n\n// Division and remainder are based on Guava's
UnsignedLongs implementation\n\n// Copyright 2011 The Guava Authors\n\n@PublishedApi\n\ninternal fun
ulongDivide(v1: ULong, v2: ULong): ULong {\n    val dividend = v1.toLong()\n    val divisor = v2.toLong()\n    if
(divisor < 0) { // i.e., divisor >= 2^63:\n        return if (v1 < v2) ULong(0) else ULong(1)\n    }\n}\n\n// Optimization

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- use signed division if both dividend and divisor < 2^63\n  if (dividend >= 0) {\n    return ULong(dividend /
divisor)\n  }\n\n // Otherwise, approximate the quotient, check, and correct if necessary.\n  val quotient =
((dividend ushr 1) / divisor) shl 1\n  val rem = dividend - quotient * divisor\n  return ULong(quotient + if
(ULong(rem) >= ULong(divisor)) 1 else 0)\n}\n\n@PublishedApi\ninternal fun ulongRemainder(v1: ULong, v2:
ULong): ULong {\n  val dividend = v1.toLong()\n  val divisor = v2.toLong()\n  if (divisor < 0)
{\n    // i.e., divisor >= 2^63:\n    return if (v1 < v2) {\n      v1 // dividend < divisor\n    } else {\n      v1 - v2
// dividend >= divisor\n    }\n  }\n\n // Optimization - use signed modulus if both dividend and divisor < 2^63\n
if (dividend >= 0) {\n    return ULong(dividend % divisor)\n  }\n\n // Otherwise, approximate the quotient,
check, and correct if necessary.\n  val quotient = ((dividend ushr 1) / divisor) shl 1\n  val rem = dividend -
quotient * divisor\n  return ULong(rem - if (ULong(rem) >= ULong(divisor)) divisor else
0)\n}\n\n@PublishedApi\ninternal fun doubleToUInt(v: Double): UInt = when {\n  v.isNaN() -> 0u\n  v <=
UInt.MIN_VALUE.toDouble() -> UInt.MIN_VALUE\n  v >= UInt.MAX_VALUE.toDouble() ->
UInt.MAX_VALUE\n  v <= Int.MAX_VALUE -> v.toInt().toUInt()\n  else -> (v -
Int.MAX_VALUE).toInt().toUInt() + Int.MAX_VALUE.toUInt() // Int.MAX_VALUE < v <
UInt.MAX_VALUE\n}\n\n@PublishedApi\ninternal fun doubleToULong(v:
Double): ULong = when {\n  v.isNaN() -> 0u\n  v <= ULong.MIN_VALUE.toDouble() ->
ULong.MIN_VALUE\n  v >= ULong.MAX_VALUE.toDouble() -> ULong.MAX_VALUE\n  v <
Long.MAX_VALUE -> v.toLong().toULong()\n\n // Real values from Long.MAX_VALUE to
(Long.MAX_VALUE + 1) are not representable in Double, so don't handle them.\n  else -> (v -
9223372036854775808.0).toLong().toULong() + 9223372036854775808uL // Long.MAX_VALUE + 1 < v <
ULong.MAX_VALUE\n}\n\n@PublishedApi\ninternal fun uintToDouble(v: Int): Double = (v and
Int.MAX_VALUE).toDouble() + (v ushr 31 shl 30).toDouble() * 2\n\n@PublishedApi\ninternal fun
ulongToDouble(v: Long): Double = (v ushr 11).toDouble() * 2048 + (v and 2047)\n\n\ninternal fun
ulongToString(v: Long): String = ulongToString(v, 10)\n\ninternal fun ulongToString(v: Long, base: Int): String {\n
if (v >= 0) return v.toString(base)\n  var quotient = ((v ushr 1) / base) shl 1\n  var rem = v - quotient * base\n
if (rem >= base) {\n    rem
- = base\n    quotient += 1\n  }\n  return quotient.toString(base) + rem.toString(base)\n}\n\n", "/*\n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/**\n * Given an [iterator] function constructs an [Iterable] instance that returns values through
the [Iterator]\n * provided by that function.\n * @sample samples.collections.Iterables.Building.iterable\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable(crossinline iterator: () -> Iterator<T>): Iterable<T>
= object : Iterable<T> {\n  override fun iterator(): Iterator<T> = iterator()\n}\n\n/**\n * A wrapper over another
[Iterable] (or any other object that can produce an [Iterator]) that returns\n * an indexing iterator.\n */\n\ninternal class
IndexingIterable<out
T>(private val iteratorFactory: () -> Iterator<T>) : Iterable<IndexedValue<T>> {\n  override fun iterator():
Iterator<IndexedValue<T>> = IndexingIterator(iteratorFactory())\n}\n\n\n/**\n * Returns the size of this iterable if
it is known, or `null` otherwise.\n */\n\n@PublishedApi\ninternal fun <T> Iterable<T>.collectionSizeOrNull(): Int? =
if (this is Collection<*>) this.size else null\n\n/**\n * Returns the size of this iterable if it is known, or the specified
[default] value otherwise.\n */\n\n@PublishedApi\ninternal fun <T> Iterable<T>.collectionSizeOrDefault(default:
Int): Int = if (this is Collection<*>) this.size else default\n\n\n/**\n * Returns a single list of all elements from all
collections in the given collection.\n * @sample samples.collections.Iterables.Operations.flattenIterable\n */\n\npublic
fun <T> Iterable<Iterable<T>>.flatten(): List<T> {\n  val result = ArrayList<T>()\n  for (element in this) {\n
result.addAll(element)\n  }\n  return
result\n}\n\n/**\n * Returns a pair of lists, where\n * *first* list is built from the first values of each pair from this
collection,\n * *second* list is built from the second values of each pair from this collection.\n * @sample
samples.collections.Iterables.Operations.unzipIterable\n */\n\npublic fun <T, R> Iterable<Pair<T, R>>.unzip():

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Pair<List<T>, List<R>> { \n    val expectedSize = collectionSizeOrDefault(10)\n    val listT =
ArrayList<T>(expectedSize)\n    val listR = ArrayList<R>(expectedSize)\n    for (pair in this) {\n
listT.add(pair.first)\n    listR.add(pair.second)\n    }\n    return listT to listR\n}\n"/*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("\SequencesKt")\n\npackage
kotlin.sequences\n\nimport kotlin.random.Random\n\n/**\n
* Given an [iterator] function constructs a [Sequence] that returns values through the [Iterator]\n * provided by that
function.\n * The values are evaluated lazily, and the sequence is potentially infinite.\n * \n * @sample
samples.collections.Sequences.Building.sequenceFromIterator\n */\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
<T> Sequence(crossinline iterator: () -> Iterator<T>): Sequence<T> = object : Sequence<T> {\n    override fun
iterator(): Iterator<T> = iterator()\n}\n\n/**\n * Creates a sequence that returns all elements from this iterator. The
sequence is constrained to be iterated only once.\n * \n * @sample
samples.collections.Sequences.Building.sequenceFromIterator\n */\n\npublic fun <T> Iterator<T>.asSequence():
Sequence<T> = Sequence { this }.constrainOnce()\n\n/**\n * Creates a sequence that returns the specified values.\n * \n *
@sample samples.collections.Sequences.Building.sequenceOfValues\n */\n\npublic fun <T> sequenceOf(vararg
elements: T): Sequence<T> = if (elements.isEmpty())
emptySequence() else elements.asSequence()\n\n/**\n * Returns an empty sequence.\n */\n\npublic fun <T>
emptySequence(): Sequence<T> = EmptySequence\n\nprivate object EmptySequence : Sequence<Nothing>,
DropTakeSequence<Nothing> {\n    override fun iterator(): Iterator<Nothing> = EmptyIterator\n    override fun
drop(n: Int) = EmptySequence\n    override fun take(n: Int) = EmptySequence\n}\n\n/**\n * Returns this sequence if
it's not `null` and the empty sequence otherwise.\n * \n * @sample
samples.collections.Sequences.Usage.sequenceOrEmpty\n
*/\n\n@SinceKotlin("1.3")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> Sequence<T>?.orEmpty():
Sequence<T> = this ?. emptySequence()\n\n/**\n * Returns a sequence that iterates through the elements either of
this sequence\n * or, if this sequence turns out to be empty, of the sequence returned by [defaultValue] function.\n
*\n * @sample samples.collections.Sequences.Usage.sequenceIfEmpty\n */\n\n@SinceKotlin("1.3")\n\npublic fun
<T>
Sequence<T>.ifEmpty(defaultValue: () -> Sequence<T>): Sequence<T> = sequence {\n    val iterator =
this@ifEmpty.iterator()\n    if (iterator.hasNext()) {\n        yieldAll(iterator)\n    } else {\n
yieldAll(defaultValue())\n    }\n}\n\n/**\n * Returns a sequence of all elements from all sequences in this
sequence.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Sequences.Transformations.flattenSequenceOfSequences\n */\n\npublic fun <T>
Sequence<Sequence<T>>.flatten(): Sequence<T> = flatten { it.iterator() }\n\n/**\n * Returns a sequence of all
elements from all iterables in this sequence.\n * \n * The operation is _intermediate_ and _stateless_.\n
*\n * @sample samples.collections.Sequences.Transformations.flattenSequenceOfLists\n
*/\n\n@kotlin.jvm.JvmName("\flattenSequenceOfIterable")\n\npublic fun <T> Sequence<Iterable<T>>.flatten():
Sequence<T> = flatten { it.iterator() }\n\nprivate fun <T, R> Sequence<T>.flatten(iterator: (T) -> Iterator<R>):
Sequence<R> {\n    if (this is TransformingSequence<*, *>) {\n        return (this as TransformingSequence<*,
T>).flatten(iterator)\n    }\n    return FlatteningSequence(this, { it }, iterator)\n}\n\n/**\n * Returns a pair of lists,
where\n * first list is built from the first values of each pair from this sequence,\n * second list is built from the
second values of each pair from this sequence.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Sequences.Transformations.unzip\n */\n\npublic fun <T, R> Sequence<Pair<T, R>>.unzip():
Pair<List<T>, List<R>> {\n    val listT = ArrayList<T>()\n    val listR = ArrayList<R>()\n    for (pair in this) {\n
listT.add(pair.first)\n    listR.add(pair.second)\n    }\n    return listT to listR\n}\n\n/**\n * Returns a sequence that
yields elements of this sequence randomly shuffled.\n * \n * Note that every iteration of the sequence returns
elements in a different order.\n * \n * The operation is _intermediate_

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and _stateful_.\n *\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled(): Sequence<T> =
shuffled(Random)\n\n/**\n * Returns a sequence that yields elements of this sequence randomly shuffled\n * using
the specified [random] instance as the source of randomness.\n *\n * Note that every iteration of the sequence
returns elements in a different order.\n *\n * The operation is _intermediate_ and _stateful_.\n
*\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled(random: Random): Sequence<T> =
sequence<T> {\n    val buffer = toMutableList()\n    while (buffer.isNotEmpty()) {\n        val j =
random.nextInt(buffer.size)\n        val last = buffer.removeLast()\n        val value = if (j < buffer.size) buffer.set(j,
last) else last\n        yield(value)\n    }\n}\n\n/**\n * A sequence that returns the values from the underlying
[sequence] that either match or do not match\n * the specified [predicate].\n *\n * @param sendWhen If `true`,
values for which the predicate returns
`true` are returned. Otherwise,\n * values for which the predicate returns `false` are returned\n *\ninternal class
FilteringSequence<T>(\n    private val sequence: Sequence<T>,\n    private val sendWhen: Boolean = true,\n    private val predicate: (T) -> Boolean\n) : Sequence<T> {\n    override fun iterator(): Iterator<T> = object :
Iterator<T> {\n        val iterator = sequence.iterator()\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1
for continue\n        var nextItem: T? = null\n        private fun calcNext() {\n            while (iterator.hasNext()) {\n
                val item = iterator.next()\n                if (predicate(item) == sendWhen) {\n                    nextItem = item\n
                    nextState = 1\n                    return\n                }\n            }\n            nextState = 0\n        }\n        override fun
next(): T {\n            if (nextState == -1)\n                calcNext()\n            if (nextState == 0)\n                throw NoSuchElementException()\n            val result = nextItem\n            nextItem = null\n            nextState = -
1\n            @Suppress("UNCHECKED_CAST")\n            return result as T\n        }\n        override fun
hasNext(): Boolean {\n            if (nextState == -1)\n                calcNext()\n            return nextState == 1\n        }\n    }\n}\n\n/**\n * A sequence which returns the results of applying the given [transformer] function to the values\n *
in the underlying [sequence].\n *\ninternal class TransformingSequence<T, R>\nconstructor(private val
sequence: Sequence<T>, private val transformer: (T) -> R) : Sequence<R> {\n    override fun iterator(): Iterator<R>
= object : Iterator<R> {\n        val iterator = sequence.iterator()\n        override fun next(): R {\n            return
transformer(iterator.next())\n        }\n        override fun hasNext(): Boolean {\n            return iterator.hasNext()\n
        }\n    }\n}\n\ninternal fun <E>\nflatten(iterator: (R) -> Iterator<E>): Sequence<E> {\n    return FlatteningSequence<T, R, E>(sequence,
transformer, iterator)\n}\n\n/**\n * A sequence which returns the results of applying the given [transformer]
function to the values\n * in the underlying [sequence], where the transformer function takes the index of the value
in the underlying\n * sequence along with the value itself.\n *\ninternal class TransformingIndexedSequence<T,
R>\nconstructor(private val sequence: Sequence<T>, private val transformer: (Int, T) -> R) : Sequence<R> {\n    override fun iterator(): Iterator<R> = object : Iterator<R> {\n        val iterator = sequence.iterator()\n        var index =
0\n        override fun next(): R {\n            return transformer(checkIndexOverflow(index++), iterator.next())\n
        }\n        override fun hasNext(): Boolean {\n            return iterator.hasNext()\n        }\n    }\n}\n\n/**\n * A
sequence which combines values from the underlying [sequence] with
their indices and returns them as\n * [IndexedValue] objects.\n *\ninternal class
IndexingSequence<T>\nconstructor(private val sequence: Sequence<T>) : Sequence<IndexedValue<T>> {\n    override fun iterator(): Iterator<IndexedValue<T>> = object : Iterator<IndexedValue<T>> {\n        val iterator =
sequence.iterator()\n        var index = 0\n        override fun next(): IndexedValue<T> {\n            return
IndexedValue(checkIndexOverflow(index++), iterator.next())\n        }\n        override fun hasNext(): Boolean {\n
            return iterator.hasNext()\n        }\n    }\n}\n\n/**\n * A sequence which takes the values from two parallel
underlying sequences, passes them to the given\n * [transform] function and returns the values returned by that
function. The sequence stops returning\n * values as soon as one of the underlying sequences stops returning
values.\n *\ninternal class MergingSequence<T1, T2, V>\nconstructor(\n    private val sequence1:
Sequence<T1>,\n    private val
sequence2: Sequence<T2>,\n    private val transform: (T1, T2) -> V\n) : Sequence<V> {\n    override fun iterator():
Iterator<V> = object : Iterator<V> {\n        val iterator1 = sequence1.iterator()\n        val iterator2 =

```



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sequence2.iterator()\n    override fun next(): V {\n        return transform(iterator1.next(), iterator2.next())\n    }\n\n    override fun hasNext(): Boolean {\n        return iterator1.hasNext() && iterator2.hasNext()\n    }\n}\n\ninternal class FlatteningSequence<T, R, E>\nconstructor(\n    private val sequence: Sequence<T>,\n    private val transformer: (T) -> R,\n    private val iterator: (R) -> Iterator<E>\n) : Sequence<E> {\n    override fun\n    iterator(): Iterator<E> = object : Iterator<E> {\n        val iterator = sequence.iterator()\n        var itemIterator:\n        Iterator<E>? = null\n\n        override fun next(): E {\n            if (!ensureItemIterator())\n                throw\n                NoSuchElementException()\n            return itemIterator!!.next()\n        }\n\n        override fun hasNext(): Boolean {\n            return ensureItemIterator()\n        }\n\n        private fun\n        ensureItemIterator(): Boolean {\n            if (itemIterator?.hasNext() == false)\n                itemIterator = null\n            while (itemIterator == null) {\n                if (!iterator.hasNext())\n                    return false\n            } else {\n                val element = iterator.next()\n                val nextItemIterator = iterator(transformer(element))\n            }\n            if (nextItemIterator.hasNext())\n                itemIterator = nextItemIterator\n            return true\n        }\n    }\n}\n\ninternal fun <T, C, R> flatMapIndexed(source:\nSequence<T>, transform: (Int, T) -> C, iterator: (C) -> Iterator<R>): Sequence<R> =\nsequence {\n    var\n    index = 0\n    for (element in source) {\n        val result = transform(checkIndexOverflow(index++), element)\n        yieldAll(iterator(result))\n    }\n}\n\n/**\n * A sequence that supports drop(n) and take(n) operations\n */\ninternal interface\nDropTakeSequence<T> : Sequence<T> {\n    fun drop(n: Int): Sequence<T>\n    fun take(n: Int):\nSequence<T>\n}\n\n/**\n * A sequence that skips [startIndex] values from the underlying [sequence]\n * and stops\n returning values right before [endIndex], i.e. stops at `endIndex - 1`\n */\ninternal class SubSequence<T>(\n    private val sequence: Sequence<T>,\n    private val startIndex: Int,\n    private val endIndex: Int\n) : Sequence<T>,\nDropTakeSequence<T> {\n    init {\n        require(startIndex >= 0) { \"startIndex should be non-negative, but is\n        $startIndex\" }\n        require(endIndex >= 0) { \"endIndex should be non-negative, but is\n        $endIndex\" }\n        require(endIndex >= startIndex) { \"endIndex should be not less than\n        startIndex, but was $endIndex < $startIndex\" }\n    }\n\n    private val count: Int get() = endIndex - startIndex\n\n    override fun drop(n: Int): Sequence<T> = if\n(n >= count) emptySequence() else SubSequence(sequence, startIndex + n,\nendIndex)\n\n    override fun take(n: Int):\nSequence<T> = if (n >= count) this else SubSequence(sequence, startIndex,\nstartIndex + n)\n\n    override fun\n    iterator() = object : Iterator<T> {\n        val iterator = sequence.iterator()\n        var position = 0\n        //\n        Shouldn't be called from constructor to avoid premature iteration\n        private fun drop() {\n            while (position\n            < startIndex && iterator.hasNext())\n                iterator.next()\n            position++\n        }\n\n        override fun hasNext(): Boolean {\n            drop()\n            return (position < endIndex) && iterator.hasNext()\n        }\n\n        override fun next(): T {\n            drop()\n            if (position >= endIndex)\n                throw\n                NoSuchElementException()\n            position++\n            return iterator.next()\n        }\n    }\n}\n\n/**\n * A sequence that returns at most [count]\n values from the underlying [sequence], and stops returning values\n * as soon as that count is reached.\n */\ninternal\n class TakeSequence<T>(\n    private val sequence: Sequence<T>,\n    private val count: Int\n) : Sequence<T>,\nDropTakeSequence<T> {\n    init {\n        require(count >= 0) { \"count must be non-negative, but was\n        $count.\" }\n    }\n\n    override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else\nSubSequence(sequence, n, count)\n\n    override fun take(n: Int): Sequence<T> = if (n >= count) this else\nTakeSequence(sequence, n)\n\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        var left =\n        count\n        val iterator = sequence.iterator()\n\n        override fun next(): T {\n            if (left == 0)\n                throw\n                NoSuchElementException()\n            left--\n            return iterator.next()\n        }\n\n        override fun hasNext(): Boolean {\n            return left > 0 && iterator.hasNext()\n        }\n    }\n}\n\n/**\n * A sequence that returns values from the underlying [sequence] while the\n [predicate] function\n returns `true`, and stops returning values once the function returns `false`\n for the next element.\n */\ninternal\n class TakeWhileSequence<T>\nconstructor(\n    private val sequence: Sequence<T>,\n    private val predicate: (T) -\n    > Boolean\n) : Sequence<T> {\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        val iterator =\n        sequence.iterator()\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n        var nextItem: T?\n    }\n}

```

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= null\n\n    private fun calcNext() {\n        if (iterator.hasNext()) {\n            val item = iterator.next()\n            if (predicate(item)) {\n                nextState = 1\n                nextItem = item\n                return\n            }\n            nextState = 0\n        }\n        override fun next(): T {\n            if (nextState == -1)\n                calcNext() // will change nextState\n            if (nextState == 0)\n                throw NoSuchElementException()\n            @Suppress("UNCHECKED_CAST")\n                val result = nextItem as T\n                // Clean next to avoid\n                keeping reference on yielded instance\n                nextItem = null\n                nextState = -1\n                return result\n        }\n        override fun hasNext(): Boolean {\n            if (nextState == -1)\n                calcNext() // will change\n                nextState\n            return nextState == 1\n        }\n    }\n\n    /**\n     * A sequence that skips the specified number of\n     * values from the underlying [sequence] and returns\n     * all values after that.\n     */\n    internal class DropSequence<T>(\n        private val sequence: Sequence<T>,\n        private val count: Int\n    ) : Sequence<T>, DropTakeSequence<T> {\n        init\n        {\n            require(count >= 0) { "\"count must be non-negative, but was $count.\" }\n        }\n        override fun drop(n: Int):\n        Sequence<T> = (count + n).let { n1 -> if (n1 < 0) DropSequence(this, n) else DropSequence(sequence, n1) }\n        override fun take(n: Int): Sequence<T> = (count + n).let { n1 -> if (n1 < 0) TakeSequence(this, n) else\n        SubSequence(sequence, count, n1) }\n        override fun iterator(): Iterator<T> = object : Iterator<T> {\n            val\n            iterator = sequence.iterator()\n            var left = count\n            // Shouldn't be called from constructor to avoid\n            premature iteration\n            private fun drop() {\n                while (left > 0 && iterator.hasNext()) {\n                    iterator.next()\n                    left--\n                }\n            }\n            override fun next(): T {\n                drop()\n                return\n                iterator.next()\n            }\n            override fun hasNext(): Boolean {\n                drop()\n                return iterator.hasNext()\n            }\n        }\n    }\n\n    /**\n     * A sequence\n     * that skips the values from the underlying [sequence] while the given [predicate] returns `true` and returns\n     * all\n     * values after that.\n     */\n    internal class DropWhileSequence<T>(\n        private val sequence:\n        Sequence<T>,\n        private val predicate: (T) -> Boolean\n    ) : Sequence<T> {\n        override fun iterator():\n        Iterator<T> = object : Iterator<T> {\n            val iterator = sequence.iterator()\n            var dropState: Int = -1 // -1 for not\n            dropping, 1 for nextItem, 0 for normal iteration\n            var nextItem: T? = null\n            private fun drop() {\n                while (iterator.hasNext()) {\n                    val item = iterator.next()\n                    if (!predicate(item)) {\n                        nextItem = item\n                        dropState = 1\n                        return\n                    }\n                    dropState = 0\n                }\n            }\n            override fun next(): T {\n                if (dropState == -1)\n                    drop()\n                if (dropState == 1)\n                    {\n                        @Suppress("UNCHECKED_CAST")\n                            val result = nextItem as T\n                            nextItem =\n                            null\n                            dropState = 0\n                            return result\n                    }\n                return iterator.next()\n            }\n            override fun hasNext(): Boolean {\n                if (dropState == -1)\n                    drop()\n                return dropState == 1 ||\n                iterator.hasNext()\n            }\n        }\n    }\n\n    internal class DistinctSequence<T, K>(\n        private val source: Sequence<T>,\n        private val keySelector: (T) -> K\n    ) : Sequence<T> {\n        override fun iterator(): Iterator<T> =\n        DistinctIterator(source.iterator(), keySelector)\n    }\n\n    private class DistinctIterator<T, K>(\n        private val source:\n        Iterator<T>,\n        private val keySelector: (T) -> K\n    ) : AbstractIterator<T>() {\n        private val observed =\n        HashSet<K>()\n        override fun computeNext() {\n            while (source.hasNext()) {\n                val next =\n                source.next()\n                val key = keySelector(next)\n                if (observed.add(key))\n                    {\n                        setNext(next)\n                        return\n                    }\n                done()\n            }\n        }\n    }\n\n    private class\n        GeneratorSequence<T : Any>(\n        private val getInitialValue: () -> T?,\n        private val getNextValue: (T) -> T?\n    ) : Sequence<T> {\n        override fun iterator(): Iterator<T> = object : Iterator<T> {\n            var nextItem: T? = null\n            var\n            nextState: Int = -2 // -2 for initial unknown, -1 for next unknown, 0 for done, 1 for continue\n            private fun\n            calcNext() {\n                nextItem = if (nextState == -2) getInitialValue() else getNextValue(nextItem!)\n                nextState = if (nextItem == null) 0 else 1\n            }\n            override fun next(): T {\n                if (nextState < 0)\n                    calcNext()\n                if (nextState == 0)\n                    throw NoSuchElementException()\n                val result =\n                nextItem as T\n                // Do not clean nextItem (to avoid keeping reference on yielded instance) -- need to keep\n                state for\n                getNextValue\n                nextState = -1\n                return result\n            }\n            override fun hasNext(): Boolean {\n                if (nextState < 0)\n                    calcNext()\n                return nextState == 1\n            }\n        }\n    }\n\n    /**\n     * Returns a

```

```

wrapper sequence that provides values of this sequence, but ensures it can be iterated only one time.\n *\n * The
operation is _intermediate_ and _stateless_.\n *\n * [IllegalStateException] is thrown on iterating the returned
sequence for the second time and the following times.\n *\n */\npublic fun <T> Sequence<T>.constrainOnce():
Sequence<T> {\n // as? does not work in js\n //return this as? ConstrainedOnceSequence<T> ?:\n
ConstrainedOnceSequence(this)\n return if (this is ConstrainedOnceSequence<T>) this else
ConstrainedOnceSequence(this)\n}\n\n/**\n * Returns a sequence which invokes the function to calculate the next
value on each iteration until the function returns `null`.\n *\n * The returned sequence is constrained
to be iterated only once.\n *\n * @see constrainOnce\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequence\n */\npublic fun <T : Any>
generateSequence(nextFunction: () -> T?): Sequence<T> {\n return GeneratorSequence(nextFunction, {
nextFunction() }).constrainOnce()\n}\n\n/**\n * Returns a sequence defined by the starting value [seed] and the
function [nextFunction],\n * which is invoked to calculate the next value based on the previous one on each
iteration.\n *\n * The sequence produces values until it encounters first `null` value.\n * If [seed] is `null`, an empty
sequence is produced.\n *\n * The sequence can be iterated multiple times, each time starting with [seed].\n *\n *
@see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithSeed\n */\n@kotlin.internal.LowPriorityInOverloadResolution\npublic fun <T : Any> generateSequence(seed: T?,
nextFunction: (T) -> T?): Sequence<T>
=\n if (seed == null)\n EmptySequence\n else\n GeneratorSequence({ seed }, nextFunction)\n\n/**\n * Returns a sequence defined by the function [seedFunction], which is invoked to produce the starting value,\n * and
the [nextFunction], which is invoked to calculate the next value based on the previous one on each iteration.\n *\n * The sequence produces values until it encounters first `null` value.\n * If [seedFunction] returns `null`, an empty
sequence is produced.\n *\n * The sequence can be iterated multiple times.\n *\n * @see
kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithLazySeed\n */\npublic fun <T : Any>
generateSequence(seedFunction: () -> T?, nextFunction: (T) -> T?): Sequence<T> =\n
GeneratorSequence(seedFunction, nextFunction)\n\n"/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("PreconditionsKt")\n\npackage
kotlin\n\nimport kotlin.contracts.contract\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is false.\n *\n * @sample samples.misc.Preconditions.failRequireWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic
inline fun require(value: Boolean): Unit {\n contract {\n returns() implies value\n }\n require(value) {
"Failed requirement." }\n}\n\n/**\n * Throws an [IllegalArgumentException] with the result of calling
[lazyMessage] if the [value] is false.\n *\n * @sample samples.misc.Preconditions.failRequireWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun require(value: Boolean, lazyMessage: () -> Any): Unit {\n
contract {\n returns() implies value\n }\n if (!value) {\n val message = lazyMessage()\n throw
IllegalArgumentException(message.toString())\n }\n}\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is null. Otherwise returns the not null value.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?): T {\n contract {\n
returns() implies (value != null)\n }\n return requireNotNull(value) { "Required value was null." }\n}\n\n/**\n * Throws an [IllegalArgumentException] with the result of calling [lazyMessage] if the [value] is null. Otherwise\n *
returns the not null value.\n *\n * @sample samples.misc.Preconditions.failRequireNotNullWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?, lazyMessage: () -> Any): T
{\n contract {\n returns() implies (value != null)\n }\n if (value == null) {\n val message =
lazyMessage()\n throw IllegalArgumentException(message.toString())\n } else {\n return value\n
}\n}\n\n/**\n * Throws an [IllegalStateException] if the [value] is false.\n *\n */

```

```

* @sample samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@kotlin.internal.InlineOnly\npublic
inline fun check(value: Boolean): Unit {\n  contract {\n    returns() implies value\n  }\n  check(value) {\n
  \"Check failed.\" }\n}\n\n/**\n * Throws an [IllegalStateException] with the result of calling [lazyMessage] if the
[value] is false.\n *\n * @sample samples.misc.Preconditions.failCheckWithLazyMessage\n
*\n@kotlin.internal.InlineOnly\npublic inline fun check(value: Boolean, lazyMessage: () -> Any): Unit {\n
contract {\n  returns() implies value\n  }\n  if (!value) {\n    val message = lazyMessage()\n    throw
IllegalStateException(message.toString())\n  }\n}\n\n/**\n * Throws an [IllegalStateException] if the [value] is
null. Otherwise\n * returns the not null value.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T :
Any> checkNotNull(value: T?): T {\n  contract {\n
    returns() implies (value != null)\n  }\n  return checkNotNull(value) { \"Required value was null.\"
}\n}\n\n/**\n * Throws an [IllegalStateException] with the result of calling [lazyMessage] if the [value] is null.
Otherwise\n * returns the not null value.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T :
Any> checkNotNull(value: T?, lazyMessage: () -> Any): T {\n  contract {\n    returns() implies (value != null)\n
  }\n  if (value == null) {\n    val message = lazyMessage()\n    throw
IllegalStateException(message.toString())\n  } else {\n    return value\n  }\n}\n\n/**\n * Throws an
[IllegalStateException] with the given [message].\n *\n * @sample samples.misc.Preconditions.failWithError\n
*\n@kotlin.internal.InlineOnly\npublic inline fun error(message: Any): Nothing = throw
IllegalStateException(message.toString())\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n *\n@npackage kotlin.collections\n\n// NOTE: THIS FILE IS
AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js.*\nimport
primitiveArrayConcat\nimport withType\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n *
Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds
of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n *\npublic actual fun <T>
Array<out T>.elementAt(index: Int): T {\n  return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n
*\n * @sample samples.collections.Collections.Elements.elementAt\n *\npublic actual fun
ByteArray.elementAt(index: Int): Byte {\n  return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n *\npublic actual fun ShortArray.elementAt(index: Int): Short
{\n  return elementAtOrElse(index) { throw IndexOutOfBoundsException(\"index: $index, size: $size\")
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n *\npublic
actual fun IntArray.elementAt(index: Int): Int {\n  return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n\n/**\n
* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of
bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n *\npublic actual fun
LongArray.elementAt(index: Int): Long {\n  return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n *\npublic actual fun FloatArray.elementAt(index: Int): Float
{\n  return elementAtOrElse(index) { throw IndexOutOfBoundsException(\"index: $index, size: $size\")
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is

```


numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n

```
*\n@SinceKotlin("1.4")\n@library("arrayDeepEquals")\npublic actual infix fun <T> Array<out T>?.contentDeepEquals(other: Array<out T>?): Boolean {\n    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n */\n\n*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual fun <T> Array<out T>.contentDeepHashCode(): Int {\n    return this.contentDeepHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n */\n\n*\n@SinceKotlin("1.4")\n@library("arrayDeepHashCode")\npublic actual fun <T> Array<out T>?.contentDeepHashCode(): Int {\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `"[...]"` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n */\n\n*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual fun <T> Array<out T>.contentDeepToString(): String {\n    return this.contentDeepToString()\n}\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `"[...]"` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n */\n\n*\n@SinceKotlin("1.4")\n@library("arrayDeepToString")\npublic actual fun <T> Array<out T>?.contentDeepToString(): String {\n    definedExternally\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * \n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun <T> Array<out T>.contentEquals(other: Array<out T>): Boolean {\n    return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * \n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun ByteArray.contentEquals(other: ByteArray): Boolean {\n    return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * \n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun ShortArray.contentEquals(other: ShortArray): Boolean {\n    return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * \n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n */\n\n*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun IntArray.contentEquals(other: IntArray): Boolean {\n    return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * \n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals]
```

function.
 * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.
 *
 @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 @SinceKotlin("1.1")
 @DeprecatedSinceKotlin(hiddenSince = "1.4")
 public actual infix fun LongArray.contentEquals(other: LongArray): Boolean
 {
 return this.contentEquals(other)
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.
 *
 @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 @SinceKotlin("1.1")
 @DeprecatedSinceKotlin(hiddenSince = "1.4")
 public actual infix fun FloatArray.contentEquals(other: FloatArray): Boolean
 {
 return this.contentEquals(other)
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 @SinceKotlin("1.1")
 @DeprecatedSinceKotlin(hiddenSince = "1.4")
 public actual infix fun DoubleArray.contentEquals(other: DoubleArray): Boolean
 {
 return this.contentEquals(other)
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 @SinceKotlin("1.1")
 @DeprecatedSinceKotlin(hiddenSince = "1.4")
 public actual infix fun BooleanArray.contentEquals(other: BooleanArray): Boolean
 {
 return this.contentEquals(other)
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 @SinceKotlin("1.1")
 @DeprecatedSinceKotlin(hiddenSince = "1.4")
 public actual infix fun CharArray.contentEquals(other: CharArray): Boolean
 {
 return this.contentEquals(other)
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @SinceKotlin("1.4")
 @library("arrayEquals")
 public actual infix fun <T> Array<out T>?.contentEquals(other: Array<out T>?): Boolean
 {
 definedExternally
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @SinceKotlin("1.4")
 @library("arrayEquals")
 public actual infix fun ByteArray?.contentEquals(other: ByteArray?): Boolean
 {
 definedExternally
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @SinceKotlin("1.4")
 @library("arrayEquals")
 public actual infix fun ShortArray?.contentEquals(other: ShortArray?): Boolean
 {
 definedExternally
 }
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 * The elements are compared for equality with the [equals][Any.equals] function.
 * For floating point numbers it means that `NaN` is equal to itself and
 `-0.0` is not equal to `0.0`.
 *
 @SinceKotlin("1.4")
 @library("arrayEquals")
 public actual infix fun IntArray?.contentEquals(other: IntArray?): Boolean
 {
 definedExternally
 }
 Returns `true` if the two specified arrays are

```

*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal
to `0.0`.\n */\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic actual infix fun
LongArray?.contentEquals(other: LongArray?): Boolean {\n    definedExternally\n}\n\n/**\n * Returns `true` if the
two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements
in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For
floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*/\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic actual infix fun FloatArray?.contentEquals(other:
FloatArray?): Boolean {\n    definedExternally\n}\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it
means that `NaN`
is equal to itself and `-0.0` is not equal to `0.0`.\n */\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic
actual infix fun DoubleArray?.contentEquals(other: DoubleArray?): Boolean {\n    definedExternally\n}\n\n/**\n *
Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of
the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals]
function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*/\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic actual infix fun BooleanArray?.contentEquals(other:
BooleanArray?): Boolean {\n    definedExternally\n}\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
* The elements are compared for equality with the [equals][Any.equals] function.\n
* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*/\n@SinceKotlin("1.4")\n@library("arrayEquals")\npublic actual infix fun CharArray?.contentEquals(other:
CharArray?): Boolean {\n    definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array
as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun <T>
Array<out T>.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based
on the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
ByteArray.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on
the contents of this array as
if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
ShortArray.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on
the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
IntArray.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on
the contents of this array as if it is [List].\n */\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
LongArray.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based
on the contents of this array as if it is [List].\n */\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
FloatArray.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on
the contents of this array as if it is [List].\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
DoubleArray.contentHashCode(): Int {\n    return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based

```


on the contents of this array as if it is [List].\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun BooleanArray.contentHashCode(): Int {\n return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun CharArray.contentHashCode(): Int {\n return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun <T> Array<out T>?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun ByteArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun ShortArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun IntArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun LongArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun FloatArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun DoubleArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun BooleanArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *\n@SinceKotlin(\n"1.4\n")\n@library(\n"arrayHashCode\n")\npublic actual fun CharArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun <T> Array<out T>.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun ByteArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun ShortArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun IntArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated(\n"Use Kotlin compiler 1.4 to avoid deprecation warning.\n")\n@SinceKotlin(\n"1.1\n")\n@DeprecatedSinceKotlin(hiddenSince = \n"1.4\n")\npublic actual fun LongArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *

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samples.collections.Arrays.ContentOperations.contentToString\n */\n@Deprecated(\n"Use Kotlin compiler 1.4 to
avoid deprecation warning.\n")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun FloatArray.contentToString(): String {\n    return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n */\n@Deprecated(\n"Use
Kotlin compiler 1.4 to avoid deprecation
warning.\n")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
DoubleArray.contentToString(): String {\n    return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n */\n@Deprecated(\n"Use Kotlin compiler 1.4 to
avoid deprecation warning.\n")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun BooleanArray.contentToString(): String {\n    return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n */\n@Deprecated(\n"Use Kotlin compiler 1.4 to
avoid deprecation warning.\n")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun CharArray.contentToString():
String {\n    return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the
specified array as if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun <T> Array<out T>?.contentToString():
String {\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ByteArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ShortArray?.contentToString():
String {\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun IntArray?.contentToString(): String {\n
definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun LongArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun FloatArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun DoubleArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun BooleanArray?.contentToString():
String {\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun CharArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Copies this array or
its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the
[destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param
destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by

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default. \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
    actual inline fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset: Int = 0, startIndex: Int = 0,
    endIndex: Int = size): Array<T> {\n    arrayCopy(this, destination, destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**
    * Copies this array or its subrange into the [destination] array and returns that array. \n
    * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with
    the destination range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in
    the [destination] array to copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to
    copy, 0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n
    * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex]
    or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws
    IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified
    [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the
    [destination] array. \n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun ByteArray.copyInto(destination: ByteArray, destinationOffset: Int = 0,
    startIndex: Int = 0, endIndex: Int = size): ByteArray {\n    arrayCopy(this.unsafeCast<Array<Byte>>(),
    destination.unsafeCast<Array<Byte>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**
    * Copies this array or its subrange into the [destination] array and returns that array. \n
    * \n * It's allowed to pass the
    same array in the [destination] and even specify the subrange so that it overlaps with the destination
    range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in the
    [destination] array to copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy,
    0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n
    * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
    range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the
    subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index
    is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int =
    0, startIndex: Int =
    0, endIndex: Int = size): ShortArray {\n    arrayCopy(this.unsafeCast<Array<Short>>(),
    destination.unsafeCast<Array<Short>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**
    * Copies this array or its subrange into the [destination] array and returns that array. \n
    * \n * It's allowed to pass the
    same array in the [destination] and even specify the subrange so that it overlaps with the destination range. \n * \n
    * @param destination the array to copy to. \n * @param destinationOffset the position in the [destination] array to
    copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default. \n *
    @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws
    IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
    array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange
    doesn't
    fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the
    [destination] array indices range. \n * \n * @return the [destination] array. \n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): IntArray {\n    arrayCopy(this.unsafeCast<Array<Int>>(),
destination.unsafeCast<Array<Int>>(), destinationOffset, startIndex, endIndex)\n    return destination}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n */\n*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun LongArray.copyInto(destination: LongArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): LongArray {\n    arrayCopy(this.unsafeCast<Array<Long>>(),
destination.unsafeCast<Array<Long>>(), destinationOffset, startIndex,
endIndex)\n    return destination}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n */\n*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): FloatArray {\n    arrayCopy(this.unsafeCast<Array<Float>>(),
destination.unsafeCast<Array<Float>>(), destinationOffset, startIndex, endIndex)\n    return destination}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n */\n*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun DoubleArray.copyInto(destination: DoubleArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): DoubleArray {\n    arrayCopy(this.unsafeCast<Array<Double>>(),
destination.unsafeCast<Array<Double>>(), destinationOffset, startIndex, endIndex)\n    return destination}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n *

```

\n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("\nACTUAL_FUNCTION_WITH_DEFAULT\n_ARGUMENTS")\npublic
```

```
actual inline fun BooleanArray.copyInto(destination: BooleanArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): BooleanArray {\n    arrayCopy(this.unsafeCast<Array<Boolean>>(),\n    destination.unsafeCast<Array<Boolean>>(), destinationOffset, startIndex, endIndex)\n    return
```

```
destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n *
```

It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n *

@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or

[endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws

IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified

[destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the

[destination] array.\n

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("\nACTUAL_FUNCTION_WITH_DEFAULT\n_ARGUMENTS")\npublic actual inline fun CharArray.copyInto(destination: CharArray, destinationOffset: Int = 0,
```

```
startIndex: Int = 0, endIndex: Int = size): CharArray {\n    arrayCopy(this.unsafeCast<Array<Char>>(),
```

```
destination.unsafeCast<Array<Char>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n
```

```
* Returns new array which is a copy of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.CopyOfOperations.copyOfOf\n * \n @Suppress("\nACTUAL_WITHOUT_EXPECT",
```

```
\nNOTHING_TO_INLINE")\npublic actual inline fun <T> Array<out
```

```
T>.copyOf(): Array<T> {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of
```

```
the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@Suppress("\nNOTHING_TO_INLINE")\npublic actual inline fun ByteArray.copyOfOf(): ByteArray {\n    return
```

```
this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.CopyOfOperations.copyOfOf\n * \n @Suppress("\nNOTHING_TO_INLINE")\npublic
```

```
actual inline fun ShortArray.copyOfOf(): ShortArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns new
```

```
array which is a copy of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.CopyOfOperations.copyOfOf\n * \n @Suppress("\nNOTHING_TO_INLINE")\npublic
```

```
actual inline fun IntArray.copyOfOf(): IntArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns new array
```

```
which is a copy of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\npublic actual fun LongArray.copyOfOf(): LongArray {\n    return withType("\nLongArray",
```

```
this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.CopyOfOperations.copyOfOf\n * \n @Suppress("\nNOTHING_TO_INLINE")\npublic
```

```
actual inline fun FloatArray.copyOfOf(): FloatArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns new
```

```
array which is a copy of the original array.\n * \n * @sample
```

```
samples.collections.Arrays.CopyOfOperations.copyOfOf\n * \n @Suppress("\nNOTHING_TO_INLINE")\npublic
```

```
actual inline fun DoubleArray.copyOfOf(): DoubleArray {\n    return this.asDynamic().slice()\n}\n\n/**\n * Returns
```

```
new array which is a copy of the original array.\n * \n * @sample
```

```

samples.collections.Arrays.CopyOfOperations.copyOfOf\n *\npublic actual fun BooleanArray.copyOf():
BooleanArray {\n  return withType(\\"BooleanArray\\", this.asDynamic().slice())\n}\n\n/**\n * Returns new array
which is a copy
of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n *\npublic actual
fun CharArray.copyOf(): CharArray {\n  return withType(\\"CharArray\\", this.asDynamic().slice())\n}\n\n/**\n *
Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either
truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the size of the
original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the
original array, the extra elements in the copy array are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
ByteArray.copyOf(newSize: Int): ByteArray {\n  require(newSize >= 0) { \\"Invalid new array size: $newSize.\\
"}\n  return fillFrom(this, ByteArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original
array, resized to the
given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n * \n * -
If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n * - If
[newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero
values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
ShortArray.copyOf(newSize: Int): ShortArray {\n  require(newSize >= 0) { \\"Invalid new array size: $newSize.\\
"}\n  return fillFrom(this, ShortArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original
array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if
necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the
[newSize].\n * - If [newSize] is greater than the size of the original array, the extra
elements in the copy array are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
IntArray.copyOf(newSize: Int): IntArray {\n  require(newSize >= 0) { \\"Invalid new array size: $newSize.\\
"}\n  return fillFrom(this, IntArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original
array,
resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n
* \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n
* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled
with zero values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic
actual fun LongArray.copyOf(newSize: Int): LongArray {\n  require(newSize >= 0) { \\"Invalid new array size:
$newSize.\\
"}\n  return withType(\\"LongArray\\",
arrayCopyResize(this, newSize, 0L))\n}\n\n/**\n * Returns new array which is a copy of the original array,
resized
to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if necessary.\n *
\n * - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n
* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled
with zero values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic
actual fun FloatArray.copyOf(newSize: Int): FloatArray {\n  require(newSize >= 0) { \\"Invalid new array size:
$newSize.\\
"}\n  return fillFrom(this, FloatArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original
array,
resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if
necessary.\n * \n * - If [newSize] is less than the size of the
original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the
original array, the extra elements in the copy array are filled with zero values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
DoubleArray.copyOf(newSize: Int): DoubleArray {\n  require(newSize >= 0) { \\"Invalid new array size:
$newSize.\\
"}\n  return fillFrom(this, DoubleArray(newSize))\n}\n\n/**\n * Returns new array which is a copy of
the original array,
resized to the given [newSize].\n * The copy is either truncated or padded at the end with `false`
values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is
truncated to the

```

```

[newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are
filled with `false` values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic
actual fun BooleanArray.copyOf(newSize: Int): BooleanArray {\n  require(newSize >= 0) { \"Invalid new array
size: $newSize.\" }\n  return withType(\"BooleanArray\", arrayCopyResize(this, newSize, false))\n}\n\n/**\n *
Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either
truncated or padded at the end with null char (`\u0000`) values if necessary.\n * \n * - If [newSize] is less than the
size of the original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of
the original array, the extra elements in the copy array are filled with null char (`\u0000`) values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n *\npublic actual fun
CharArray.copyOf(newSize: Int): CharArray {\n  require(newSize >= 0) { \"Invalid new array size: $newSize.\"
}\n  return withType(\"CharArray\", fillFrom(this, CharArray(newSize)))\n}\n\n/**\n * Returns
new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or
padded at the end with `null` values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the
copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra
elements in the copy array are filled with `null` values.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.resizingCopyOf\n
*\n@Suppress(\"ACTUAL_WITHOUT_EXPECT\")\npublic actual fun <T> Array<out T>.copyOf(newSize: Int):
Array<T?> {\n  require(newSize >= 0) { \"Invalid new array size: $newSize.\" }\n  return arrayCopyResize(this,
newSize, null)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n
*\n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive)
to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@Suppress(\"ACTUAL_WITHOUT_EXPECT\")\npublic actual fun <T> Array<out
T>.copyOfRange(fromIndex: Int, toIndex: Int): Array<T> {\n  AbstractList.checkRangeIndexes(fromIndex,
toIndex, size)\n  return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/**\n * Returns a new array which is a
copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to
copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic actual fun
ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n
return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
@param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic actual fun
ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  return this.asDynamic().slice(fromIndex,
toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n
*\n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to
copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *\npublic actual fun IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  return this.asDynamic().slice(fromIndex,
toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n
*\n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to

```

```

copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic
actual fun LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("LongArray",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n
 * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the
start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic actual fun
FloatArray.copyOfRange(fromIndex: Int, toIndex: Int): FloatArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return this.asDynamic().slice(fromIndex,
toIndex)\n}\n\n/**\n
 * Returns a new array which is a copy of the specified range of the original array.\n * \n *
@param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to
copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
size of this array.\n
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic actual fun
DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return this.asDynamic().slice(fromIndex,
toIndex)\n}\n\n/**\n
 * Returns a new array which is a copy of the specified range of the original array.\n * \n *
@param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to
copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic
actual fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("BooleanArray",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n
 * Returns a new array which
is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to
copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic actual fun
CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("CharArray",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n
 * Fills this array or its subrange with the specified
[element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param
toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size
of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\npublic actual fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n
 * Fills this array or its subrange with the specified [element] value.\n * \n *
@param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\npublic actual fun ByteArray.fill(element: Byte, fromIndex:
Int = 0, toIndex: Int = size): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n
this.asDynamic().fill(element, fromIndex, toIndex);\n}\n\n/**\n
 * Fills this array or its subrange with the specified

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[element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param
toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified
[element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param
toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun LongArray.fill(element: Long, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param

```

fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to

fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

```

*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun CharArray.fill(element: Char, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n this.asDynamic().fill(element, fromIndex,
toIndex);\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n
*\n@Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE")\npublic actual inline operator
fun <T> Array<out T>.plus(element: T): Array<T> {\n return
this.asDynamic().concat(arrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original
array and then the given [element].\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline operator fun ByteArray.plus(element: Byte): ByteArray {\n return
plus(byteArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then the
given [element].\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun
ShortArray.plus(element: Short): ShortArray {\n return plus(shortArrayOf(element))\n}\n\n/**\n * Returns an
array containing all elements of the original array and then the given [element].\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun IntArray.plus(element: Int):
IntArray {\n return plus(intArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the
original array and then the given [element].\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline
operator fun LongArray.plus(element: Long): LongArray {\n return plus(longArrayOf(element))\n}\n\n/**\n *
Returns an array containing all elements of the original array and then the given
[element].\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun
FloatArray.plus(element: Float): FloatArray {\n return plus(floatArrayOf(element))\n}\n\n/**\n * Returns an array
containing all elements of the original array and then the given [element].\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun DoubleArray.plus(element:
Double): DoubleArray {\n return plus(doubleArrayOf(element))\n}\n\n/**\n * Returns an array containing all
elements of the original array and then the given [element].\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline operator fun BooleanArray.plus(element: Boolean): BooleanArray {\n return
plus(booleanArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the original array and then
the given [element].\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun
CharArray.plus(element: Char): CharArray {\n return plus(charArrayOf(element))\n}\n\n/**\n * Returns
an array containing all elements of the original array and then all elements of the given [elements] collection.\n
*\n@Suppress("ACTUAL_WITHOUT_EXPECT")\npublic actual operator fun <T> Array<out T>.plus(elements:
Collection<T>): Array<T> {\n return arrayPlusCollection(this, elements)\n}\n\n/**\n * Returns an array
containing all elements of the original array and then all elements of the given [elements] collection.\n *\npublic
actual operator fun ByteArray.plus(elements: Collection<Byte>): ByteArray {\n return
fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing
all elements of the original array and then all elements of the given [elements] collection.\n *\npublic actual
operator fun ShortArray.plus(elements: Collection<Short>): ShortArray {\n return
fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/**\n * Returns an array containing
all elements of the original array and
then all elements of the given [elements] collection.\n *\npublic actual operator fun IntArray.plus(elements:
Collection<Int>): IntArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size,
elements)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the
given [elements] collection.\n *\npublic actual operator fun LongArray.plus(elements: Collection<Long>):
LongArray {\n return arrayPlusCollection(this, elements)\n}\n\n/**\n * Returns an array containing all elements of

```

the original array and then all elements of the given [elements] collection.

```

public actual operator fun FloatArray.plus(elements: Collection<Float>): FloatArray {
    return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.

```

public actual operator fun DoubleArray.plus(elements: Collection<Double>): DoubleArray {
    return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.

```

public actual operator fun BooleanArray.plus(elements: Collection<Boolean>): BooleanArray {
    return arrayPlusCollection(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.

```

public actual operator fun CharArray.plus(elements: Collection<Char>): CharArray {
    return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE")
public actual inline operator fun <T> Array<out T>.plus(elements: Array<out T>): Array<T> {
    return this.asDynamic().concat(elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun ByteArray.plus(elements: ByteArray): ByteArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun ShortArray.plus(elements: ShortArray): ShortArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun IntArray.plus(elements: IntArray): IntArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun LongArray.plus(elements: LongArray): LongArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun FloatArray.plus(elements: FloatArray): FloatArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun DoubleArray.plus(elements: DoubleArray): DoubleArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun BooleanArray.plus(elements: BooleanArray): BooleanArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then all elements of the given [elements] array.

```

@Suppress("NOTHING_TO_INLINE")
public actual inline operator fun CharArray.plus(elements: CharArray): CharArray {
    return primitiveArrayConcat(this, elements)
}

```

* Returns an array containing all elements of the original array and then the given [element].

```

@Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE")
public actual inline fun <T> Array<out T>.plusElement(element: T): Array<T> {
    return this.asDynamic().concat(arrayOf(element))
}

```

* Sorts the array in-place.

```

@sample
samples.collections.Arrays.Sorting.sortArray

```

```

@library("primitiveArraySort")
public actual fun IntArray.sort(): Unit {
    definedExternally
}

```

* Sorts the array in-place.

```

@sample
samples.collections.Arrays.Sorting.sortArray

```

```

public actual fun LongArray.sort(): Unit {
    @Suppress("DEPRECATION")
    if (size > 1) sort { a: Long, b: Long -> a.compareTo(b) }
}

```

* Sorts the array in-place.

```

@sample
samples.collections.Arrays.Sorting.sortArray

```

```

@library("primitiveArraySort")
public actual fun

```

```

ByteArray.sort(): Unit {
    definedExternally
}

/**
 * Sorts the array in-place.
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortArray
 */
@library("primitiveArraySort")
public actual fun
ShortArray.sort(): Unit {
    definedExternally
}

/**
 * Sorts the array in-place.
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortArray
 */
@library("primitiveArraySort")
public actual fun
DoubleArray.sort(): Unit {
    definedExternally
}

/**
 * Sorts the array in-place.
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortArray
 */
@library("primitiveArraySort")
public
actual fun
FloatArray.sort(): Unit {
    definedExternally
}

/**
 * Sorts the array in-place.
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortArray
 */
@library("primitiveArraySort")
public actual fun
CharArray.sort(): Unit {
    definedExternally
}

/**
 * Sorts the array in-place according to the natural order
 * of its elements.
 *
 * The sort is _stable_. It means that equal elements preserve their order relative to each other
 * after sorting.
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortArrayOfComparable
 */
public actual fun
<T : Comparable<T>> Array<out T>.sort(): Unit {
    if (size > 1) sortArray(this)
}

/**
 * Sorts the array in-
 * place according to the order specified by the given [comparison] function.
 *
 * The sort is _stable_. It means that
 * equal elements preserve their order relative to each other after sorting.
 *
 * @Deprecated("Use sortWith instead",
 * ReplaceWith("this.sortWith(Comparator(comparison))"))
 */
@DeprecatedSinceKotlin(warningSince
    = "1.6")
public fun <T> Array<out T>.sort(comparison: (a: T, b: T) -> Int): Unit {
    if (size > 1)
    sortArrayWith(this, comparison)
}

/**
 * Sorts a range in the array in-place.
 *
 * The sort is _stable_. It
 * means that equal elements preserve their order relative to each other after sorting.
 *
 * @param fromIndex the
 * start of the range (inclusive) to sort, 0 by default.
 *
 * @param toIndex the end of the range (exclusive) to sort, size
 * of this array by default.
 *
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]
 * is greater than the size of this array.
 *
 * @throws IllegalArgumentException if [fromIndex] is greater than
 * [toIndex].
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public
actual fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size):
    Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    sortArrayWith(this, fromIndex, toIndex,
        naturalOrder())
}

/**
 * Sorts a range in the array in-place.
 *
 * @param fromIndex the start of the range
 * (inclusive) to sort, 0 by default.
 *
 * @param toIndex the end of the range (exclusive) to sort, size of this array by
 * default.
 *
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
 * the size of this array.
 *
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public
actual fun
ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    val subarray =
    this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ByteArray>()
    subarray.sort()
}

/**
 * Sorts a
 * range
 * in the array in-place.
 *
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 *
 * @param
 * toIndex the end of the range (exclusive) to sort, size of this array by default.
 *
 * @throws
 * IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 *
 * @throws
 * IllegalArgumentException if [fromIndex] is greater than [toIndex].
 *
 * @sample
 * samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public
actual fun
ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    val subarray =
    this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ShortArray>()
    subarray.sort()
}

/**
 * Sorts a
 * range in the array in-place.
 *
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 *
 * @param
 * toIndex the end of the range (exclusive)
 * to sort, size of this array by default.
 *
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
 * or [toIndex] is greater than the size of this array.
 *
 * @throws IllegalArgumentException if [fromIndex] is greater

```

```

than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<IntArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size
of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    sortArrayWith(this.unsafeCast<Array<Long>>(),
fromIndex, toIndex, naturalOrder())\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex
the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort,
size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
[toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<FloatArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<DoubleArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts
a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<CharArray>()\n    subarray.sort()\n}\n\n/**\n *
* Sorts the array in-place according to the order specified by the given [comparison] function.\n
*\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sort(noinline comparison: (a: Byte, b: Byte) -> Int): Unit {\n    asDynamic().sort(comparison)\n}\n\n/**\n
* Sorts the array in-place according to the order specified by the given [comparison] function.\n
*\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sort(noinline comparison: (a: Short, b: Short) -> Int): Unit {\n

```

```

asDynamic().sort(comparison)\n\n/**\n * Sorts the array in-place according to the order specified by the given
[comparison] function.\n */\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince
= "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sort(noinline comparison: (a: Int, b: Int) -> Int):
Unit {\n  asDynamic().sort(comparison)\n\n\n/**\n * Sorts the array in-place according to the order specified by
the given [comparison] function.\n */\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.sort(noinline comparison: (a: Long, b: Long) -> Int): Unit {\n
asDynamic().sort(comparison)\n\n\n/**\n * Sorts the array in-place according to the order specified by the given
[comparison] function.\n */\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sort(noinline comparison: (a: Float, b: Float) -> Int): Unit {\n
asDynamic().sort(comparison)\n\n\n/**\n * Sorts the array in-place according to the
order specified by the given [comparison] function.\n */\n@Deprecated("Use other sorting functions from the
Standard Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline
fun DoubleArray.sort(noinline comparison: (a: Double, b: Double) -> Int): Unit {\n
asDynamic().sort(comparison)\n\n\n/**\n * Sorts the array in-place according to the order specified by the given
[comparison] function.\n */\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sort(noinline comparison: (a: Char, b: Char) -> Int): Unit {\n
asDynamic().sort(comparison)\n\n\n/**\n * Sorts the array in-place according to the order specified by the given
[comparator].\n */\n * The sort is _stable_. It means that equal elements preserve their order relative to each other
after sorting.\n */\npublic actual fun <T> Array<out T>.sortWith(comparator:
Comparator<in T>): Unit {\n  if (size > 1) sortArrayWith(this, comparator)\n\n\n\n/**\n * Sorts a range in the array
in-place with the given [comparator].\n */\n * The sort is _stable_. It means that equal elements preserve their order
relative to each other after sorting.\n */\n * @param fromIndex the start of the range (inclusive) to sort, 0 by
default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*/\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun <T> Array<out T>.sortWith(comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size):
Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArrayWith(this, fromIndex, toIndex,
comparator)\n}\n\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n
*/\npublic actual fun
ByteArray.toTypedArray(): Array<Byte> {\n  return js("[]").slice.call(this)\n}\n\n\n/**\n * Returns a *typed*
object array containing all of the elements of this primitive array.\n */\npublic actual fun
ShortArray.toTypedArray(): Array<Short> {\n  return js("[]").slice.call(this)\n}\n\n\n\n/**\n * Returns a *typed*
object array containing all of the elements of this primitive array.\n */\npublic actual fun IntArray.toTypedArray():
Array<Int> {\n  return js("[]").slice.call(this)\n}\n\n\n\n/**\n * Returns a *typed* object array containing all of the
elements of this primitive array.\n */\npublic actual fun LongArray.toTypedArray(): Array<Long> {\n  return
js("[]").slice.call(this)\n}\n\n\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive
array.\n */\npublic actual fun FloatArray.toTypedArray(): Array<Float> {\n  return
js("[]").slice.call(this)\n}\n\n\n\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n
*/\npublic actual fun
DoubleArray.toTypedArray(): Array<Double> {\n  return js("[]").slice.call(this)\n}\n\n\n\n\n/**\n * Returns a *typed*
object array containing all of the elements of this primitive array.\n */\npublic actual fun
BooleanArray.toTypedArray(): Array<Boolean> {\n  return js("[]").slice.call(this)\n}\n\n\n\n\n/**\n * Returns a
*typed* object array containing all of the elements of this primitive array.\n */\npublic actual fun

```

```

CharArray.toArray(): Array<Char> {
    return Array(size) { index -> this[index] }
}

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by the Apache 2.0 license that can be found in the license/LICENSE.txt file.

@file:kotlin.jvm.JvmName("ComparisonsKt")
@file:kotlin.jvm.JvmMultifileClass
package
kotlin.comparisons

Compares
two values using the specified functions [selectors] to calculate the result of the comparison.
The functions are
called sequentially, receive the given values [a] and [b] and return [Comparable]
objects. As soon as the
[Comparable] instances returned by a function for [a] and [b] values do not
compare as equal, the result of that
comparison is returned.

@sample samples.comparisons.Comparisons.compareValuesByWithSelectors

public fun <T> compareValuesBy(a: T, b: T, vararg selectors: (T) -> Comparable<*>?): Int {
    require(selectors.size > 0)
    return compareValuesByImpl(a, b, selectors)
}

private fun <T>
compareValuesByImpl(a: T, b: T, selectors: Array<out (T) -> Comparable<*>?): Int {
    for (fn in selectors) {
        val v1 = fn(a)
        val v2 = fn(b)
        val diff = compareValues(v1, v2)
        if (diff != 0) return diff
    }
    return 0
}

Compares two values using the specified [selector] function to calculate the
result of the comparison.
The function is applied to the given values [a] and [b] and return [Comparable]
objects.
The result of comparison of these [Comparable] instances is returned.

@sample
samples.comparisons.Comparisons.compareValuesByWithSingleSelector

@kotlin.internal.InlineOnly
public
inline fun <T> compareValuesBy(a: T, b: T, selector: (T) -> Comparable<*>?): Int {
    return
compareValues(selector(a), selector(b))
}

Compares two values using the specified [selector] function to
calculate the result of the comparison.
The function is applied to the given values [a] and [b] and return objects
of type K which are then being
compared with the given [comparator].

@sample
samples.comparisons.Comparisons.compareValuesByWithComparator

@kotlin.internal.InlineOnly
public
inline fun <T, K> compareValuesBy(a: T, b: T, comparator: Comparator<in K>, selector: (T) -> K): Int {
    return
comparator.compare(selector(a), selector(b))
}

Not so useful without type inference for receiver of expression
compareValuesWith(v1, v2, compareBy {
    it.prop1 } thenByDescending { it.prop2 })

Compares two values using the specified [comparator].

@Suppress("NOTHING_TO_INLINE")
public inline fun <T> compareValuesWith(a: T, b: T, comparator:
Comparator<T>): Int = comparator.compare(a, b)

Compares two nullable [Comparable] values. Null
is considered less than any value.

@sample samples.comparisons.Comparisons.compareValues

public
fun <T : Comparable<*>> compareValues(a: T?, b: T?): Int {
    if (a === b) return 0
    if (a == null) return -1
    if (b == null) return 1
    @Suppress("UNCHECKED_CAST")
    return (a as
Comparable<Any>).compareTo(b)
}

Creates a comparator using the sequence of functions to calculate a
result of comparison.
The functions are called sequentially, receive the given values `a` and `b` and return
[Comparable]
objects. As soon as the [Comparable] instances returned by a function for `a` and `b` values do not
compare as
equal, the result of that comparison is returned from the [Comparator].

@sample
samples.comparisons.Comparisons.compareByWithSelectors

public fun <T> compareBy(vararg selectors: (T)
-> Comparable<*>?): Comparator<T> {
    require(selectors.size > 0)
    return Comparator { a, b ->
compareValuesByImpl(a, b, selectors) }
}

Creates a comparator using the function to transform value
to a [Comparable] instance for comparison.

@sample
samples.comparisons.Comparisons.compareByWithSingleSelector

@kotlin.internal.InlineOnly
public inline
fun <T> compareBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =
Comparator { a, b ->
compareValuesBy(a, b, selector) }

Creates a comparator using the [selector] function to transform values
being compared and then applying
the specified [comparator] to compare transformed
values.

@sample samples.comparisons.Comparisons.compareByWithComparator

@kotlin.internal.InlineOnly
public inline fun <T, K> compareBy(comparator: Comparator<in K>, crossinline
selector: (T) -> K): Comparator<T> =
Comparator { a, b -> compareValuesBy(a, b, comparator, selector)
}

Creates a descending comparator using the function to transform value to a [Comparable] instance for

```

```

comparison.\n *\n * @sample samples.comparisons.Comparisons.compareByDescendingWithSingleSelector\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> compareByDescending(crossinline selector: (T) ->
Comparable<*>?): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(b, a, selector) }\n\n/**\n *
Creates a descending comparator using the [selector] function to transform values being compared and then
applying\n * the specified [comparator] to compare transformed values.\n *\n * Note that an order of [comparator] is
reversed by this wrapper.\n *\n * @sample
samples.comparisons.Comparisons.compareByDescendingWithComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T, K> compareByDescending(comparator: Comparator<in K>,
crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(b, a, comparator,
selector) }\n\n/**\n * Creates a comparator comparing values after the primary comparator defined them equal. It
uses\n * the function to transform value to a [Comparable] instance for comparison.\n *\n * @sample
samples.comparisons.Comparisons.thenBy\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n    Comparator { a, b -
>\n        val previousCompare = this@thenBy.compare(a, b)\n        if (previousCompare != 0) previousCompare else
compareValuesBy(a, b, selector)\n    }\n\n/**\n * Creates a comparator comparing values after the primary
comparator defined them equal. It uses\n * the [selector] function to transform values
and then compares them with the given [comparator].\n *\n * @sample
samples.comparisons.Comparisons.thenByWithComparator\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T,
K> Comparator<T>.thenBy(comparator: Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =\n
Comparator { a, b ->\n    val previousCompare = this@thenBy.compare(a, b)\n    if (previousCompare != 0)
previousCompare else compareValuesBy(a, b, comparator, selector)\n }\n\n/**\n * Creates a descending
comparator using the primary comparator and\n * the function to transform value to a [Comparable] instance for
comparison.\n *\n * @sample samples.comparisons.Comparisons.thenByDescending\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> Comparator<T>.thenByDescending(crossinline selector: (T)
-> Comparable<*>?): Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare =
this@thenByDescending.compare(a, b)\n        if (previousCompare != 0) previousCompare else
compareValuesBy(b,
a, selector)\n    }\n\n/**\n * Creates a descending comparator comparing values after the primary comparator
defined them equal. It uses\n * the [selector] function to transform values and then compares them with the given
[comparator].\n *\n * @sample samples.comparisons.Comparisons.thenByDescendingWithComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T, K> Comparator<T>.thenByDescending(comparator:
Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b ->\n        val
previousCompare = this@thenByDescending.compare(a, b)\n        if (previousCompare != 0) previousCompare else
compareValuesBy(b, a, comparator, selector)\n    }\n\n/**\n * Creates a comparator using the primary comparator
and function to calculate a result of comparison.\n *\n * @sample
samples.comparisons.Comparisons.thenComparator\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenComparator(crossinline comparison: (a: T, b: T) -> Int):
Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare = this@thenComparator.compare(a, b)\n
        if (previousCompare != 0) previousCompare else comparison(a, b)\n    }\n\n/**\n * Combines this comparator and
the given [comparator] such that the latter is applied only\n * when the former considered values equal.\n *\n *
@sample samples.comparisons.Comparisons.then\n *\npublic infix fun <T> Comparator<T>.then(comparator:
Comparator<in T>): Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare =
this@then.compare(a, b)\n        if (previousCompare != 0) previousCompare else comparator.compare(a, b)\n
    }\n\n/**\n * Combines this comparator and the given [comparator] such that the latter is applied only\n * when the
former considered values equal.\n *\n * @sample samples.comparisons.Comparisons.thenDescending\n *\npublic
infix fun <T> Comparator<T>.thenDescending(comparator: Comparator<in T>): Comparator<T> =\n
Comparator<T> { a, b ->\n

```



```

    val previousCompare = this@thenDescending.compare(a, b)\n    if (previousCompare != 0) previousCompare
else comparator.compare(b, a)\n    }\n\n// Not so useful without type inference for receiver of expression\n/**\n * Extends the given [comparator] of non-nullable values to a comparator of nullable values\n * considering `null`
value less than any other value.\n *\n * @sample
samples.comparisons.Comparisons.nullsFirstLastWithComparator\n *\npublic fun <T : Any>
nullsFirst(comparator: Comparator<in T>): Comparator<T?> =\n    Comparator { a, b ->\n        when {\n            a
=== b -> 0\n            a == null -> -1\n            b == null -> 1\n            else -> comparator.compare(a, b)\n        }\n    }\n\n/**\n * Provides a comparator of nullable [Comparable] values\n * considering `null` value less than any other
value.\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T : Comparable<T>> nullsFirst():
Comparator<T?> = nullsFirst(naturalOrder())\n\n/**\n * Extends the given [comparator] of non-nullable values to a
comparator of nullable values\n * considering `null` value greater than any other value.\n *\n * @sample
samples.comparisons.Comparisons.nullsFirstLastWithComparator\n *\npublic fun <T : Any>
nullsLast(comparator: Comparator<in T>): Comparator<T?> =\n    Comparator { a, b ->\n        when {\n            a
=== b -> 0\n            a == null -> 1\n            b == null -> -1\n            else -> comparator.compare(a, b)\n        }\n    }\n\n/**\n * Provides a comparator of nullable [Comparable] values\n * considering `null` value greater than any
other value.\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T : Comparable<T>> nullsLast(): Comparator<T?> =
nullsLast(naturalOrder())\n\n/**\n * Returns a comparator that compares [Comparable] objects in natural order.\n
*\n * @sample samples.comparisons.Comparisons.naturalOrderComparator\n
*\npublic fun <T : Comparable<T>> naturalOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST")
(NaturalOrderComparator as Comparator<T>)\n\n/**\n * Returns a comparator that compares [Comparable] objects
in reversed natural order.\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastWithComparator\n
*\npublic fun <T : Comparable<T>> reverseOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST")
(ReverseOrderComparator as Comparator<T>)\n\n/**\n * Returns a comparator that imposes the reverse ordering
of this comparator.\n *\n * @sample samples.comparisons.Comparisons.reversed\n
*\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")\npublic fun <T> Comparator<T>.reversed():
Comparator<T> = when (this) {\n    is ReversedComparator -> this.comparator\n    NaturalOrderComparator ->
@Suppress("UNCHECKED_CAST") (ReverseOrderComparator as Comparator<T>)\n    ReverseOrderComparator -> @Suppress("UNCHECKED_CAST") (NaturalOrderComparator as
Comparator<T>)\n    else -> ReversedComparator(this)\n}\n\nprivate class ReversedComparator<T>(public val comparator:
Comparator<T>) : Comparator<T> {\n    override fun compare(a: T, b: T): Int = comparator.compare(b, a)\n    @Suppress("VIRTUAL_MEMBER_HIDDEN")\n    fun reversed(): Comparator<T> = comparator\n}\n\nprivate
object NaturalOrderComparator : Comparator<Comparable<Any>> {\n    override fun compare(a:
Comparable<Any>, b: Comparable<Any>): Int = a.compareTo(b)\n    @Suppress("VIRTUAL_MEMBER_HIDDEN")\n    fun reversed(): Comparator<Comparable<Any>> =
ReverseOrderComparator\n}\n\nprivate object ReverseOrderComparator : Comparator<Comparable<Any>> {\n
override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = b.compareTo(a)\n    @Suppress("VIRTUAL_MEMBER_HIDDEN")\n    fun reversed(): Comparator<Comparable<Any>> =
NaturalOrderComparator\n}\n\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StandardKt")\npackage kotlin\n\nimport
kotlin.contracts.*\n\n/**\n * An exception is thrown to indicate that a method body remains to be implemented.\n
*\npublic class NotImplementedError(message: String = "An operation is not implemented.") :
Error(message)\n\n/**\n * Always throws [NotImplementedError] stating that operation is not implemented.\n
*\n@kotlin.internal.InlineOnly\npublic inline fun TODO(): Nothing = throw NotImplementedError()\n\n/**\n *

```

Always throws [NotImplementedError] stating that operation is not implemented.

```

 * @param reason a string explaining why the implementation is missing.
 @kotlin.internal.InlineOnly
public inline fun TODO(reason: String): Nothing = throw NotImplementedError("An operation is not implemented: $reason")
 * Calls the specified function [block] and returns its result.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).
 @kotlin.internal.InlineOnly
public inline fun <R> run(block: () -> R): R {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    return block()
}
 * Calls the specified function [block] with `this` value as its receiver and returns its result.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).
 @kotlin.internal.InlineOnly
public inline fun <T, R> T.run(block: T.() -> R): R {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    return block()
}
 * Calls the specified function [block] with the given [receiver] as its receiver and returns its result.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#with).
 @kotlin.internal.InlineOnly
public inline fun <T, R> with(receiver: T, block: T.() -> R): R {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    return receiver.block()
}
 * Calls the specified function [block] with `this` value as its receiver and returns `this` value.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#apply).
 @kotlin.internal.InlineOnly
public inline fun <T> T.apply(block: T.() -> Unit): T {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    block()
    return this
}
 * Calls the specified function [block] with `this` value as its argument and returns `this` value.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#also).
 @kotlin.internal.InlineOnly
 @SinceKotlin("1.1")
public inline fun <T> T.also(block: (T) -> Unit): T {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    block(this)
    return this
}
 * Calls the specified function [block] with `this` value as its argument and returns its result.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#let).
 @kotlin.internal.InlineOnly
public inline fun <T, R> T.let(block: (T) -> R): R {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    return block(this)
}
 * Returns `this` value if it satisfies the given [predicate] or `null`, if it doesn't.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).
 @kotlin.internal.InlineOnly
 @SinceKotlin("1.1")
public inline fun <T> T.takeIf(predicate: (T) -> Boolean): T? {
    contract {
        callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)
    }
    return if (predicate(this)) this else null
}
 * Returns `this` value if it _does not_ satisfy the given [predicate] or `null`, if it does.
 * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).
 @kotlin.internal.InlineOnly
 @SinceKotlin("1.1")
public inline fun <T> T.takeUnless(predicate: (T) -> Boolean): T? {
    contract {
        callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)
    }
    return if (!predicate(this)) this else null
}
 * Executes the given function [action] specified number of [times].
 * A zero-based index of current iteration is passed as a parameter to [action].
 * @sample samples.misc.ControlFlow.repeat
 @kotlin.internal.InlineOnly
public inline fun repeat(times: Int, action: (Int) -> Unit) {
    contract {
        callsInPlace(action)
    }
    for (index in 0 until times) {
        action(index)
    }
}

```

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package kotlin.comparisons
// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
import

```

kotlin.js.*\n\n/**\n * Returns the greater of two values.\n * \n * If values are equal, returns the first one.\n *\n@SinceKotlin("1.1")\npublic actual fun <T : Comparable<T>> maxOf(a: T, b: T): T {\n    return if (a >= b) a\n    else b\n}\n\n/**\n * Returns the greater of two values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Byte, b: Byte): Byte {\n    return maxOf(a.toInt(), b.toInt()).unsafeCast<Byte>()\n}\n\n/**\n * Returns the greater of two values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline\nfun maxOf(a: Short, b: Short): Short {\n    return maxOf(a.toInt(), b.toInt()).unsafeCast<Short>()\n}\n\n/**\n * Returns the greater of two values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline\nfun maxOf(a: Int, b: Int): Int {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the greater of two values.\n *\n@SinceKotlin("1.1")\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun maxOf(a: Long, b:\nLong): Long {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n * \n * If either value\nis `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun\nmaxOf(a: Float, b: Float): Float {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the greater of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic\nactual inline fun maxOf(a: Double, b: Double): Double {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the\ngreater of three values.\n * \n * If there are multiple equal maximal values, returns the first of them.\n *\n@SinceKotlin("1.1")\npublic actual fun <T : Comparable<T>> maxOf(a: T, b: T, c: T): T {\n    return\nmaxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Byte, b: Byte, c: Byte):\nByte {\n    return JsMath.max(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()\n}\n\n/**\n * Returns the greater of\nthree values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Short, b:\nShort, c: Short): Short {\n    return JsMath.max(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Short>()\n}\n\n/**\n * Returns the greater of three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual\ninline fun maxOf(a: Int, b: Int, c: Int): Int {\n    return JsMath.max(a, b, c)\n}\n\n/**\n * Returns the greater of three\nvalues.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Long, b: Long,\nc: Long): Long {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of three values.\n * \n * If any\nvalue is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun\nmaxOf(a: Float, b: Float, c: Float): Float {\n    return JsMath.max(a, b, c)\n}\n\n/**\n * Returns the greater of three\nvalues.\n * \n * If any value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Double, b: Double, c:\nDouble): Double {\n    return JsMath.max(a, b, c)\n}\n\n/**\n * Returns the greater of the given values.\n * \n * If\nthere are multiple equal maximal values, returns the first of them.\n *\n@SinceKotlin("1.4")\npublic actual fun <T\n: Comparable<T>>\nmaxOf(a: T, vararg other: T): T {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return\nmax\n}\n\n/**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic actual fun maxOf(a:\nByte, vararg other: Byte): Byte {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return\nmax\n}\n\n/**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic actual fun maxOf(a:\nShort, vararg other: Short): Short {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return\nmax\n}\n\n/**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic actual fun maxOf(a:\nInt, vararg other: Int): Int {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic actual fun maxOf(a: Long, vararg\nother: Long): Long {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the greater of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.4")\npublic actual fun maxOf(a: Float, vararg other: Float): Float {\n    var max = a\n    for (e\nin other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the greater of the given values.\n * \n * If any\nvalue is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.4")\npublic actual fun maxOf(a: Double, vararg other:\nDouble): Double {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns\nthe smaller of two values.\n * \n * If values are equal, returns the first one.\n *\n@SinceKotlin("1.1")\npublic

```

```

actual fun <T : Comparable<T>> minOf(a: T, b: T): T {
    return if (a <= b) a else b
}

Returns the smaller of two values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Byte, b: Byte): Byte {
    return minOf(a.toInt(), b.toInt()).unsafeCast<Byte>()
}

Returns the smaller of two values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Short, b: Short): Short {
    return minOf(a.toInt(), b.toInt()).unsafeCast<Short>()
}

Returns the smaller of two values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Int, b: Int): Int {
    return JsMath.min(a, b)
}

Returns the smaller of two values.

@SinceKotlin("1.1")@Suppress("NOTHING_TO_INLINE")
public actual inline fun minOf(a: Long, b: Long): Long {
    return if (a <= b) a else b
}

Returns the smaller of two values.

If either value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Float, b: Float): Float {
    return JsMath.min(a, b)
}

Returns the smaller of two values.

If either value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Double, b: Double): Double {
    return JsMath.min(a, b)
}

Returns the smaller of three values.

If there are multiple equal minimal values, returns the first of them.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual fun <T : Comparable<T>> minOf(a: T, b: T, c: T): T {
    return minOf(a, minOf(b, c))
}

Returns the smaller of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Byte, b: Byte, c: Byte): Byte {
    return JsMath.min(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()
}

Returns the smaller of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Short, b: Short, c: Short): Short {
    return JsMath.min(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Short>()
}

Returns the smaller of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Int, b: Int, c: Int): Int {
    return JsMath.min(a, b, c)
}

Returns the smaller of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Long, b: Long, c: Long): Long {
    return minOf(a, minOf(b, c))
}

Returns the smaller of three values.

If any value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Float, b: Float, c: Float): Float {
    return JsMath.min(a, b, c)
}

Returns the smaller of three values.

If any value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun minOf(a: Double, b: Double, c: Double): Double {
    return JsMath.min(a, b, c)
}

Returns the smaller of the given values.

If there are multiple equal minimal values, returns the first of them.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun <T : Comparable<T>> minOf(a: T, vararg other: T): T {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun minOf(a: Byte, vararg other: Byte): Byte {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun minOf(a: Short, vararg other: Short): Short {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun minOf(a: Int, vararg other: Int): Int {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun minOf(a: Long, vararg other: Long): Long {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

If any value is NaN, returns NaN.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun minOf(a: Float, vararg other: Float): Float {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

If any value is NaN, returns NaN.

@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public actual fun minOf(a: Double, vararg other: Double): Double {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

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// Auto-generated file. DO NOT EDIT!
package kotlin
import kotlin.experimental.*
import

```

```

kotlin.jvm.*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalUnsignedTypes::class)\n\n@JvmInline\n\npublic value class ULong @PublishedApi

internal constructor(@PublishedApi internal val data: Long) : Comparable<ULong> {\n\n    companion object {\n\n        /**\n         * A constant holding the minimum value an instance of ULong can have.\n         */\n        public const val MIN_VALUE: ULong = ULong(0)\n\n        /**\n         * A constant holding the maximum value an instance of ULong can have.\n         */\n        public const val MAX_VALUE: ULong = ULong(-1)\n\n        /**\n         * The number of bytes used to represent an instance of ULong in a binary form.\n         */\n        public const val SIZE_BYTES: Int = 8\n\n        /**\n         * The number of bits used to represent an instance of ULong in a binary form.\n         */\n        public const val SIZE_BITS: Int = 64\n    }\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UByte): Int = this.compareTo(other.toULong())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UShort): Int = this.compareTo(other.toULong())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UInt): Int = this.compareTo(other.toULong())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public override inline operator fun compareTo(other: ULong): Int = ulongCompare(this.data, other.data)\n\n    /**\n     * Adds the other value to this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UByte): ULong = this.plus(other.toULong())\n\n    /**\n     * Adds the other value to this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UShort): ULong = this.plus(other.toULong())\n\n    /**\n     * Adds the other value to this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UInt): ULong = this.plus(other.toULong())\n\n    /**\n     * Adds the other value to this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: ULong): ULong = ULong(this.data.plus(other.data))\n\n    /**\n     * Subtracts the other value from this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UByte): ULong = this.minus(other.toULong())\n\n    /**\n     * Subtracts the other value from this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UShort): ULong = this.minus(other.toULong())\n\n    /**\n     * Subtracts the other value from this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UInt): ULong = this.minus(other.toULong())\n\n    /**\n     * Subtracts the other value from this value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: ULong): ULong = ULong(this.data.minus(other.data))\n\n    /**\n     * Multiplies this value by the other value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UByte): ULong = this.times(other.toULong())\n\n    /**\n     * Multiplies this value by the other value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UShort): ULong = this.times(other.toULong())\n\n    /**\n     * Multiplies this value by the other value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UInt): ULong = this.times(other.toULong())\n\n    /**\n     * Multiplies this value by the other value.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: ULong): ULong = ULong(this.data.times(other.data))\n\n    /**\n     * Divides this value by the other value, truncating the result to an integer that is closer to zero.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun div(other: UByte): ULong = this.div(other.toULong())\n\n    /**\n     * Divides this value by the other value, truncating the result to an integer that is closer to zero.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun div(other: UShort): ULong = this.div(other.toULong())\n\n    /**\n     * Divides this value by the other

```

value, truncating the result

```
@kotlin.internal.InlineOnly\n public inline operator fun div(other: UInt):  
ULong = this.div(other.toULong())\n /** Divides this value by the other value, truncating the result to an integer  
that is closer to zero. *\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: ULong): ULong =  
ulongDivide(this, other)\n /**\n * Calculates the remainder of truncating division of this value by the other  
value.\n * \n * The result is always less than the divisor.\n @kotlin.internal.InlineOnly\n public  
inline operator fun rem(other: UByte): ULong = this.rem(other.toULong())\n /**\n * Calculates the remainder  
of truncating division of this value by the other value.\n * \n * The result is always less than the divisor.\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: UInt): ULong =  
this.rem(other.toULong())\n /**\n * Calculates the remainder  
of truncating division of this value by the other value.\n * \n * The result is always less than the divisor.\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong): ULong = ulongRemainder(this, other)\n /**\n * Divides this value by  
the other value, flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types,  
the results of flooring division and truncating division are the same.\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UByte): ULong = this.floorDiv(other.toULong())\n /**\n * Divides this value  
by the other value, flooring the result to an integer that is  
closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division  
are the same.\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UShort): ULong =  
this.floorDiv(other.toULong())\n /**\n * Divides this value by the other value, flooring the result to an integer  
that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating  
division are the same.\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): ULong =  
this.floorDiv(other.toULong())\n /**\n * Divides this value by the other value, flooring the result to an integer  
that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating  
division are the same.\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =  
div(other)\n /**\n * Calculates  
the remainder of flooring division of this value by the other value.\n * \n * The result is always less than the  
divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UByte): UByte =  
this.mod(other.toULong()).toUByte()\n /**\n * Calculates the remainder of flooring division of this value by the  
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders  
of flooring division and truncating division are the same.\n @kotlin.internal.InlineOnly\n public inline  
fun mod(other: UShort): UShort = this.mod(other.toULong()).toUShort()\n /**\n * Calculates the remainder of  
flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n * \n * For unsigned types, the remainders of flooring division  
and truncating division are the same.\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UInt):  
UInt = this.mod(other.toULong()).toInt()\n /**\n * Calculates the remainder of flooring division of this value  
by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the  
remainders of flooring division and truncating division are the same.\n @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = rem(other)\n /**\n * Returns this value incremented by one.\n *\n @sample samples.misc.Builtins.inc\n @kotlin.internal.InlineOnly\n public inline operator fun  
inc(): ULong = ULong(data.inc())\n /**\n * Returns this value decremented by one.\n *\n @sample  
samples.misc.Builtins.dec\n @kotlin.internal.InlineOnly\n public inline operator fun dec(): ULong =  
ULong(data.dec())\n /** Creates a range from  
this value to the specified [other] value. *\n @kotlin.internal.InlineOnly\n public inline operator fun  
rangeTo(other: ULong): ULongRange = ULongRange(this, other)\n /**\n * Shifts this value left by the
```

```

[bitCount] number of bits.\n * Note that only the six lowest-order bits of the [bitCount] are used as the shift
distance.\n * The shift distance actually used is therefore always in the range `0..63`.\n *\n
@kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): ULong = ULong(data shl bitCount)\n\n
/**\n * Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with zeros.\n *\n *
Note that only the six lowest-order bits of the [bitCount] are used as the shift distance.\n * The shift distance
actually used is therefore always in the range `0..63`.\n */\n @kotlin.internal.InlineOnly\n public inline infix
fun shr(bitCount: Int): ULong = ULong(data ushr bitCount)\n\n /**
Performs a bitwise AND operation between the two values. *\n @kotlin.internal.InlineOnly\n public inline
infix fun and(other: ULong): ULong = ULong(this.data and other.data)\n /** Performs a bitwise OR operation
between the two values. *\n @kotlin.internal.InlineOnly\n public inline infix fun or(other: ULong): ULong =
ULong(this.data or other.data)\n /** Performs a bitwise XOR operation between the two values. *\n
@kotlin.internal.InlineOnly\n public inline infix fun xor(other: ULong): ULong = ULong(this.data xor
other.data)\n /** Inverts the bits in this value. *\n @kotlin.internal.InlineOnly\n public inline fun inv():
ULong = ULong(data.inv())\n\n /**\n * Converts this [ULong] value to [Byte].\n *\n * If this value is less
than or equals to [Byte.MAX_VALUE], the resulting `Byte` value represents\n * the same numerical value as this
`ULong`.\n *\n * The resulting `Byte` value is represented by the least significant 8 bits
of this `ULong` value.\n * Note that the resulting `Byte` value may be negative.\n *\n
@kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data.toByte()\n /**\n * Converts this [ULong]
value to [Short].\n *\n * If this value is less than or equals to [Short.MAX_VALUE], the resulting `Short` value
represents\n * the same numerical value as this `ULong`.\n *\n * The resulting `Short` value is represented
by the least significant 16 bits of this `ULong` value.\n * Note that the resulting `Short` value may be negative.\n
*\n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data.toShort()\n /**\n * Converts this
[ULong] value to [Int].\n *\n * If this value is less than or equals to [Int.MAX_VALUE], the resulting `Int`
value represents\n * the same numerical value as this `ULong`.\n *\n * The resulting `Int` value is
represented by the least significant 32 bits of this `ULong`
value.\n * Note that the resulting `Int` value may be negative.\n *\n @kotlin.internal.InlineOnly\n public
inline fun toInt(): Int = data.toInt()\n /**\n * Converts this [ULong] value to [Long].\n *\n * If this value is
less than or equals to [Long.MAX_VALUE], the resulting `Long` value represents\n * the same numerical value
as this `ULong`. Otherwise the result is negative.\n *\n * The resulting `Long` value has the same binary
representation as this `ULong` value.\n */\n @kotlin.internal.InlineOnly\n public inline fun toLong(): Long =
data\n\n /**\n * Converts this [ULong] value to [UByte].\n *\n * If this value is less than or equals to
[UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this `ULong`.\n
*\n * The resulting `UByte` value is represented by the least significant 8 bits of this `ULong` value.\n *\n
@kotlin.internal.InlineOnly\n public inline
fun toUByte(): UByte = data.toUByte()\n /**\n * Converts this [ULong] value to [UShort].\n *\n * If this
value is less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents\n * the same
numerical value as this `ULong`.\n *\n * The resulting `UShort` value is represented by the least significant 16
bits of this `ULong` value.\n */\n @kotlin.internal.InlineOnly\n public inline fun toUShort(): UShort =
data.toUShort()\n /**\n * Converts this [ULong] value to [UInt].\n *\n * If this value is less than or equals
to [UInt.MAX_VALUE], the resulting `UInt` value represents\n * the same numerical value as this `ULong`.\n
*\n * The resulting `UInt` value is represented by the least significant 32 bits of this `ULong` value.\n *\n
@kotlin.internal.InlineOnly\n public inline fun toUInt(): UInt = data.toUInt()\n /** Returns this value. *\n
@kotlin.internal.InlineOnly\n public inline fun toULong():
ULong = this\n\n /**\n * Converts this [ULong] value to [Float].\n *\n * The resulting value is the closest
`Float` to this `ULong` value.\n * In case when this `ULong` value is exactly between two `Float`s,\n * the one
with zero at least significant bit of mantissa is selected.\n */\n @kotlin.internal.InlineOnly\n public inline fun
toFloat(): Float = this.toDouble().toFloat()\n /**\n * Converts this [ULong] value to [Double].\n *\n * The
resulting value is the closest `Double` to this `ULong` value.\n * In case when this `ULong` value is exactly

```

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between two `Double`s,\n * the one with zero at least significant bit of mantissa is selected.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toDouble(): Double = ulongToDouble(data)\n\n public override
fun toString(): String = ulongToString(data)\n\n}\n\n/**\n * Converts this [Byte] value to [ULong].\n *\n * If this
value is positive, the resulting `ULong` value
represents the same numerical value as this `Byte`.\n *\n * The least significant 8 bits of the resulting `ULong`
value are the same as the bits of this `Byte` value,\n *\n * whereas the most significant 56 bits are filled with the sign bit
of this value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Byte.toULong(): ULong = ULong(this.toLong())\n\n/**\n * Converts this [Short] value to
[ULong].\n *\n * If this value is positive, the resulting `ULong` value represents the same numerical value as this
`Short`.\n *\n * The least significant 16 bits of the resulting `ULong` value are the same as the bits of this `Short`
value,\n *\n * whereas the most significant 48 bits are filled with the sign bit of this value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Short.toULong(): ULong = ULong(this.toLong())\n\n/**\n * Converts this [Int]
value to [ULong].\n *\n * If this value is positive, the resulting `ULong` value represents the same numerical value
as this `Int`.\n *\n * The least significant 32 bits of the resulting `ULong` value are the same as the bits of this `Int`
value,\n *\n * whereas the most significant 32 bits are filled with the sign bit of this value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Int.toULong(): ULong = ULong(this.toLong())\n\n/**\n * Converts this [Long] value to [ULong].\n
*\n * If this value is positive, the resulting `ULong` value represents the same numerical value as this `Long`.\n *\n
* The resulting `ULong` value has the same binary representation as this `Long` value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Long.toULong(): ULong = ULong(this)\n\n/**\n * Converts this [Float] value to [ULong].\n *\n *
The fractional part,
if any, is rounded down towards zero.\n *\n * Returns zero if this `Float` value is negative or `NaN`,
[ULong.MAX_VALUE] if it's bigger than `ULong.MAX_VALUE`.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Float.toULong(): ULong = doubleToULong(this.toDouble())\n\n/**\n * Converts this [Double]
value to [ULong].\n *\n * The fractional part, if any, is rounded down towards zero.\n *\n * Returns zero if this
`Double` value is negative or `NaN`, [ULong.MAX_VALUE] if it's bigger than `ULong.MAX_VALUE`.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Double.toULong(): ULong = doubleToULong(this)\n\n","/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element* from the list.\n *\n *
Throws an [IndexOutOfBoundsException] if the size of this list is less than 1.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> List<T>.component1(): T {\n return
get(0)\n}\n\n/**\n * Returns 2nd *element* from the list.\n *\n * Throws an [IndexOutOfBoundsException] if the
size of this list is less than 2.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
List<T>.component2(): T {\n return get(1)\n}\n\n/**\n * Returns 3rd *element* from the list.\n *\n * Throws an
[IndexOutOfBoundsException] if the size of this list is less than 3.\n */\n\n@kotlin.internal.InlineOnly\npublic
inline operator fun <T> List<T>.component3(): T {\n return get(2)\n}\n\n/**\n * Returns 4th *element* from the
list.\n *\n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 4.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> List<T>.component4(): T {\n return
get(3)\n}\n\n/**\n * Returns 5th *element* from the list.\n *\n * Throws an [IndexOutOfBoundsException] if the

```



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size of this list is less than 5.\n * \n @kotlin.internal.InlineOnly\npublic inline operator fun <T>
List<T>.component5(): T {\n    return get(4)\n}\n\n/**\n * Returns `true` if [element] is found in the collection.\n\n * \n\npublic operator fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.contains(element: T): Boolean {\n    if
(this is Collection)\n        return contains(element)\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns an
element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this
collection.\n\n * \n\n * @sample
samples.collections.Collections.Elements.elementAt\n * \n\npublic fun <T> Iterable<T>.elementAt(index: Int): T {\n
if (this is List)\n    return get(index)\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException("Collection doesn't contain element at index $index.\") }\n}\n\n/**\n * Returns an
element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this list.\n\n
* \n\n * @sample samples.collections.Collections.Elements.elementAt\n * \n\n @kotlin.internal.InlineOnly\npublic
inline fun <T> List<T>.elementAt(index: Int): T {\n    return get(index)\n}\n\n/**\n * Returns an element at the
given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this collection.\n\n
* \n\n * @sample samples.collections.Collections.Elements.elementAtOrElse\n * \n\npublic fun <T>
Iterable<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    if (this is List)\n        return
this.getOrElse(index,
        defaultValue)\n    if (index < 0)\n        return defaultValue(index)\n    val iterator = iterator()\n    var count = 0\n
while (iterator.hasNext()) {\n        val element = iterator.next()\n        if (index == count++)\n            return
element\n    }\n    return defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this list.\n\n * \n\n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n * \n\n @kotlin.internal.InlineOnly\npublic inline fun
<T> List<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this collection.\n\n * \n\n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\npublic fun <T>
Iterable<T>.elementAtOrNull(index: Int): T? {\n    if (this
is List)\n        return this.getOrNull(index)\n    if (index < 0)\n        return null\n    val iterator = iterator()\n    var
count = 0\n    while (iterator.hasNext()) {\n        val element = iterator.next()\n        if (index == count++)\n
return element\n    }\n    return null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is
out of bounds of this list.\n\n * \n\n * @sample samples.collections.Collections.Elements.elementAtOrNull\n\n * \n\n @kotlin.internal.InlineOnly\npublic inline fun <T> List<T>.elementAtOrNull(index: Int): T? {\n    return
this.getOrNull(index)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n\n * \n\n * @sample samples.collections.Collections.Elements.find\n\n * \n\n @kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.find(predicate: (T) -> Boolean): T? {\n    return
firstOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate],
or `null` if no such element was found.\n\n * \n\n * @sample samples.collections.Collections.Elements.find\n\n * \n\n @kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.findLast(predicate: (T) -> Boolean): T? {\n
return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no
such element was found.\n\n * \n\n * @sample samples.collections.Collections.Elements.find\n\n * \n\n @kotlin.internal.InlineOnly\npublic inline fun <T> List<T>.findLast(predicate: (T) -> Boolean): T? {\n    return
lastOrNull(predicate)\n}\n\n/**\n * Returns first element.\n\n * @throws [NoSuchElementException] if the collection
is empty.\n\n * \n\npublic fun <T> Iterable<T>.first(): T {\n    when (this) {\n        is List -> return this.first()\n        else
-> {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n                throw
NoSuchElementException("Collection is empty.\")\n            return iterator.next()\n        }\n    }\n}\n\n/**\n * Returns first element.\n\n * @throws [NoSuchElementException] if the list is empty.\n\n * \n\npublic fun <T>
List<T>.first(): T {\n    if (isEmpty())\n        throw NoSuchElementException("List is empty.\")\n    return
this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate].\n\n * @throws
[NoSuchElementException] if no such element is found.\n\n * \n\npublic inline fun <T> Iterable<T>.first(predicate: (T)

```

```

-> Boolean): T {
    for (element in this) if (predicate(element)) return element
    throw NoSuchElementException("Collection contains no element matching the predicate.")
}

* Returns the first non-null value produced by [transform] function being applied to elements of this collection in iteration order,
* or throws [NoSuchElementException] if no non-null value was produced.
@sample
samples.collections.Collections.Transformations.firstNotNullOf

*
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <T, R : Any>
Iterable<T>.firstNotNullOf(transform:
    (T) -> R?): R {
    return firstNotNullOfOrNull(transform) ?: throw NoSuchElementException("No element of the
collection was transformed to a non-null value.")
}

* Returns the first non-null value produced by
[transform] function being applied to elements of this collection in iteration order,
* or `null` if no non-null value
was produced.
@sample
samples.collections.Collections.Transformations.firstNotNullOf

*
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <T, R : Any>
Iterable<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {
    for (element in this) {
        val result =
transform(element)
        if (result != null) {
            return result
        }
    }
    return null
}

* Returns the first element, or `null` if the collection is empty.
public fun <T> Iterable<T>.firstOrNull(): T? {
    when (this) {
        is List -> {
            if (isEmpty())
return null
            else
return this[0]
        }
        else -> {
            val iterator = iterator()
if (!iterator.hasNext())
return null
            return iterator.next()
        }
    }
}

* Returns the first element, or `null` if the list is empty.
public fun <T> List<T>.firstOrNull(): T? {
    return if (isEmpty())
null else this[0]
}

* Returns the first element matching the given [predicate], or `null` if element was not
found.
public inline fun <T> Iterable<T>.firstOrNull(predicate: (T) -> Boolean): T? {
    for (element in this)
if (predicate(element)) return element
    return null
}

* Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this list.
*
@kotlin.internal.InlineOnly
public inline fun <T> List<T>.getOrNull(index: Int, defaultValue: (Int) -> T): T? {
    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)
}

* Returns an element at the given [index] or `null` if
the [index] is out of bounds of this list.
@sample
samples.collections.Collections.Elements.getOrNull

*
public fun <T> List<T>.getOrNull(index: Int): T? {
    return if (index >= 0 && index <= lastIndex) get(index)
else null
}

* Returns first index of [element], or -1 if the collection does not contain element.
public fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.indexOf(element: T): Int {
    if (this is List) return
this.indexOf(element)
    var index = 0
    for (item in this) {
        checkIndexOverflow(index)
        if (element
== item)
return index
        index++
    }
    return -1
}

* Returns first index of [element], or -1
if the list does not contain element.
@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false
warning, extension takes precedence in some cases
public fun <@kotlin.internal.OnlyInputTypes
T> List<T>.indexOf(element: T): Int {
    return indexOf(element)
}

* Returns index of the first element
matching the given [predicate], or -1 if the collection does not contain such element.
public inline fun <T>
Iterable<T>.indexOfFirst(predicate: (T) -> Boolean): Int {
    var index = 0
    for (item in this) {
        checkIndexOverflow(index)
        if (predicate(item))
return index
        index++
    }
    return -1
}

* Returns index of the first element matching the given [predicate], or -1 if the list does not contain
such element.
public inline fun <T> List<T>.indexOfFirst(predicate: (T) -> Boolean): Int {
    var index = 0
    for (item in this) {
        if (predicate(item))
return index
        index++
    }
    return -1
}

* Returns index of the last element matching the given [predicate], or -1 if the collection does not contain such
element.
public inline fun
<T> Iterable<T>.indexOfLast(predicate: (T) -> Boolean): Int {
    var lastIndex = -1
    var index = 0
    for (item
in this) {
        checkIndexOverflow(index)
        if (predicate(item))
lastIndex = index
        index++
    }
    return lastIndex
}

* Returns index of the last element matching the given [predicate], or -1 if the list
does not contain such element.
public inline fun <T> List<T>.indexOfLast(predicate: (T) -> Boolean): Int {
    val iterator = this.listIterator(size)
    while (iterator.hasPrevious()) {
        if (predicate(iterator.previous())) {

```

```

return iterator.nextIndex()\n    }\n    }\n    return -1\n}\n\n/**\n * Returns the last element.\n * \n * @throws\n NoSuchElementException if the collection is empty.\n * \n * @sample\n samples.collections.Collections.Elements.last\n */\npublic fun <T> Iterable<T>.last(): T {\n    when (this) {\n        is\n List -> return this.last()\n        else -> {\n            val iterator\n = iterator()\n            if (!iterator.hasNext())\n                throw NoSuchElementException("Collection is empty.")\n            var last = iterator.next()\n            while (iterator.hasNext())\n                last = iterator.next()\n            return\n last\n        }\n    }\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the list is\n empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun <T> List<T>.last(): T {\n    if (isEmpty())\n        throw NoSuchElementException("List is empty.")\n    return this[lastIndex]\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such\n element is found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun <T>\n Iterable<T>.last(predicate: (T) -> Boolean): T {\n    var last: T? = null\n    var found = false\n    for (element in this)\n        if (predicate(element)) {\n            last = element\n            found = true\n        }\n    if (!found) throw\n NoSuchElementException("Collection contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\nreturn last as T\n}\n\n/**\n * Returns the last element matching the\n given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample\n samples.collections.Collections.Elements.last\n */\npublic inline fun <T> List<T>.last(predicate: (T) -> Boolean): T\n {\n    val iterator = this.listIterator(size)\n    while (iterator.hasPrevious()) {\n        val element = iterator.previous()\n        if (predicate(element)) return element\n    }\n    throw NoSuchElementException("List contains no element\n matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the collection does not contain\n element.\n * \n */\npublic fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.lastIndexOf(element: T): Int {\n    if\n (this is List) return this.lastIndexOf(element)\n    var lastIndex = -1\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if (element\n == item)\n            lastIndex = index\n            index++\n    }\n    return lastIndex\n}\n\n/**\n * Returns last index of\n [element], or -1 if the list does not contain element.\n *\n */\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in\n some cases\npublic fun <@kotlin.internal.OnlyInputTypes T> List<T>.lastIndexOf(element: T): Int {\n    return\n lastIndexOf(element)\n}\n\n/**\n * Returns the last element, or `null` if the collection is empty.\n * \n * @sample\n samples.collections.Collections.Elements.last\n */\npublic fun <T> Iterable<T>.lastOrNull(): T? {\n    when (this)\n {\n        is List -> return if (isEmpty()) null else this[size - 1]\n        else -> {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n                return null\n            var last = iterator.next()\n            while (iterator.hasNext())\n                last = iterator.next()\n            return last\n        }\n    }\n}\n\n/**\n * Returns the last element, or `null` if the list is empty.\n * \n * @sample\n samples.collections.Collections.Elements.last\n */\npublic fun <T> List<T>.lastOrNull(): T? {\n    return if\n (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if\n no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun\n <T> Iterable<T>.lastOrNull(predicate: (T) -> Boolean): T? {\n    var last: T? = null\n    for (element in this) {\n        if (predicate(element)) {\n            last = element\n        }\n    }\n    return last\n}\n\n/**\n * Returns the last element\n matching the given [predicate], or `null` if no such element was found.\n * \n * @sample\n samples.collections.Collections.Elements.last\n */\npublic inline fun <T> List<T>.lastOrNull(predicate: (T)\n -> Boolean): T? {\n    val iterator = this.listIterator(size)\n    while (iterator.hasPrevious()) {\n        val element =\n iterator.previous()\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns a random\n element from this collection.\n * \n * @throws NoSuchElementException if this collection is empty.\n *\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>.random(): T {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this collection using the specified source of\n randomness.\n * \n * @throws NoSuchElementException if this collection is empty.\n *\n */\n@SinceKotlin("1.3")\npublic fun <T> Collection<T>.random(random: Random): T {\n    if (isEmpty())\n
```

```

throw NoSuchElementException("Collection is empty.")\n    return elementAt(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this collection, or `null` if this collection is empty.\n *\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic\n    inline fun <T> Collection<T>.randomOrNull(): T? {\n        return randomOrNull(Random)\n    }\n\n/**\n * Returns a random element from this collection using the specified source of randomness, or `null` if this collection is empty.\n *\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T>\n    Collection<T>.randomOrNull(random: Random): T? {\n        if (isEmpty())\n            return null\n        return\n            elementAt(random.nextInt(size))\n    }\n\n/**\n * Returns the single element, or throws an exception if the collection is empty or has more than one element.\n *\n */\npublic fun <T> Iterable<T>.single(): T {\n    when (this) {\n        is List -> return this.single()\n        else -> {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n                throw NoSuchElementException("Collection is empty.")\n            val single = iterator.next()\n            if (iterator.hasNext())\n                throw IllegalArgumentException("Collection has more than one element.")\n            return single\n        }\n    }\n}\n\n/**\n * Returns the single element, or throws an exception if the list is empty or has more than one element.\n *\n */\npublic fun <T> List<T>.single(): T {\n    return when (size) {\n        0 -> throw\n            NoSuchElementException("List is empty.")\n        1 -> this[0]\n        else -> throw\n            IllegalArgumentException("List has more than one element.")\n    }\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.\n *\n */\npublic inline fun <T> Iterable<T>.single(predicate: (T) -> Boolean): T {\n    var single: T? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw\n                IllegalArgumentException("Collection contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Collection contains no element matching the predicate.")\n    @SuppressWarnings("UNCHECKED_CAST")\n    return single as T\n}\n\n/**\n * Returns single element, or `null` if the collection is empty or has more than one element.\n *\n */\npublic fun <T> Iterable<T>.singleOrNull(): T? {\n    when (this) {\n        is List -> return if (size == 1) this[0] else null\n        else -> {\n            val iterator =\n                iterator()\n            if (!iterator.hasNext())\n                return null\n            val single = iterator.next()\n            if (iterator.hasNext())\n                return null\n            return single\n        }\n    }\n}\n\n/**\n * Returns single element, or `null` if the list is empty or has more than one element.\n *\n */\npublic fun <T> List<T>.singleOrNull(): T? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or more than one element was found.\n *\n */\npublic inline fun <T> Iterable<T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single: T? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n *\n */\n@throws IllegalArgumentException if [n] is negative.\n * @sample\n    samples.collections.Collections.Transformations.drop\n */\npublic fun <T> Iterable<T>.drop(n: Int): List<T> {\n    require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return toList()\n    val list: ArrayList<T>\n    if (this is Collection<*>) {\n        val resultSize = size - n\n        if (resultSize <= 0)\n            return\n                emptyList()\n        if (resultSize == 1)\n            return\n                listOf(last())\n        list = ArrayList<T>(resultSize)\n        if (this is List<T>) {\n            if (this is RandomAccess) {\n                for (index in n until size)\n                    list.add(this[index])\n            } else {\n                for (item in listIterator(n))\n                    list.add(item)\n            }\n        }\n        return list\n    }\n    else {\n        list = ArrayList<T>()\n        var count = 0\n        for (item in this) {\n            if (count >= n) list.add(item) else ++count\n        }\n        return list.optimizeReadOnlyList()\n    }\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n *\n */\n@throws IllegalArgumentException if [n] is negative.\n * @sample\n    samples.collections.Collections.Transformations.drop\n */\npublic fun <T> List<T>.dropLast(n: Int): List<T> {\n
```

```

require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n * \npublic inline fun <T>
List<T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n if (!isEmpty()) {\n val iterator =
listIterator(size)\n while (iterator.hasPrevious()) {\n if (!predicate(iterator.previous())) {\n return
take(iterator.nextIndex() + 1)\n }\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing
all elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n * \npublic inline fun <T> Iterable<T>.dropWhile(predicate:
(T) -> Boolean): List<T> {\n var yielding = false\n val list = ArrayList<T>()\n for (item in this)\n if
(yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n
}\n
return list\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n * \npublic inline fun <T> Iterable<T>.filter(predicate: (T) ->
Boolean): List<T> {\n return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n * \npublic inline fun <T>
Iterable<T>.filterIndexed(predicate: (index: Int, T) -> Boolean): List<T> {\n return
filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate] to
the given [destination].\n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic
inline fun <T, C : MutableCollection<in T>> Iterable<T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -
> Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n }\n return destination\n}\n\n/**\n * Returns a list containing all elements that are
instances of specified type parameter R.\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstance\n * \npublic inline fun <reified R>
Iterable<*>.filterIsInstance(): List<@kotlin.internal.NoInfer R> {\n return
filterIsInstanceTo(ArrayList<R>())\n}\n\n/**\n * Appends all elements that are instances of specified type
parameter R to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstanceTo\n * \npublic inline fun <reified R, C :
MutableCollection<in R>> Iterable<*>.filterIsInstanceTo(destination:
C): C {\n for (element in this) if (element is R) destination.add(element)\n return destination\n}\n\n/**\n *
Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n * \npublic inline fun <T> Iterable<T>.filterNot(predicate: (T) ->
Boolean): List<T> {\n return filterNotTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing all
elements that are not `null`.\n * \n * @sample samples.collections.Collections.Filtering.filterNotNull\n * \npublic
fun <T : Any> Iterable<T?>.filterNotNull(): List<T> {\n return filterNotNullTo(ArrayList<T>())\n}\n\n/**\n *
Appends all elements that are not `null` to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNullTo\n * \npublic fun <C : MutableCollection<in T>, T : Any>
Iterable<T?>.filterNotNullTo(destination: C): C {\n for (element in this) if (element != null)
destination.add(element)\n
return destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given
[destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n * \npublic inline fun <T, C :
MutableCollection<in T>> Iterable<T>.filterNotTo(destination: C, predicate: (T) -> Boolean): C {\n for (element
in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n * \n * @sample

```

```

samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <T, C : MutableCollection<in T>>
Iterable<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n  for (element in this) if (predicate(element))
destination.add(element)\n  return destination\n}\n\n/**\n * Returns a list containing elements at indices in the
specified [indices] range.\n *^\npublic fun <T> List<T>.slice(indices: IntRange): List<T> {\n  if
(indices.isEmpty()) return
listOf()\n  return this.subList(indices.start, indices.endInclusive + 1).toList()\n}\n\n/**\n * Returns a list
containing elements at specified [indices].\n *^\npublic fun <T> List<T>.slice(indices: Iterable<Int>): List<T> {\n
val size = indices.collectionSizeOrDefault(10)\n  if (size == 0) return emptyList()\n  val list =
ArrayList<T>(size)\n  for (index in indices) {\n    list.add(get(index))\n  }\n  return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun <T> Iterable<T>.take(n: Int): List<T> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  if (this is
Collection<T>) {\n    if (n >= size) return toList()\n    if (n == 1) return listOf(first())\n  }\n  var count = 0\n
val list = ArrayList<T>(n)\n  for (item in this)
{\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return
list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun <T> List<T>.takeLast(n: Int): List<T> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  val size =
size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(last())\n  val list = ArrayList<T>(n)\n  if (this is
RandomAccess) {\n    for (index in size - n until size)\n      list.add(this[index])\n  } else {\n    for (item in
listIterator(size - n))\n      list.add(item)\n  }\n  return list\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic
inline fun <T> List<T>.takeLastWhile(predicate: (T) -> Boolean): List<T> {\n  if (isEmpty())\n    return
emptyList()\n  val iterator = listIterator(size)\n  while (iterator.hasPrevious()) {\n    if
(!predicate(iterator.previous())) {\n      iterator.next()\n      val expectedSize = size - iterator.nextIndex()\n
if (expectedSize == 0) return emptyList()\n      return ArrayList<T>(expectedSize).apply {\n        while
(iterator.hasNext())\n          add(iterator.next())\n        }\n      }\n    }\n  }\n  return toList()\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic inline fun <T> Iterable<T>.takeWhile(predicate:
(T) -> Boolean): List<T> {\n  val list = ArrayList<T>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n *
Reverses elements in the list in-place.\n *^\npublic fun <T> MutableList<T>.reverse(): Unit\n\n/**\n *
Returns a list with elements in reversed order.\n *^\npublic fun <T> Iterable<T>.reversed(): List<T> {\n  if (this is
Collection && size <= 1) return toList()\n  val list = toMutableList()\n  list.reverse()\n  return list\n}\n\n/**\n *
Randomly shuffles elements in this list in-place using the specified [random] instance as the source of
randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n *^\n@SinceKotlin(\"1.3\")\npublic fun <T> MutableList<T>.shuffle(random: Random): Unit {\n  for (i in lastIndex
downTo 1) {\n    val j = random.nextInt(i + 1)\n    this[j] = this.set(i, this[j])\n  }\n}\n\n/**\n * Sorts elements
in the list in-place according to natural sort order of the value returned by specified [selector] function.\n * \n * The
sort is _stable_. It means that equal elements preserve their order
relative to each other after sorting.\n *^\npublic inline fun <T, R : Comparable<R>>
MutableList<T>.sortBy(crossinline selector: (T) -> R?): Unit {\n  if (size > 1)
sortWith(compareBy(selector))\n}\n\n/**\n * Sorts elements in the list in-place descending according to natural sort
order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal
elements preserve their order relative to each other after sorting.\n *^\npublic inline fun <T, R : Comparable<R>>
MutableList<T>.sortByDescending(crossinline selector: (T) -> R?): Unit {\n  if (size > 1)

```

`sortWith(compareByDescending(selector))` sorts elements in the list in-place descending according to their natural sort order. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

public fun <T : Comparable<T>> MutableList<T>.sortDescending(): Unit {
    sortWith(reverseOrder())
}

```

Returns a list of all elements sorted according to their natural sort order. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

public fun <T : Comparable<T>> Iterable<T>.sorted(): List<T> {
    if (this is Collection) {
        if (size <= 1) return this.toList()
        @Suppress("UNCHECKED_CAST")
        return (toArray<Comparable<T>>() as Array<T>).apply {
            sort()
        }.asList()
    }
    return toMutableList().apply { sort() }
}

```

Returns a list of all elements sorted according to natural sort order of the value returned by specified `[selector]` function. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

@sample
samples.collections.Collections.Sorting.sortedBy
public inline fun <T, R : Comparable<R>>
    Iterable<T>.sortedBy(crossinline selector: (T) -> R?): List<T> {
    return sortedWith(compareBy(selector))
}

```

Returns a list of all elements sorted descending according to natural sort order of the value returned by specified `[selector]` function. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

public inline fun <T, R : Comparable<R>> Iterable<T>.sortedByDescending(crossinline
    selector: (T) -> R?): List<T> {
    return sortedWith(compareByDescending(selector))
}

```

Returns a list of all elements sorted descending according to their natural sort order. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

public fun <T : Comparable<T>>
    Iterable<T>.sortedDescending(): List<T> {
    return sortedWith(reverseOrder())
}

```

Returns a list of all elements sorted according to the specified `[comparator]`. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

public fun <T> Iterable<T>.sortedWith(comparator: Comparator<in T>): List<T> {
    if (this is Collection) {
        if (size <= 1) return this.toList()
        @Suppress("UNCHECKED_CAST")
        return (toArray<Any?>() as Array<T>).apply {
            sortWith(comparator)
        }.asList()
    }
    return toMutableList().apply { sortWith(comparator) }
}

```

Returns an array of Boolean containing all of the elements of this collection.

```

public fun Collection<Boolean>.toBooleanArray(): BooleanArray {
    val result = BooleanArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Byte containing all of the elements of this collection.

```

public fun Collection<Byte>.toByteArray(): ByteArray {
    val result = ByteArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Char containing all of the elements of this collection.

```

public fun Collection<Char>.toCharArray(): CharArray {
    val result = CharArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Double containing all of the elements of this collection.

```

public fun Collection<Double>.toDoubleArray(): DoubleArray {
    val result = DoubleArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Float containing all of the elements of this collection.

```

public fun Collection<Float>.toFloatArray(): FloatArray {
    val result = FloatArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Int containing all of the elements of this collection.

```

public fun Collection<Int>.toIntArray(): IntArray {
    val result = IntArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Long containing all of the elements of this collection.

```

public fun Collection<Long>.toLongArray(): LongArray {
    val result = LongArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns an array of Short containing all of the elements of this collection.

```

public fun Collection<Short>.toShortArray(): ShortArray {
    val result = ShortArray(size)
    var index = 0
    for (element in this)
        result[index++] = element
    return result
}

```

Returns a `[Map]` containing key-value pairs provided by `[transform]` function applied to elements of the given collection. If any of two pairs would

have the same key the last one gets added to the map.

The returned map preserves the entry iteration order of the original collection.

`@sample samples.collections.Collections.Transformations.associate`

```

public inline fun <T, K, V> Iterable<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {
    val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity), transform)
}

```

Returns a [Map] containing the elements from the given collection indexed by the key returned from [keySelector] function applied to each element.

If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

The returned map preserves the entry iteration order of the original collection.

`@sample samples.collections.Collections.Transformations.associateBy`

```

public inline fun <T, K> Iterable<T>.associateBy(keySelector: (T) -> K): Map<K, T> {
    val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, T>(capacity), keySelector)
}

```

Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given collection.

If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

The returned map preserves the entry iteration order of the original collection.

`@sample samples.collections.Collections.Transformations.associateByWithValueTransform`

```

public inline fun <T, K, V> Iterable<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {
    val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)
}

```

Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given collection and value is the element itself.

If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

`@sample samples.collections.Collections.Transformations.associateByTo`

```

public inline fun <T, K, M : MutableMap<in K, in T>> Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K): M {
    for (element in this) {
        destination.put(keySelector(element), element)
    }
    return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function and value is provided by the [valueTransform] function applied to elements of the given collection.

If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

`@sample samples.collections.Collections.Transformations.associateByToWithValueTransform`

```

public inline fun <T, K, V, M : MutableMap<in K, in V>> Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {
    for (element in this) {
        destination.put(keySelector(element), valueTransform(element))
    }
    return destination
}

```

Populates and returns the [destination] mutable map with key-value pairs provided by [transform] function applied to each element of the given collection.

If any of two pairs would have the same key the last one gets added to the map.

`@sample samples.collections.Collections.Transformations.associateTo`

```

public inline fun <T, K, V, M : MutableMap<in K, in V>> Iterable<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {
    for (element in this) {
        destination += transform(element)
    }
    return destination
}

```

Returns a [Map] where keys are elements from the given collection and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original collection.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.3")
public inline fun <K, V> Iterable<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {
    val result = LinkedHashMap<K, V>(mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

```

Populates and returns the [destination] mutable map with key-value pairs for each element of the given collection, where key is the element itself and value is provided by the [valueSelector]


```

function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the
map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.3")\npublic inline fun <K, V, M : MutableMap<in K, in V>>
Iterable<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Appends all
elements to the given [destination] collection.\n */\npublic fun <T, C : MutableCollection<in T>>
Iterable<T>.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n }\n return
destination\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun <T> Iterable<T>.toHashSet():
HashSet<T> {\n return toCollection(HashSet<T>(mapCapacity(collectionSizeOrDefault(12))))\n}\n\n/**\n *
Returns a [List] containing all elements.\n */\npublic fun <T> Iterable<T>.toList(): List<T> {\n if (this is
Collection) {\n return when (size) {\n 0 -> emptyList()\n 1 -> listOf(if (this is List) get(0) else
iterator().next())\n else -> this.toMutableList()\n }\n }\n return
this.toMutableList().optimizeReadOnlyList()\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of
this
collection.\n */\npublic fun <T> Iterable<T>.toMutableList(): MutableList<T> {\n if (this is Collection<T>)\n
return this.toMutableList()\n return toCollection(ArrayList<T>())\n}\n\n/**\n * Returns a new [MutableList] filled
with all elements of this collection.\n */\npublic fun <T> Collection<T>.toMutableList(): MutableList<T> {\n
return ArrayList(this)\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element
iteration order of the original collection.\n */\npublic fun <T> Iterable<T>.toSet(): Set<T> {\n if (this is
Collection) {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(if (this is List) this[0] else
iterator().next())\n else -> toCollection(LinkedHashSet<T>(mapCapacity(size)))\n }\n }\n return
toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()\n}\n\n/**\n * Returns a single list of all elements
yielded from results of [transform] function being invoked on
each element of original collection.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n
*/\npublic inline fun <T, R> Iterable<T>.flatMap(transform: (T) -> Iterable<R>): List<R> {\n return
flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of
[transform] function being invoked on each element of original collection.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic inline fun <T, R>
Iterable<T>.flatMap(transform: (T) -> Sequence<R>): List<R> {\n return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original collection.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original collection, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli

```

```

c inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform: (index:
Int, T) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list =
transform(checkIndexOverflow(index++), element)\n    destination.addAll(list)\n  }\n  return
destination}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original collection, to the given [destination].\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.jvm.JvmName("\flatMapIndexedSequenceTo")\n @kotlin.internal.InlineOnly\n pu
blic

inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform: (index:
Int, T) -> Sequence<R>): C {\n  var index = 0\n  for (element in this) {\n    val list =
transform(checkIndexOverflow(index++), element)\n    destination.addAll(list)\n  }\n  return
destination}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original collection, to the given [destination].\n
*\n public inline fun <T, R, C : MutableCollection<in
R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n  for (element in this) {\n    val
list = transform(element)\n    destination.addAll(list)\n  }\n  return destination}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on
each element of original collection, to the given [destination].\n
*\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolution
ByLambdaReturnType\n @kotlin.jvm.JvmName("\flatMapSequenceTo")\n public inline fun <T, R, C :
MutableCollection<in R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {\n  for
(element in this) {\n    val list = transform(element)\n    destination.addAll(list)\n  }\n  return
destination}\n\n/**\n * Groups elements of the original collection by the key returned by the given [keySelector]
function\n * applied to each element and returns a map where each group key is associated with a list of
corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the
original collection.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n public inline
fun <T, K> Iterable<T>.groupBy(keySelector: (T) -> K): Map<K,
List<T>> {\n  return groupByTo(LinkedHashMap<K, MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups
values returned by the [valueTransform] function applied to each element of the original collection\n * by the key
returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is
associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the
keys produced from the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\n public inline fun <T, K, V>
Iterable<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups elements
of the original collection by the key returned by the given [keySelector] function\n * applied to each element and
puts to the [destination] map each group key associated with a list
of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n
*\n public inline fun <T, K, M : MutableMap<in K,
MutableList<T>>> Iterable<T>.groupByTo(destination: M, keySelector: (T) -> K): M {\n  for (element in this) {\n
    val key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<T>() }\n
list.add(element)\n  }\n  return destination}\n\n/**\n * Groups values returned by the [valueTransform] function
applied to each element of the original collection\n * by the key returned by the given [keySelector] function applied
to the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n
*\n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\n public inline fun <T, K, V, M :
MutableMap<in K, MutableList<V>>> Iterable<T>.groupByTo(destination:
M, keySelector: (T) -> K, valueTransform: (T) -> V): M {\n  for (element in this) {\n    val key =
keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<V>() }\n

```

```

list.add(valueTransform(element))\n } \n return destination\n}\n\n/**\n * Creates a [Grouping] source from a
collection to be used later with one of group-and-fold operations\n * using the specified [keySelector] function to
extract a key from each element.\n * \n * @sample samples.collections.Grouping.groupingByEachCount\n
*\n * @SinceKotlin("1.1")\npublic inline fun <T, K> Iterable<T>.groupingBy(crossinline keySelector: (T) -> K):
Grouping<T, K> {\n return object : Grouping<T, K> {\n override fun sourceIterator(): Iterator<T> =
this@groupingBy.iterator()\n override fun keyOf(element: T): K = keySelector(element)\n }\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element in the original
collection.\n
\n * \n * @sample samples.collections.Collections.Transformations.map\n *\npublic inline fun <T, R>
Iterable<T>.map(transform: (T) -> R): List<R> {\n return mapTo<ArrayList<R>>(collectionSizeOrDefault(10)),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element and its index in the original collection.\n * @param [transform] function that takes the index of an element
and the element itself\n * and returns the result of the transform applied to the element.\n *\npublic inline fun <T,
R> Iterable<T>.mapIndexed(transform: (index: Int, T) -> R): List<R> {\n return
mapIndexedTo<ArrayList<R>>(collectionSizeOrDefault(10), transform)\n}\n\n/**\n * Returns a list containing only
the non-null results of applying the given [transform] function\n * to each element and its index in the original
collection.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns
the result
of the transform applied to the element.\n *\npublic inline fun <T, R : Any>
Iterable<T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): List<R> {\n return
mapIndexedNotNullTo<ArrayList<R>>(), transform)\n}\n\n/**\n * Applies the given [transform] function to each
element and its index in the original collection\n * and appends only the non-null results to the given [destination].\n
\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of
the transform applied to the element.\n *\npublic inline fun <T, R : Any, C : MutableCollection<in R>>
Iterable<T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {\n forEachIndexed {
index, element -> transform(index, element)?.let { destination.add(it) } }\n return destination\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original collection\n * and appends the
results to the given [destination].\n * @param
[transform] function that takes the index of an element and the element itself\n * and returns the result of the
transform applied to the element.\n *\npublic inline fun <T, R, C : MutableCollection<in R>>
Iterable<T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {\n var index = 0\n for (item in
this)\n destination.add(transform(checkIndexOverflow(index++), item))\n return destination\n}\n\n/**\n *
Returns a list containing only the non-null results of applying the given [transform] function\n * to each element in
the original collection.\n * \n * @sample samples.collections.Collections.Transformations.mapNotNull\n *\npublic
inline fun <T, R : Any> Iterable<T>.mapNotNull(transform: (T) -> R?): List<R> {\n return
mapNotNullTo<ArrayList<R>>(), transform)\n}\n\n/**\n * Applies the given [transform] function to each element in
the original collection\n * and appends only the non-null results to the given [destination].\n *\npublic inline fun
<T, R
: Any, C : MutableCollection<in R>> Iterable<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {\n
forEach { element -> transform(element)?.let { destination.add(it) } }\n return destination\n}\n\n/**\n * Applies
the given [transform] function to each element of the original collection\n * and appends the results to the given
[destination].\n *\npublic inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.mapTo(destination: C,
transform: (T) -> R): C {\n for (item in this)\n destination.add(transform(item))\n return
destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original collection\n * into an
[IndexValue] containing the index of that element and the element itself.\n *\npublic fun <T>
Iterable<T>.withIndex(): Iterable<IndexedValue<T>> {\n return IndexingIterable { iterator() }\n}\n\n/**\n *
Returns a list containing only distinct elements from the given collection.\n * \n * Among equal elements of the
given collection,

```

only the first one will be present in the resulting list.\n * The elements in the resulting list are in the same order as they were in the source collection.\n * \n * @sample

```

samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \npublic fun <T> Iterable<T>.distinct(): List<T> {\n    return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only elements from the given collection\n * having distinct keys returned by the given [selector] function.\n * \n * Among elements of the given collection with equal keys, only the first one will be present in the resulting list.\n * The elements in the resulting list are in the same order as they were in the source collection.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \npublic inline fun <T, K> Iterable<T>.distinctBy(selector: (T) -> K): List<T> {\n    val set = HashSet<K>()\n    val list = ArrayList<T>()\n    for (e in this) {\n        val key = selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n/**\n * Returns a set containing all elements that are contained by both this collection and the specified collection.\n * \n * The returned set preserves the element iteration order of the original collection.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun <T> Iterable<T>.intersect(other: Iterable<T>): Set<T> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this collection and not contained by the specified collection.\n * \n * The returned set preserves the element iteration order of the original collection.\n * \npublic infix fun <T> Iterable<T>.subtract(other: Iterable<T>): Set<T> {\n    val set = this.toMutableSet()\n    set.removeAll(other)\n    return set\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given collection.\n * \n * The returned set preserves the element iteration order of the original collection.\n * \npublic fun <T> Iterable<T>.toMutableSet(): MutableSet<T> {\n    return when (this) {\n        is Collection<T> -> LinkedHashSet(this)\n        else -> toCollection(LinkedHashSet<T>())\n    }\n}\n\n/**\n * Returns a set containing all distinct elements from both collections.\n * \n * The returned set preserves the element iteration order of the original collection.\n * Those elements of the [other] collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set containing all elements that are contained in both collections use [intersect].\n * \npublic infix fun <T> Iterable<T>.union(other: Iterable<T>): Set<T> {\n    val set = this.toMutableSet()\n    set.addAll(other)\n    return set\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n * \npublic inline fun <T> Iterable<T>.all(predicate: (T) -> Boolean): Boolean {\n    if (this is Collection && isEmpty()) return true\n    for (element in this) if (!predicate(element)) return false\n    return true\n}\n\n/**\n * Returns `true` if collection has at least one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n * \npublic fun <T> Iterable<T>.any(): Boolean {\n    if (this is Collection) return !isEmpty()\n    return iterator().hasNext()\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n * \npublic inline fun <T> Iterable<T>.any(predicate: (T) -> Boolean): Boolean {\n    if (this is Collection && isEmpty()) return false\n    for (element in this) if (predicate(element)) return true\n    return false\n}\n\n/**\n * Returns the number of elements in this collection.\n * \npublic fun <T> Iterable<T>.count(): Int {\n    if (this is Collection) return size\n    var count = 0\n    for (element in this) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Returns the number of elements in this collection.\n * \n * \n * @kotlin.internal.InlineOnly\n * \npublic inline fun <T> Collection<T>.count(): Int {\n    return size\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n * \npublic inline fun <T> Iterable<T>.count(predicate: (T) -> Boolean): Int {\n    if (this is Collection && isEmpty()) return 0\n    var count = 0\n    for (element in this) if (predicate(element)) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the collection is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */

```

```

*public inline fun <T, R> Iterable<T>.fold(initial: R, operation: (acc: R, T) -> R): R {
    var accumulator = initial
    for (element in this) accumulator = operation(accumulator, element)
    return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original collection.

Returns the specified [initial] value if the collection is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

```

*public inline fun <T, R>
Iterable<T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {
    var index = 0
    var accumulator = initial
    for (element in this) accumulator = operation(checkIndexOverflow(index++), accumulator,
    element)
    return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element and current accumulator value.

Returns the specified [initial] value if the list is empty.

@param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.

```

*public inline fun <T, R>
List<T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {
    var accumulator = initial
    if (!isEmpty()) {
        val iterator = listIterator(size)
        while (iterator.hasPrevious()) {
            accumulator =
            operation(iterator.previous(), accumulator)
        }
    }
    return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original list and current accumulator value.

Returns the specified [initial] value if the list is empty.

@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

*public inline fun
<T, R> List<T>.foldRightIndexed(initial: R, operation: (index: Int, T, acc: R) -> R): R {
    var accumulator = initial
    if (!isEmpty()) {
        val iterator = listIterator(size)
        while (iterator.hasPrevious()) {
            val index = iterator.previousIndex()
            accumulator = operation(index, iterator.previous(), accumulator)
        }
    }
    return accumulator
}

```

Performs the given [action] on each element.

```

*internal.HidesMembers
*public inline fun <T> Iterable<T>.forEach(action: (T) -> Unit): Unit {
    for (element in this) action(element)
}

```

Performs the given [action] on each element, providing sequential index with the element.

@param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

*public inline fun <T> Iterable<T>.forEachIndexed(action:
(index: Int, T) -> Unit): Unit {
    var index = 0
    for (item in this) action(checkIndexOverflow(index++),
    item)
}

```

@Deprecated("Use maxOrNull instead.")

```

ReplaceWith("this.maxOrNull()")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")
@SinceKotlin("1.1")
public fun Iterable<Double>.max(): Double? {
    return
    maxOrNull()
}

```

@Deprecated("Use maxOrNull instead.")

```

ReplaceWith("this.maxOrNull()")
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")
@SinceKotlin("1.1")
public fun Iterable<Float>.max(): Float? {
    return
    maxOrNull()
}

```

@Deprecated("Use maxByOrNull instead.")

```

ReplaceWith("this.maxByOrNull(selector)")
@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince = "1.6")
public inline fun <T, R : Comparable<R>>
Iterable<T>.maxBy(selector: (T) -> R): T? {
    return maxByOrNull(selector)
}

```

Returns the first element yielding the largest value of the given function or null if there are no elements.

@sample samples.collections.Collections.Aggregates.maxByOrNull

```

*@SinceKotlin("1.4")
public inline fun <T, R :
Comparable<R>> Iterable<T>.maxByOrNull(selector: (T) -> R): T? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var maxElem = iterator.next()
    if (!iterator.hasNext()) return maxElem
    var maxV = selector(maxElem)
    do {
        val e = iterator.next()
        val v = selector(e)
        if (maxV < v) {
            maxElem = e
            maxV = v
        }
    } while (iterator.hasNext())
    return
    maxElem
}

```

Returns the largest value

among all values produced by [selector] function\n * applied to each element in the collection.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOf(selector: (T) ->
Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the collection.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result
is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*/
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOf(selector: (T) ->
Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the collection.\n * \n * @throws
NoSuchElementException if the collection is empty.\n
*/
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Iterable<T>.maxOf(selector:
(T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n    if
(maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each element in the collection or `null` if there are
no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*/
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOfOrNull(selector: (T)
-> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var maxValue =
selector(iterator.next())\n    while (iterator.hasNext())\n        {\n            val v = selector(iterator.next())\n
            maxValue = maxOf(maxValue, v)\n        }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the collection or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*/
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOfOrNull(selector: (T)
-> Float): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var maxValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each
element in the collection or `null` if there are no elements.\n
*/
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Iterable<T>.maxOfOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =
selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the collection.\n * \n * @throws

```

NoSuchElementException if the collection is empty.

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun <T, R> Iterable<T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(max, v) < 0) {\n            max = v\n        }\n    }\n    return max\n}\n/**\n * Returns the largest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
```

```
Iterable<T>.maxOfOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(max, v) < 0) {\n            max = v\n        }\n    }\n    return max\n}\n/**\n * Returns the largest element or `null` if there are no elements.\n * * If any of elements is `NaN` returns `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\npublic fun Iterable<Double>.maxOrNull(): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n/**\n * Returns the largest element or `null` if there are no elements.\n * * If any of elements is `NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun Iterable<Float>.maxOrNull(): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext())
```

```
{\n    val e = iterator.next()\n    max = maxOf(max, e)\n}\nreturn max\n}\n/**\n * Returns the largest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>>
```

```
Iterable<T>.maxOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n@Deprecated("Use maxWithOrNull instead.")
```

```
ReplaceWith("this.maxWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun <T> Iterable<T>.maxWith(comparator: Comparator<in T>): T? {\n    return maxWithOrNull(comparator)\n}\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun <T>
```

```
Iterable<T>.maxWithOrNull(comparator:
```

```
Comparator<in T>): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n@Deprecated("Use minOrNull instead.")
```

```
ReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Iterable<Double>.min(): Double? {\n    return minOrNull()\n}\n@Deprecated("Use minOrNull instead.")
```

```
ReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Iterable<Float>.min(): Float? {\n    return minOrNull()\n}\n@Deprecated("Use minOrNull instead.")
```

```
ReplaceWith("this.minOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun
```

```
<T : Comparable<T>> Iterable<T>.min(): T? {\n    return minOrNull()\n}\n@Deprecated("Use minByOrNull instead.")\nReplaceWith("this.minByOrNull(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic inline fun <T, R : Comparable<R>>
```

```
Iterable<T>.minBy(selector: (T) -> R): T? {\n    return minByOrNull(selector)\n}\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * * @sample
```

```

samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Iterable<T>.minByOrNull(selector: (T) -> R): T? {\n  val iterator = iterator()\n  if
(!iterator.hasNext()) return null\n  var minElem = iterator.next()\n  if (!iterator.hasNext()) return minElem\n  var
minValue = selector(minElem)\n  do {\n    val e = iterator.next()\n    val v = selector(e)\n    if (minValue >
v) {\n      minElem
= e\n      minValue = v\n    }\n  } while (iterator.hasNext())\n  return minElem\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the collection.\n * \n
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->
Double): Double {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw NoSuchElementException()\n  var
minValue = selector(iterator.next())\n  while (iterator.hasNext()) {\n    val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector]
function\n * applied to each element in the collection.\n * \n * If any of values produced by [selector] function is
`NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->
Float): Float {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw NoSuchElementException()\n  var
minValue = selector(iterator.next())\n  while (iterator.hasNext()) {\n    val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the collection.\n * \n * @throws
NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R : Comparable<R>> Iterable<T>.minOf(selector: (T) -> R): R {\n  val iterator = iterator()\n  if
(!iterator.hasNext()) throw NoSuchElementException()\n  var minValue = selector(iterator.next())\n  while
(iterator.hasNext()) {\n    val v = selector(iterator.next())\n    if (minValue > v) {\n      minValue = v\n
    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the collection or `null` if there are no elements.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOfOrNull(selector: (T)
-> Double): Double?
{\n  val iterator = iterator()\n  if (!iterator.hasNext()) return null\n  var minValue = selector(iterator.next())\n
while (iterator.hasNext()) {\n    val v = selector(iterator.next())\n    minValue = minOf(minValue, v)\n  }\n
return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the collection or `null` if there are no elements.\n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOfOrNull(selector: (T)
-> Float): Float? {\n  val iterator = iterator()\n  if (!iterator.hasNext()) return null\n  var minValue =
selector(iterator.next())\n  while (iterator.hasNext()) {\n    val v = selector(iterator.next())\n    minValue =
minOf(minValue,
v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the collection or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```



```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Iterable<T>.minOfOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =
selector(iterator.next())\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the collection.\n * \n * @throws
NoSuchElementException if the collection is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Iterable<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator
= iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var minValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if
(comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the collection or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Iterable<T>.minOfWithOrNull(comparator:
Comparator<in R>, selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n
*\n@SinceKotlin("1.4")\npublic fun Iterable<Double>.minOrNull(): Double? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if
there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n *\n@SinceKotlin("1.4")\npublic fun
Iterable<Float>.minOrNull():
Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var min = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun <T :
Comparable<T>> Iterable<T>.minOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (min > e) min = e\n
}\n    return min\n}\n\n@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\npublic fun <T> Iterable<T>.minWith(comparator: Comparator<in T>): T? {\n    return
minWithOrNull(comparator)\n}\n\n/**\n * Returns the first element having the smallest
value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic
fun <T> Iterable<T>.minWithOrNull(comparator: Comparator<in T>): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns `true` if
the collection has no elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n *\npublic fun
<T> Iterable<T>.none(): Boolean {\n    if (this is Collection) return isEmpty()\n    return
!iterator().hasNext()\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n *\npublic inline fun <T>
Iterable<T>.none(predicate: (T) -> Boolean): Boolean {\n    if (this is Collection && isEmpty()) return true\n    for
(element
in this) if (predicate(element)) return false\n    return true\n}\n\n/**\n * Performs the given [action] on each element
and returns the collection itself afterwards.\n * \n *\n@SinceKotlin("1.1")\npublic inline fun <T, C : Iterable<T>>

```



```
(!iterator.hasPrevious())\n    throw UnsupportedOperationException("Empty list can't be reduced.")\n    var accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        accumulator = operation(iterator.previous(), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with its index in the original list and current accumulator value.\n * \n * Throws an exception if this list is empty. If the list can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
```

```
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun <S, T : S> List<T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {\n    val iterator = listIterator(size)\n    if (!iterator.hasPrevious())\n        throw UnsupportedOperationException("Empty list can't be reduced.")\n    var accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        val index = iterator.previousIndex()\n        accumulator = operation(index, iterator.previous(), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with its index in the original list and current accumulator value.\n * \n * Returns `null` if the list is empty.\n * \n * @param [operation] function that takes
```

```
the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> List<T>.reduceRightIndexedOrNull(operation: (index: Int, T, acc: S) -> S): S? {\n    val iterator = listIterator(size)\n    if (!iterator.hasPrevious())\n        return null\n    var accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        val index = iterator.previousIndex()\n        accumulator = operation(index, iterator.previous(), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the list is empty.\n * \n * @param [operation] function that
```

```
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S> List<T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n    val iterator = listIterator(size)\n    if (!iterator.hasPrevious())\n        return null\n    var accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        accumulator = operation(iterator.previous(), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the
```

```
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n */\n@SinceKotlin("1.4")\npublic inline fun <T, R> Iterable<T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {\n    val estimatedSize = collectionSizeOrDefault(9)\n    if (estimatedSize == 0) return listOf(initial)\n    val result = ArrayList<R>(estimatedSize + 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original collection and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
```

```
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n */\n@SinceKotlin("1.4")\npublic inline fun <T, R> Iterable<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n    val estimatedSize = collectionSizeOrDefault(9)\n    if (estimatedSize == 0)
```

```

return listOf(initial)\n  val result = ArrayList<R>(estimatedSize + 1).apply { add(initial) }\n  var index = 0\n  var
accumulator = initial\n  for (element in this) {\n    accumulator = operation(index++, accumulator, element)\n
result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with the first element of this collection.\n * \n * Note that `acc`
value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and the element, and
calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Iterable<T>.runningReduce(operation: (acc: S, T) -> S): List<S> {\n  val iterator = this.iterator()\n  if
(!iterator.hasNext()) return emptyList()\n  var accumulator: S = iterator.next()\n  val result =
ArrayList<S>(collectionSizeOrDefault(10)).apply { add(accumulator) }\n  while (iterator.hasNext()) {\n
accumulator = operation(accumulator, iterator.next())\n  result.add(accumulator)\n  }\n  return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n
* to each element, its index in the original collection and current accumulator value that starts with the first element
of this collection.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise
it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic inline fun
<S, T : S> Iterable<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n  val iterator =
this.iterator()\n  if (!iterator.hasNext()) return emptyList()\n  var accumulator: S = iterator.next()\n  val result =
ArrayList<S>(collectionSizeOrDefault(10)).apply { add(accumulator) }\n  var index = 1\n  while
(iterator.hasNext()) {\n    accumulator = operation(index++, accumulator,
iterator.next())\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scan(initial: R, operation: (acc: R, T) -> R): List<R> {\n  return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element,
its index in the original collection and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n * \n * @Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Iterable<T>.sumBy(selector: (T) -> Int): Int {\n  var sum: Int = 0\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n * \n * @Deprecated("Use sumOf instead.\",

```

```

ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Iterable<T>.sumByDouble(selector: (T) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the collection.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Iterable<T>.sumOf(selector: (T) -> Double): Double {\n    var
sum: Double = 0.toDouble()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
collection.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Iterable<T>.sumOf(selector: (T) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Iterable<T>.sumOf(selector: (T) -> Long): Long {\n
var sum: Long = 0.toLong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
collection.\n
*\n*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.sumOf(selector: (T) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
collection.\n
*\n*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.sumOf(selector: (T) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns an original collection
containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.\n
*\n*\npublic fun <T : Any> Iterable<T?.>.requireNonNulls(): Iterable<T> {\n    for (element in this) {\n        if (element
== null) {\n            throw IllegalArgumentException("null element found in $this.")\n        }\n    }\n    @Suppress("UNCHECKED_CAST")\n    return this as Iterable<T>\n}\n\n/**\n * Returns an original collection
containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.\n
*\n*\npublic fun <T : Any> List<T?.>.requireNonNulls(): List<T> {\n    for (element in this) {\n        if (element ==
null) {\n            throw IllegalArgumentException("null
element found in $this.")\n        }\n    }\n    @Suppress("UNCHECKED_CAST")\n    return this as
List<T>\n}\n\n/**\n * Splits this collection into a list of lists each not exceeding the given [size].\n * \n * The last
list in the resulting list may have fewer elements than the given [size].\n * \n * @param size the number of elements
to take in each list, must be positive and can be greater than the number of elements in this collection.\n * \n *
@sample samples.collections.Collections.Transformations.chunked\n *\n*\n@SinceKotlin("1.2")\npublic fun <T>
Iterable<T>.chunked(size: Int): List<List<T>> {\n    return windowed(size, size, partialWindows = true)\n}\n\n/**\n
* Splits this collection into several lists each not exceeding the given [size]\n * and applies the given [transform]
function to an each.\n * \n * @return list of results of the [transform] applied to an each list.\n * \n * Note that the
list passed to the [transform] function is ephemeral and is valid

```

only inside that function.

You should not store it or allow it to escape in some way, unless you made a snapshot of it.

The last list may have fewer elements than the given [size].

@param size the number of elements to take in each list, must be positive and can be greater than the number of elements in this collection.

@sample samples.text.Strings.chunkedTransform

```


@SinceKotlin("1.2")
public fun <T, R>
Iterable<T>.chunked(size: Int, transform: (List<T>) -> R): List<R> {
    return windowed(size, size,
partialWindows = true, transform = transform)
}


```

Returns a list containing all elements of the original collection without the first occurrence of the given [element].

```


public operator fun <T>
Iterable<T>.minus(element: T): List<T> {
    val result = ArrayList<T>(collectionSizeOrDefault(10))
    var removed = false
    return this.filterTo(result) { if (!removed && it == element) { removed = true; false } else true }
}


```

Returns a list containing all elements of the original collection except the elements contained in the given [elements] array.

Before Kotlin 1.6, the [elements] array may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of `hashCode()` that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.

```


public operator fun <T>
Iterable<T>.minus(elements: Array<out T>): List<T> {
    if (elements.isEmpty()) return this.toList()
    val other = elements.convertToSetForSetOperation()
    return this.filterNot { it in other }
}


```

Returns a list containing all elements of the original collection except the elements contained in the given [elements] collection.

Before Kotlin 1.6, the [elements] collection may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of `hashCode()` that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.

```


public operator fun <T>
Iterable<T>.minus(elements: Iterable<T>): List<T> {
    val other = elements.convertToSetForSetOperationWith(this)
    if (other.isEmpty()) return this.toList()
    return this.filterNot { it in other }
}


```

Returns a list containing all elements of the original collection except the elements contained in the given [elements] sequence.

Before Kotlin 1.6, the [elements] sequence may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of `hashCode()` that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.

```


public operator fun <T>
Iterable<T>.minus(elements: Sequence<T>): List<T> {
    val other = elements.convertToSetForSetOperation()
    if (other.isEmpty()) return this.toList()
    return this.filterNot { it in other }
}


```

Returns a list containing all elements of the original collection without the first occurrence of the given [element].

```


@kotlin.internal.InlineOnly
public inline fun <T>
Iterable<T>.minusElement(element: T): List<T> {
    return minus(element)
}


```

Splits the original collection into pair of lists, where `first` list contains elements for which [predicate] yielded `true`, while `second` list contains elements for which [predicate] yielded `false`.

@sample samples.collections.Iterables.Operations.partition

```


public inline fun <T>
Iterable<T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {
    val first = ArrayList<T>()
    val second = ArrayList<T>()
    for (element in this) {
        if (predicate(element)) first.add(element)
        else second.add(element)
    }
    return Pair(first, second)
}


```

Returns a list containing all elements of the original collection and then the given [element].

```


public operator fun <T>
Iterable<T>.plus(element: T): List<T> {
    if (this is Collection) return this.plus(element)
    val result = ArrayList<T>()
    result.addAll(this)
    result.add(element)
    return result
}


```

Returns a list containing all elements of the original collection and then the given [element].

```


public operator fun <T>
Collection<T>.plus(element: T): List<T> {
    val result = ArrayList<T>(size + 1)
    result.addAll(this)
    result.add(element)
    return result
}


```

Returns a list containing all elements of the original collection and then all elements of the

```

given [elements] array.\n *^\npublic operator fun <T> Iterable<T>.plus(elements: Array<out T>): List<T> {\n  if
(this is Collection) return this.plus(elements)\n  val result = ArrayList<T>()\n  result.addAll(this)\n
result.addAll(elements)\n  return result\n}\n\n/**\n * Returns a list containing all elements of the original
collection and then all elements of the given [elements] array.\n *^\npublic operator fun <T>
Collection<T>.plus(elements: Array<out T>): List<T> {\n  val result = ArrayList<T>(this.size + elements.size)\n
result.addAll(this)\n  result.addAll(elements)\n  return result\n}\n\n/**\n * Returns a list containing all elements
of the original collection and then all elements of the given [elements] collection.\n *^\npublic operator fun <T>
Iterable<T>.plus(elements: Iterable<T>): List<T> {\n  if (this is Collection) return this.plus(elements)\n  val
result = ArrayList<T>()\n  result.addAll(this)\n  result.addAll(elements)\n  return result\n}\n\n/**\n
* Returns a list containing all elements of the original collection and then all elements of the given [elements]
collection.\n *^\npublic operator fun <T> Collection<T>.plus(elements: Iterable<T>): List<T> {\n  if (elements is
Collection) {\n    val result = ArrayList<T>(this.size + elements.size)\n    result.addAll(this)\n
result.addAll(elements)\n    return result\n  } else {\n    val result = ArrayList<T>(this)\n
result.addAll(elements)\n    return result\n  }\n}\n\n/**\n * Returns a list containing all elements of the original
collection and then all elements of the given [elements] sequence.\n *^\npublic operator fun <T>
Iterable<T>.plus(elements: Sequence<T>): List<T> {\n  val result = ArrayList<T>()\n  result.addAll(this)\n
result.addAll(elements)\n  return result\n}\n\n/**\n * Returns a list containing all elements of the original
collection and then all elements of the given [elements] sequence.\n *^\npublic operator
fun <T> Collection<T>.plus(elements: Sequence<T>): List<T> {\n  val result = ArrayList<T>(this.size + 10)\n
result.addAll(this)\n  result.addAll(elements)\n  return result\n}\n\n/**\n * Returns a list containing all elements
of the original collection and then the given [element].\n *^\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Iterable<T>.plusElement(element: T): List<T> {\n  return plus(element)\n}\n\n/**\n * Returns a list containing all
elements of the original collection and then the given [element].\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Collection<T>.plusElement(element: T): List<T> {\n  return plus(element)\n}\n\n/**\n * Returns a list of
snapshots of the window of the given [size]\n * sliding along this collection with the given [step], where each\n *
snapshot is a list.\n * \n * Several last lists may have fewer elements than the given [size].\n * \n * Both [size] and
[step] must be positive and can be greater than the number of elements
in this collection.\n * @param size the number of elements to take in each window\n * @param step the number of
elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls
whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't
be preserved\n * \n * @sample samples.collections.Sequences.Transformations.takeWindows\n
*^\n@SinceKotlin("1.2")\npublic fun <T> Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean
= false): List<List<T>> {\n  checkWindowSizeStep(size, step)\n  if (this is RandomAccess && this is List) {\n
val thisSize = this.size\n    val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n    val result
= ArrayList<List<T>>(resultCapacity)\n    var index = 0\n    while (index in 0 until thisSize) {\n    val
windowSize = size.coerceAtMost(thisSize - index)\n    if (windowSize < size && !partialWindows)\n    break\n    result.add(List(windowSize) { this[it + index] })\n    index += step\n    }\n    return result\n
}\n  val result = ArrayList<List<T>>()\n  windowedIterator(iterator(), size, step, partialWindows, reuseBuffer =
false).forEach {\n    result.add(it)\n  }\n  return result\n}\n\n/**\n * Returns a list of results of applying the
given [transform] function to\n * an each list representing a view over the window of the given [size]\n * sliding
along this collection with the given [step].\n * \n * Note that the list passed to the [transform] function is ephemeral
and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made
a snapshot of it.\n * Several last lists may have fewer elements than the given [size].\n * \n * Both [size] and [step]
must be positive and can be greater than the number of elements in this collection.\n * @param size the number of
elements to take in each
window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n *
@param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false`
which means partial windows won't be preserved\n * \n * @sample

```

```

samples.collections.Sequences.Transformations.averageWindows\n * \n @SinceKotlin("1.2")\n public fun <T, R>
Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) -> R):
List<R> {\n    checkWindowSizeStep(size, step)\n    if (this is RandomAccess && this is List) {\n        val thisSize =
this.size\n        val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n        val result =
ArrayList<R>(resultCapacity)\n        val window = MovingSubList(this)\n        var index = 0\n        while (index in 0
until thisSize) {\n            val windowSize = size.coerceAtMost(thisSize - index)\n            if (!partialWindows &&
windowSize < size) break\n
            window.move(index, index + windowSize)\n            result.add(transform(window))\n            index += step\n
        }\n        return result\n    }\n    val result = ArrayList<R>()\n    windowedIterator(iterator(), size, step,
partialWindows, reuseBuffer = true).forEach {\n        result.add(transform(it))\n    }\n    return result\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` collection and the [other] array with the same index.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \n public infix fun <T, R> Iterable<T>.zip(other: Array<out
R>): List<Pair<T, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from
the elements of `this` collection and the [other] array with the same index\n * using the provided [transform]
function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n
* \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n public inline fun <T, R,
V> Iterable<T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n    val arraySize = other.size\n
val list = ArrayList<V>(minOf(collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in this) {\n
if (i >= arraySize) break\n        list.add(transform(element, other[i++]))\n    }\n    return list\n}\n\n/**\n * Returns a
list of pairs built from the elements of `this` collection and [other] collection with the same index.\n * The returned
list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
* \n public infix fun <T, R> Iterable<T>.zip(other: Iterable<R>): List<Pair<T, R>> {\n    return zip(other) { t1, t2 ->
t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` collection and the [other] collection
with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n
* \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n public inline fun <T, R, V>
Iterable<T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n    val first = iterator()\n    val second
= other.iterator()\n    val list = ArrayList<V>(minOf(collectionSizeOrDefault(10),
other.collectionSizeOrDefault(10)))\n    while (first.hasNext() && second.hasNext()) {\n
list.add(transform(first.next(), second.next()))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs of each two
adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two
elements.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNext\n
* \n @SinceKotlin("1.2")\n public fun <T> Iterable<T>.zipWithNext(): List<Pair<T, T>> {\n    return zipWithNext
{ a, b -> a to b }\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to an
each pair of two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less
than two elements.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n
* \n @SinceKotlin("1.2")\n public inline fun <T, R> Iterable<T>.zipWithNext(transform: (a: T, b: T) -> R):
List<R> {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return emptyList()\n    val result =
mutableListOf<R>()\n    var current = iterator.next()\n    while (iterator.hasNext()) {\n        val next =
iterator.next()\n        result.add(transform(current, next))\n        current = next\n    }\n    return result\n}\n\n/**\n *
Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if
supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit],
in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults
to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n * \n public fun <T, A :
Appendable> Iterable<T>.joinTo(buffer: A, separator: CharSequence = ", ", prefix: CharSequence = "\", postfix:
CharSequence = "\"", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): A

```



```

{\n  buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count > 1)
buffer.append(separator)\n    if (limit < 0 || count <= limit) {\n      buffer.appendElement(element, transform)\n    } else break\n  }\n  if (limit >= 0 && count > limit) buffer.append(truncated)\n  buffer.append(postfix)\nreturn buffer\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be
appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n */\npublic fun <T>
Iterable<T>.joinToString(separator: CharSequence = ", ", prefix: CharSequence = "", postfix: CharSequence =
"", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): String {\n  return
joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Returns this
collection as an [Iterable].\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.asIterable():
Iterable<T> {\n  return this\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original collection returning
its elements when being iterated.\n * \n * @sample
samples.collections.Sequences.Building.sequenceFromCollection\n */\npublic fun
<T> Iterable<T>.asSequence(): Sequence<T> {\n  return Sequence { this.iterator() }\n}\n\n/**\n * Returns an
average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfByte")\npublic fun
Iterable<Byte>.average(): Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n
sum += element\n    checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*/\n@kotlin.jvm.JvmName("averageOfShort")\npublic fun Iterable<Short>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n
checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfInt")\npublic fun
Iterable<Int>.average(): Double {\n  var sum: Double
= 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n
checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfLong")\npublic fun
Iterable<Long>.average(): Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n
sum += element\n    checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*/\n@kotlin.jvm.JvmName("averageOfFloat")\npublic fun Iterable<Float>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n
checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfDouble")\npublic
fun Iterable<Double>.average(): Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this)
{\n    sum += element\n    checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum
/ count\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*/\n@kotlin.jvm.JvmName("sumOfByte")\npublic fun Iterable<Byte>.sum(): Int {\n  var sum: Int = 0\n  for
(element in this) {\n    sum += element\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all elements in the
collection.\n */\n@kotlin.jvm.JvmName("sumOfShort")\npublic fun Iterable<Short>.sum(): Int {\n  var sum: Int
= 0\n  for (element in this) {\n    sum += element\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all
elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfInt")\npublic fun Iterable<Int>.sum(): Int {\n  var
sum: Int = 0\n  for (element in this) {\n    sum += element\n
}\n  return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*/\n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Iterable<Long>.sum(): Long {\n  var sum: Long = 0L\n
for (element in this) {\n    sum += element\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all elements in
the collection.\n */\n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun Iterable<Float>.sum(): Float {\n  var

```

```

sum: Float = 0.0f\n  for (element in this) {\n    sum += element\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Iterable<Double>.sum(): Double {\n  var sum: Double = 0.0\n  for (element in this) {\n    sum += element\n  }\n  return sum\n}\n\n"/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\nimport kotlin.comparisons.naturalOrder\nimport kotlin.random.Random\n\n/**\n * Returns the array if it's not `null`, or an empty array otherwise.\n */\n@sample\nsamples.collections.Arrays.Usage.arrayOrEmpty\n\n/**\n * Returns a *typed* array containing all of the elements of this collection.\n */\n\n/**\n * Allocates an array of runtime type `T` having its size equal to the size of this collection\n * and populates the array with the elements of this collection.\n */\n@sample\nsamples.collections.Collections.Collections.collectionToTypedArray\n\n/**\n * Returns an immutable list containing only the specified object [element].\n */\n\npublic fun <T> listOf(element: T): List<T> =\n  arrayOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildListInternal(builderAction: MutableList<E>.() -> Unit): List<E> {\n  return\n  ArrayList<E>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>.() -> Unit): List<E> {\n  checkBuilderCapacity(capacity)\n  return\n  ArrayList<E>(capacity).apply(builderAction).build()\n}\n\n/**\n * Returns an immutable set containing only the specified object [element].\n */\n\npublic fun <T> setOf(element: T): Set<T> =\n  hashSetOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildSetInternal(builderAction: MutableSet<E>.() -> Unit): Set<E> {\n  return\n  LinkedHashSet<E>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>.() -> Unit): Set<E> {\n  return\n  LinkedHashSet<E>(capacity).apply(builderAction).build()\n}\n\n/**\n * Returns an immutable map, mapping only the specified key to the\n * specified value.\n */\n\npublic fun <K, V> mapOf(pair: Pair<K, V>): Map<K, V> =\n  hashMapOf(pair)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>.() -> Unit): Map<K, V> {\n  return\n  LinkedHashMap<K, V>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>.() -> Unit): Map<K, V> {\n  return\n  LinkedHashMap<K, V>(capacity).apply(builderAction).build()\n}\n\n/**\n * Fills the list with the provided [value].\n */\n
```

Each element in the list gets replaced with the [value].

```

@SinceKotlin("1.2")
public actual fun <T>
MutableList<T>.fill(value: T): Unit {
    for (index in 0..lastIndex) {
        this[index] = value
    }
}

```

Randomly shuffles elements in this list. See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm

```

@SinceKotlin("1.2")
public actual fun <T> MutableList<T>.shuffle(): Unit = shuffle(Random)

```

Returns a new list with the elements of this list randomly shuffled.

```

@SinceKotlin("1.2")
public actual fun
<T> Iterable<T>.shuffled(): List<T> = toMutableList().apply { shuffle() }

```

Sorts elements in the list in-place according to their natural sort order. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

@sample samples.collections.Collections.Sorting.sortMutableList

```

```

public actual fun <T : Comparable<T>> MutableList<T>.sort():
Unit {
    collectionsSort(this, naturalOrder())
}

```

Sorts elements in the list in-place according to the order specified with [comparator]. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

@sample samples.collections.Collections.Sorting.sortMutableListWith

```

```

public actual fun <T> MutableList<T>.sortWith(comparator: Comparator<in T>): Unit {
    collectionsSort(this, comparator)
}
private fun <T> collectionsSort(list: MutableList<T>, comparator:
Comparator<in T>) {
    if (list.size <= 1) return
    val array = copyToArray(list)
    sortArrayWith(array,
comparator)
    for (i in 0 until array.size) {
        list[i] = array[i]
    }
}
internal actual fun <T>
arrayOfNulls(reference: Array<T>, size: Int): Array<T> {
    return
arrayOfNulls<Any>(size).unsafeCast<Array<T>>()
}
@SinceKotlin("1.3")
@PublishedApi
@JsName("arrayCopy")
internal fun <T> arrayCopy(source:
Array<out T>, destination: Array<in T>, destinationOffset: Int, startIndex: Int, endIndex: Int) {
AbstractList.checkRangeIndexes(startIndex, endIndex, source.size)
    val rangeSize = endIndex - startIndex
AbstractList.checkRangeIndexes(destinationOffset, destinationOffset + rangeSize, destination.size)
    if (js("ArrayBuffer").isView(destination) && js("ArrayBuffer").isView(source)) {
        val subrange =
source.asDynamic().subarray(startIndex, endIndex)
        destination.asDynamic().set(subrange,
destinationOffset)
    } else {
        if (source !== destination || destinationOffset <= startIndex) {
            for
(index in 0 until rangeSize) {
                destination[destinationOffset + index] = source[startIndex + index]
            }
        } else {
            for (index in rangeSize - 1 downTo 0) {
                destination[destinationOffset + index] =
source[startIndex + index]
            }
        }
    }
}
no singleton
map implementation in js, return map as is
@Suppress("NOTHING_TO_INLINE")
internal actual inline fun
<K, V> Map<K, V>.toSingletonMapOrSelf(): Map<K, V> =
this
@Suppress("NOTHING_TO_INLINE")
internal actual inline fun <K, V> Map<out K,
V>.toSingletonMap(): Map<K, V> = this.toMutableMap()
@Suppress("NOTHING_TO_INLINE")
internal
actual inline fun <T> Array<out T>.copyToArrayOfAny(isVarargs: Boolean): Array<out Any?> =
if
(isVarargs) // no need to copy vararg array in JS
    this
    else
this.copyOf()
@PublishedApi
internal actual fun checkIndexOverflow(index: Int): Int {
    if (index < 0)
        throwIndexOverflow()
    return index
}
@PublishedApi
internal actual fun
checkCountOverflow(count: Int): Int {
    if (count < 0)
        throwCountOverflow()
    return
count
}
JS map and set implementations do not make use of capacities or load factors.
@PublishedApi
internal actual fun mapCapacity(expectedSize:
Int) = expectedSize
/**
 * Checks a collection builder function capacity argument.
 * In JS no validation is
made in Map/Set constructor yet.
@SinceKotlin("1.3")
@PublishedApi
internal fun
checkBuilderCapacity(capacity: Int) {
    require(capacity >= 0) { "capacity must be non-negative."
}
}
internal actual fun brittleContainsOptimizationEnabled(): Boolean = false"
/**
 * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("CollectionsKt")
package
kotlin.collections
/**
 * Returns the given iterator itself. This allows to use an instance of iterator in a `for`

```

```

loop.\n * @sample samples.collections.Iterators.iterator\n */\n@kotlin.internal.InlineOnly\npublic inline operator
fun <T> Iterator<T>.iterator(): Iterator<T> =
    this\n\n/**\n * Returns an [Iterator] that wraps each element produced by the original iterator\n * into an
[IndexValue] containing the index of that element and the element itself.\n */\n * @sample
samples.collections.Iterators.withIndexIterator\n */\npublic fun <T> Iterator<T>.withIndex():
Iterator<IndexedValue<T>> = IndexingIterator(this)\n\n/**\n * Performs the given [operation] on each element of
this [Iterator].\n */\n * @sample samples.collections.Iterators.forEachIterator\n */\npublic inline fun <T>
Iterator<T>.forEach(operation: (T) -> Unit): Unit {\n    for (element in this) operation(element)\n}\n\n/**\n *
Iterator transforming original `iterator` into iterator of [IndexedValue], counting index from zero.\n */\n\ninternal class
IndexingIterator<out T>(private val iterator: Iterator<T>) : Iterator<IndexedValue<T>> {\n    private var index =
0\n    final override fun hasNext(): Boolean = iterator.hasNext()\n    final override fun next(): IndexedValue<T> =
IndexedValue(checkIndexOverflow(index++),
    iterator.next())\n}\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ComparisonsKt")\n\npackage
kotlin.comparisons\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the
greater of two values.\n */\n * If values are equal, returns the first one.\n */\n\n@SinceKotlin("1.1")\npublic expect
fun <T : Comparable<T>> maxOf(a: T, b: T): T\n\n/**\n * Returns the greater of two values.\n
*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Byte, b: Byte):
Byte\n\n/**\n * Returns the greater of two values.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic
expect inline fun maxOf(a: Short, b: Short): Short\n\n/**\n * Returns the greater of two values.\n
*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Int, b: Int): Int\n\n
* Returns the greater of two values.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline
fun maxOf(a: Long, b: Long): Long\n\n/**\n * Returns the greater of two values.\n */\n * If either value is `NaN`,
returns `NaN`.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Float,
b: Float): Float\n\n/**\n * Returns the greater of two values.\n */\n * If either value is `NaN`, returns `NaN`.\n
*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Double, b: Double):
Double\n\n/**\n * Returns the greater of three values.\n */\n * If there are multiple equal maximal values, returns the
first of them.\n */\n\n@SinceKotlin("1.1")\npublic expect fun <T : Comparable<T>> maxOf(a: T,
b: T, c: T): T\n\n/**\n * Returns the greater of three values.\n
*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Byte, b: Byte, c: Byte):
Byte\n\n/**\n * Returns the greater of three values.\n
*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Short, b: Short, c:
Short): Short\n\n/**\n * Returns the greater of three values.\n
*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Int, b: Int, c: Int):
Int\n\n/**\n * Returns the greater of three values.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic
expect inline fun maxOf(a: Long, b: Long, c: Long): Long\n\n/**\n * Returns the greater of three values.\n */\n * If
any value is `NaN`, returns `NaN`.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline
fun maxOf(a: Float, b: Float, c: Float): Float\n\n/**\n * Returns the greater of three values.\n */\n * If any value is
`NaN`, returns
`NaN`.\n */\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Double, b:
Double, c: Double): Double\n\n/**\n * Returns the greater of three values according to the order specified by the
given [comparator].\n */\n * If there are multiple equal maximal values, returns the first of them.\n
*/\n\n@SinceKotlin("1.1")\npublic fun <T> maxOf(a: T, b: T, c: T, comparator: Comparator<in T>): T {\n    return
maxOf(a, maxOf(b, c, comparator), comparator)\n}\n\n/**\n * Returns the greater of two values according to the
order specified by the given [comparator].\n */\n * If values are equal, returns the first one.\n

```

*\n@SinceKotlin("1.1")\npublic fun <T> maxOf(a: T, b: T, comparator: Comparator<in T>): T {\n return if (comparator.compare(a, b) >= 0) a else b}\n\n**\n * Returns the greater of the given values.\n * \n * If there are multiple equal maximal values, returns the first of them.\n *\n@SinceKotlin("1.4")\npublic expect fun <T : Comparable<T>>

maxOf(a: T, vararg other: T): T\n\n**\n * Returns the greater of the given values.\n

*\n@SinceKotlin("1.4")\npublic expect fun maxOf(a: Byte, vararg other: Byte): Byte\n\n**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic expect fun maxOf(a: Short, vararg other: Short): Short\n\n**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic expect fun maxOf(a: Int, vararg other: Int): Int\n\n**\n * Returns the greater of the given values.\n *\n@SinceKotlin("1.4")\npublic expect fun maxOf(a: Long, vararg other: Long): Long\n\n**\n * Returns the greater of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.4")\npublic expect fun maxOf(a: Float, vararg other: Float): Float\n\n**\n * Returns the greater of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.4")\npublic expect fun maxOf(a: Double, vararg other: Double): Double\n\n**\n * Returns the greater of the given values according to the order specified by the given [comparator].\n * \n * If there are multiple equal maximal values, returns the first of them.\n *\n@SinceKotlin("1.4")\npublic fun <T> maxOf(a: T, vararg other: T, comparator: Comparator<in T>): T {\n var max = a\n for (e in other) if (comparator.compare(max, e) < 0) max = e\n return max}\n\n**\n * Returns the smaller of two values.\n * \n * If values are equal, returns the first one.\n *\n@SinceKotlin("1.1")\npublic expect fun <T : Comparable<T>> minOf(a: T, b: T): T\n\n**\n * Returns the smaller of two values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Byte, b: Byte): Byte\n\n**\n * Returns the smaller of two values.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Short, b: Short): Short\n\n**\n * Returns the smaller of two values.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Int, b: Int): Int\n\n**\n * Returns the smaller of two values.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Long, b: Long): Long\n\n**\n * Returns the smaller of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Float, b: Float): Float\n\n**\n * Returns the smaller of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Double, b: Double): Double\n\n**\n * Returns the smaller of three values.\n * \n * If there are multiple equal minimal values, returns the first of them.\n *\n@SinceKotlin("1.1")\npublic expect fun <T : Comparable<T>> minOf(a: T, b: T, c: T): T\n\n**\n * Returns the smaller of three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Byte, b: Byte, c: Byte): Byte\n\n**\n * Returns the smaller of three values.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Short, b: Short, c: Short): Short\n\n**\n * Returns the smaller of three values.\n

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Int, b: Int, c: Int): Int\n\n**\n * Returns the smaller of three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Long, b: Long, c: Long): Long\n\n**\n * Returns the smaller of three values.\n * \n * If any value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Float, b: Float, c: Float): Float\n\n**\n * Returns the smaller of three values.\n * \n * If any value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun minOf(a: Double, b: Double, c: Double): Double\n\n**\n * Returns the smaller of three values according to the order specified by the given [comparator].\n * \n * If there are multiple equal minimal values, returns the first of them.\n *\n@SinceKotlin("1.1")\npublic fun <T> minOf(a: T, b: T, c: T, comparator: Comparator<in T>): T {\n return minOf(a, minOf(b, c, comparator), comparator)\n}\n\n**\n * Returns the smaller of two values according to the order specified by the given [comparator].\n * \n * If values are

```

equal, returns the first one.\n *^@SinceKotlin("1.1")\npublic fun <T> minOf(a: T, b: T, comparator:
Comparator<in T>): T {\n    return if (comparator.compare(a, b) <= 0) a else b}\n}\n/**\n * Returns the smaller of
the given values.\n * \n * If there are multiple equal minimal values, returns the first of them.\n
*^@SinceKotlin("1.4")\npublic expect fun <T : Comparable<T>> minOf(a: T, vararg other: T): T\n/**\n *
Returns the smaller of the given values.\n *^@SinceKotlin("1.4")\npublic expect fun minOf(a: Byte, vararg
other:
Byte): Byte\n/**\n * Returns the smaller of the given values.\n *^@SinceKotlin("1.4")\npublic expect fun
minOf(a: Short, vararg other: Short): Short\n/**\n * Returns the smaller of the given values.\n
*^@SinceKotlin("1.4")\npublic expect fun minOf(a: Int, vararg other: Int): Int\n/**\n * Returns the smaller of
the given values.\n *^@SinceKotlin("1.4")\npublic expect fun minOf(a: Long, vararg other: Long):
Long\n/**\n * Returns the smaller of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*^@SinceKotlin("1.4")\npublic expect fun minOf(a: Float, vararg other: Float): Float\n/**\n * Returns the
smaller of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n *^@SinceKotlin("1.4")\npublic
expect fun minOf(a: Double, vararg other: Double): Double\n/**\n * Returns the smaller of the given values
according to the order specified by the given [comparator].\n * \n * If there are multiple equal minimal values,
returns the first
of them.\n *^@SinceKotlin("1.4")\npublic fun <T> minOf(a: T, vararg other: T, comparator: Comparator<in
T>): T {\n    var min = a\n    for (e in other) if (comparator.compare(min, e) > 0) min = e\n    return
min}\n}\n"/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*^@n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns the first non-null value produced by
[transform] function being applied to entries of this map in iteration order,\n * or throws
[NoSuchElementException] if no non-null value was produced.\n * \n *
@sample samples.collections.Collections.Transformations.firstNotNullOf\n
*^@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Any> Map<out K,
V>.firstNotNullOf(transform: (Map.Entry<K, V>) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the map was transformed to a non-null value.")}\n}\n/**\n * Returns
the first non-null value produced by [transform] function being applied to entries of this map in iteration order,\n
* or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*^@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Any> Map<out K,
V>.firstNotNullOfOrNull(transform: (Map.Entry<K, V>) -> R?): R? {\n    for (element in this) {\n        val result =
transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return null}\n}\n/**\n *
Returns a [List]
containing all key-value pairs.\n *^@npublic fun <K, V> Map<out K, V>.toList(): List<Pair<K, V>> {\n    if (size
== 0)\n        return emptyList()\n    val iterator = entries.iterator()\n    if (!iterator.hasNext())\n        return
emptyList()\n    val first = iterator.next()\n    if (!iterator.hasNext())\n        return listOf(first.toPair())\n    val result =
ArrayList<Pair<K, V>>(size)\n    result.add(first.toPair())\n    do {\n        result.add(iterator.next().toPair())\n    }
while (iterator.hasNext())\n    return result}\n}\n/**\n * Returns a single list of all elements yielded from results of
[transform] function being invoked on each entry of original map.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n *^@npublic inline fun <K, V, R> Map<out K,
V>.flatMap(transform: (Map.Entry<K, V>) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)}\n}\n/**\n * Returns a single list of all elements yielded from results of [transform] function
being invoked on each entry of original map.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n

```

```

*1.4@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolutionByLambdaReturnType@kotlin.jvm.JvmName("flatMapSequence")public inline fun <K, V, R> Map<out K, V>.flatMap(transform: (Map.Entry<K, V>) -> Sequence<R>): List<R> {
    return flatMapTo(ArrayList<R>(), transform)
}
* Appends all elements yielded from results of [transform] function being invoked on each entry of original map, to the given [destination].
@kotlin.jvm.JvmName("flatMapSequenceTo")public inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>) -> Iterable<R>): C {
    for (element in this) {
        val list = transform(element)
        destination.addAll(list)
    }
    return destination
}
* Appends all elements yielded from results of [transform] function being invoked on each entry of original map, to the given [destination].
*1.4@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolutionByLambdaReturnType@kotlin.jvm.JvmName("flatMapSequenceTo")public inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>) -> Sequence<R>): C {
    for (element in this) {
        val list = transform(element)
        destination.addAll(list)
    }
    return destination
}
* Returns a list containing the results of applying the given [transform] function to each entry in the original map.
* @sample
samples.collections.Maps.Transformations.mapToList
@kotlin.jvm.JvmName("mapTo")public inline fun <K, V, R> Map<out K, V>.map(transform: (Map.Entry<K, V>) -> R): List<R> {
    return mapTo(ArrayList<R>(size), transform)
}
* Returns a list containing only the non-null results of applying the given [transform] function to each entry in the original map.
* @sample
samples.collections.Maps.Transformations.mapNotNull
@kotlin.jvm.JvmName("mapNotNullTo")public inline fun <K, V, R : Any> Map<out K, V>.mapNotNull(transform: (Map.Entry<K, V>) -> R?): List<R> {
    return mapNotNullTo(ArrayList<R>(), transform)
}
* Applies the given [transform] function to each entry in the original map and appends only the non-null results to the given [destination].
@kotlin.jvm.JvmName("mapNotNullTo")public inline fun <K, V, R : Any, C : MutableCollection<in R>> Map<out K, V>.mapNotNullTo(destination: C, transform: (Map.Entry<K, V>) -> R?): C {
    forEach { element, value -> transform(element)?.let { destination.add(it) } }
    return destination
}
* Applies the given [transform] function to each entry of the original map and appends the results to the given [destination].
@kotlin.jvm.JvmName("mapTo")public inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.mapTo(destination: C, transform: (Map.Entry<K, V>) -> R): C {
    for (item in this) {
        destination.add(transform(item))
    }
    return destination
}
* Returns `true` if all entries match the given [predicate].
* @sample
samples.collections.Collections.Aggregates.all
@kotlin.jvm.JvmName("all")public inline fun <K, V> Map<out K, V>.all(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {
    if (isEmpty()) return true
    for (element in this) {
        if (!predicate(element)) return false
    }
    return true
}
* Returns `true` if map has at least one entry.
* @sample
samples.collections.Collections.Aggregates.any
@kotlin.jvm.JvmName("any")public fun <K, V> Map<out K, V>.any(): Boolean {
    return !isEmpty()
}
* Returns `true` if at least one entry matches the given [predicate].
* @sample
samples.collections.Collections.Aggregates.anyWithPredicate
@kotlin.jvm.JvmName("anyWithPredicate")public inline fun <K, V> Map<out K, V>.any(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {
    if (isEmpty()) return false
    for (element in this) {
        if (predicate(element)) return true
    }
    return false
}
* Returns the number of entries in this map.
@kotlin.jvm.JvmName("count")public inline fun <K, V> Map<out K, V>.count(): Int {
    return size
}
* Returns the number of entries matching the given [predicate].
@kotlin.jvm.JvmName("count")public inline fun <K, V> Map<out K, V>.count(predicate: (Map.Entry<K, V>) -> Boolean): Int {
    if (isEmpty()) return 0
    var count = 0
    for (element in this) {
        if (predicate(element)) ++count
    }
    return count
}
* Performs the given [action] on each entry.
@kotlin.jvm.JvmName("forEach")public inline fun <K, V> Map<out K, V>.forEach(action: (Map.Entry<K, V>) -> Unit): Unit {
    for (element in this) {
        action(element)
    }
}
@Deprecated("Use maxByOrNull instead.", ReplaceWith("this.maxByOrNull(selector)"))@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")@kotlin.jvm.JvmName("maxByOrNull")public inline fun <K, V, R : Comparable<R>> Map<out K, V>.maxBy(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? {
    return
}

```

```

maxByOrNull(selector)\n}\n\n/**\n
 * Returns the first entry yielding the largest value of the given function or `null` if there are no entries.\n * \n *
@sample samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out
K, V>.maxByOrNull(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? {\n    return
entries.maxByOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each entry in the map.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n * \n * @throws NoSuchElementException if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.maxOf(selector:
(Map.Entry<K, V>) -> Double): Double {\n    return entries.maxOf(selector)\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.maxOf(selector:
(Map.Entry<K, V>) -> Float): Float {\n    return entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * @throws
NoSuchElementException if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxOf(selector: (Map.Entry<K, V>) -> R):
R {\n    return entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value among all values produced by
[selector] function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K,
V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {\n    return
entries.maxOfOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V> Map<out K, V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Float): Float? {\n    return
entries.maxOfOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each entry in the map or `null` if there are no entries.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> R): R? {\n    return entries.maxOfOrNull(selector)\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each entry in the map.\n * \n * @throws NoSuchElementException if the map is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V, R> Map<out K, V>.maxOfWith(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) ->
R): R {\n    return entries.maxOfWith(comparator, selector)\n}\n\n/**\n * Returns the largest value according to the
provided [comparator]\n * among all values produced by [selector] function applied to each entry in the map or
`null` if there are no entries.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```



```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R> Map<out K,
V>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R? {\n    return
entries.maxOfWithOrNull(comparator, selector)\n}\n\n@Deprecated(\n"Use maxWithOrNull instead.\n",
ReplaceWith(\n"this.maxWithOrNull(comparator)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.4\n", errorSince
= \n"1.5\n", hiddenSince = \n"1.6\n")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K,
V>.maxWith(comparator:
    Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {\n    return maxWithOrNull(comparator)\n}\n\n/**\n *
Returns the first entry having the largest value according to the provided [comparator] or `null` if there are no
entries.\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V> Map<out K,
V>.maxWithOrNull(comparator: Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {\n    return
entries.maxWithOrNull(comparator)\n}\n\n@Deprecated(\n"Use minByOrNull instead.\n",
ReplaceWith(\n"this.minByOrNull(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.4\n", errorSince =
\n"1.5\n", hiddenSince = \n"1.6\n")\npublic inline fun <K, V, R : Comparable<R>> Map<out K, V>.minBy(selector:
(Map.Entry<K, V>) -> R): Map.Entry<K, V>? {\n    return minByOrNull(selector)\n}\n\n/**\n * Returns the first
entry yielding the smallest value of the given function or `null` if there are no entries.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V, R : Comparable<R>> Map<out
K, V>.minByOrNull(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? {\n    return
entries.minByOrNull(selector)\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each entry in the map.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n * \n * @throws NoSuchElementException if the map is empty.\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * \n * @OverloadResolution
ByLambdaReturnType\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V> Map<out K, V>.minOf(selector:
(Map.Entry<K, V>) -> Double): Double {\n    return entries.minOf(selector)\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * If any of values
produced by [selector] function is `NaN`, the
returned result is `NaN`.\n * \n * @throws NoSuchElementException if the map is empty.\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * \n * @OverloadResolution
ByLambdaReturnType\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V> Map<out K, V>.minOf(selector:
(Map.Entry<K, V>) -> Float): Float {\n    return entries.minOf(selector)\n}\n\n/**\n * Returns the smallest value
among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * @throws
NoSuchElementException if the map is empty.\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * \n * @OverloadResolution
ByLambdaReturnType\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minOf(selector: (Map.Entry<K, V>) -> R): R {\n    return entries.minOf(selector)\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each entry in the map or `null` if
there are no entries.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * \n * @OverloadResolution
ByLambdaReturnType\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V> Map<out K,
V>.minOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {\n    return
entries.minOfOrNull(selector)\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @SinceKotlin(\n"1.4\n")\n * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * \n * @OverloadResolution
ByLambdaReturnType\n * \n * @kotlin.internal.InlineOnly\n * \n * public inline fun <K, V> Map<out K,
V>.minOfOrNull(selector: (Map.Entry<K, V>) -> Float): Float? {\n    return
entries.minOfOrNull(selector)\n}\n\n/**\n * Returns

```

the smallest value among all values produced by [selector] function\n * applied to each entry in the map or `null` if there are no entries.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out K, V>.minOfOrNull(selector: (Map.Entry<K, V>) -> R): R? {\n    return entries.minOfOrNull(selector)\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]\n * function applied to each entry in the map.\n * \n * @throws NoSuchElementException if the map is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R> Map<out K, V>.minOfWith(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R {\n    return entries.minOfWith(comparator, selector)\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R> Map<out K, V>.minOfWithOrNull(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R? {\n    return entries.minOfWithOrNull(comparator, selector)\n}\n\n@Deprecated("Use minWithOrNull instead.", ReplaceWith("this.minWithOrNull(comparator)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun <K, V> Map<out K, V>.minWith(comparator: Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {\n    return minWithOrNull(comparator)\n}\n\n/**\n * Returns the first entry having the smallest value according to the provided [comparator]\n
```

```
or `null` if there are no entries.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.minWithOrNull(comparator: Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {\n    return entries.minWithOrNull(comparator)\n}\n\n/**\n * Returns `true` if the map has no entries.\n * \n * @sample samples.collections.Collections.Aggregates.none\n *\npublic fun <K, V> Map<out K, V>.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns `true` if no entries match the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n *\npublic inline fun <K, V> Map<out K, V>.none(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n    if (isEmpty()) return true\n    for (element in this) if (predicate(element)) return false\n    return true\n}\n\n/**\n * Performs the given [action] on each entry and returns the map itself afterwards.\n *\n@SinceKotlin("1.1")\npublic inline fun <K, V, M : Map<out K, V>> M.onEach(action:\n
```

```
(Map.Entry<K, V>) -> Unit): M {\n    return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each entry, providing sequential index with the entry,\n * and returns the map itself afterwards.\n * \n * @param [action] function that takes the index of an entry and the entry itself\n * and performs the action on the entry.\n *\n@SinceKotlin("1.4")\npublic inline fun <K, V, M : Map<out K, V>> M.onEachIndexed(action: (index: Int, Map.Entry<K, V>) -> Unit): M {\n    return apply {\n
```

```
entries.forEachIndexed(action) }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original map returning its entries when being iterated.\n *\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.asIterable(): Iterable<Map.Entry<K, V>> {\n    return entries\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original map returning its entries when being iterated.\n *\npublic fun <K, V> Map<out K, V>.asSequence(): Sequence<Map.Entry<K, V>> {\n    return entries.asSequence()\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n@npackage kotlin.text\n@n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:\n
```

```
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n// 10 mappings totally\ninternal fun Char.titlecaseImpl(): String {\n    val uppercase = uppercase()\n    if (uppercase.length > 1) {\n        return if (this == '\u0149') uppercase else uppercase[0] + uppercase.substring(1).lowercase()\n    }\n    return\n
```

```
}\n\nreturn if (this == '\u0149') uppercase else uppercase[0] + uppercase.substring(1).lowercase()\n}\n\nreturn\n
```

```

titlecaseChar().toString()\n\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * Converts this character
to lower case using Unicode mapping rules of the invariant locale.\n */\n@Deprecated("Use lowercaseChar()
instead.", ReplaceWith("lowercaseChar()"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun Char.toLowerCase(): Char =
lowercaseChar()\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the invariant
locale.\n */\n * This function performs one-to-one character mapping.\n * To support one-to-many character
mapping use the [lowercase] function.\n * If this character has no mapping equivalent, the character itself is
returned.\n */\n * @sample samples.text.Chars.toLowerCase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c actual inline fun Char.lowercaseChar(): Char = lowercase()[0]\n\n/**\n * Converts this character to lower case
using Unicode mapping rules of the invariant locale.\n */\n * This function supports one-to-many character mapping,
thus the length of the returned string can be greater than one.\n * For example, `'\u0130'.lowercase()` returns
`'\u0069\u0307'`,\n * where `'\u0130` is the LATIN CAPITAL LETTER I WITH DOT ABOVE character
(`\u0130`).\n * If this character has no lower case mapping, the result of `toString()` of this char is returned.\n */\n *
@sample samples.text.Chars.toLowerCase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c actual inline fun Char.lowercase(): String = toString().asDynamic().toLowerCase().unsafeCast<String>()\n\n/**\n
 * Converts this character to upper case using Unicode mapping rules of the invariant locale.\n
*\n@Deprecated("Use uppercaseChar() instead.",
ReplaceWith("uppercaseChar()"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun Char.toUpperCase(): Char =
uppercaseChar()\n\n/**\n * Converts this character to upper case using Unicode mapping rules
of the invariant locale.\n */\n * This function performs one-to-one character mapping.\n * To support one-to-many
character mapping use the [uppercase] function.\n * If this character has no mapping equivalent, the character itself
is returned.\n */\n * @sample samples.text.Chars.uppercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Char.uppercaseChar(): Char {\n    val uppercase = uppercase()\n    return if (uppercase.length > 1) this else
uppercase[0]\n}\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the invariant
locale.\n */\n * This function supports one-to-many character mapping, thus the length of the returned string can be
greater than one.\n * For example, `'\uFB00'.uppercase()` returns `'\u0046\u0046'`,\n * where `'\uFB00` is the
LATIN SMALL LIGATURE FF character (`\ufb00`).\n * If this character has no upper case mapping, the result of
`toString()` of this char is returned.\n */\n * @sample
samples.text.Chars.uppercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c actual inline fun Char.uppercase(): String = toString().asDynamic().toUpperCase().unsafeCast<String>()\n\n/**\n
 * Converts this character to title case using Unicode mapping rules of the invariant locale.\n */\n * This function
performs one-to-one character mapping.\n * To support one-to-many character mapping use the [titlecase]
function.\n * If this character has no mapping equivalent, the result of calling [uppercaseChar] is returned.\n */\n *
@sample samples.text.Chars.titlecase\n
*\n@SinceKotlin("1.5")\npublic actual fun Char.titlecaseChar(): Char =
titlecaseCharImpl()\n\n/**\n * Returns `true` if this character is a Unicode high-surrogate code unit (also known as
leading-surrogate code unit).\n */\n@kotlin.internal.InlineOnly\npublic actual fun Char.isHighSurrogate(): Boolean =
this in
Char.MIN_HIGH_SURROGATE..Char.MAX_HIGH_SURROGATE\n\n/**\n * Returns `true` if this
character is a Unicode low-surrogate code unit (also known as trailing-surrogate code unit).\n */\n@kotlin.internal.In
lineOnly\npublic actual fun Char.isLowSurrogate(): Boolean = this in
Char.MIN_LOW_SURROGATE..Char.MAX_LOW_SURROGATE\n\n/**\n * Returns the Unicode general
category of this character.\n */\n@SinceKotlin("1.5")\npublic actual val Char.category: CharCategory\n    get() =

```

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CharCategory.valueOf(getCategoryValue())\n\n**\n * Returns `true` if this character (Unicode code point) is
defined in Unicode.\n\n * A character is considered to be defined in Unicode if its [category] is not
[CharCategory.UNASSIGNED].\n\n * \n@SinceKotlin("1.5")\npublic actual fun Char.isDefined(): Boolean {\n    if
(this < "\u0080") {\n        return true\n    }\n    return getCategoryValue() !=
CharCategory.UNASSIGNED.value\n}\n\n**\n * Returns `true` if this character is a letter.\n\n * A character is
considered to be a letter if its [category] is [CharCategory.UPPERCASE_LETTER],\n\n *
[CharCategory.LOWERCASE_LETTER],
[CharCategory.TITLECASE_LETTER], [CharCategory.MODIFIER_LETTER], or
[CharCategory.OTHER_LETTER].\n\n * \n * @sample samples.text.Chars.isLetter\n
*\n@SinceKotlin("1.5")\npublic actual fun Char.isLetter(): Boolean {\n    if (this in 'a..'z' || this in 'A..'Z') {\n
return true\n    }\n    if (this < "\u0080") {\n        return false\n    }\n    return isLetterImpl()\n}\n\n**\n * Returns
`true` if this character is a letter or digit.\n\n * \n * @see isLetter\n\n * @see isDigit\n\n * \n * @sample
samples.text.Chars.isLetterOrDigit\n\n * \n@SinceKotlin("1.5")\npublic actual fun Char.isLetterOrDigit(): Boolean
{\n    if (this in 'a..'z' || this in 'A..'Z' || this in '0..'9') {\n        return true\n    }\n    if (this < "\u0080") {\n
return
false\n    }\n\n    return isDigitImpl() || isLetterImpl()\n}\n\n**\n * Returns `true` if this character is a digit.\n\n *
A character is considered to be a digit if its [category] is [CharCategory.DECIMAL_DIGIT_NUMBER].\n\n * \n *
@sample samples.text.Chars.isDigit\n
*\n@SinceKotlin("1.5")\npublic actual fun Char.isDigit(): Boolean {\n    if (this in '0..'9') {\n        return true\n
}\n    if (this < "\u0080") {\n        return false\n    }\n    return isDigitImpl()\n}\n\n**\n * Returns `true` if this
character is upper case.\n\n * A character is considered to be an upper case character if its [category] is
[CharCategory.UPPERCASE_LETTER],\n\n * or it has contributory property `Other_Uppercase` as defined by the
Unicode Standard.\n\n * \n * @sample samples.text.Chars.isUpperCase\n\n * \n@SinceKotlin("1.5")\npublic actual fun
Char.isUpperCase(): Boolean {\n    if (this in 'A..'Z') {\n        return true\n    }\n    if (this < "\u0080") {\n
return
false\n    }\n\n    return isUpperCaseImpl()\n}\n\n**\n * Returns `true` if this character is lower case.\n\n * A
character is considered to be a lower case character if its [category] is [CharCategory.LOWERCASE_LETTER],\n\n *
or it has contributory property `Other_Lowercase`
as defined by the Unicode Standard.\n\n * \n * @sample samples.text.Chars.isLowerCase\n
*\n@SinceKotlin("1.5")\npublic actual fun Char.isLowerCase(): Boolean {\n    if (this in 'a..'z') {\n        return
true\n    }\n    if (this < "\u0080") {\n        return false\n    }\n    return isLowerCaseImpl()\n}\n\n**\n * Returns
`true` if this character is a title case letter.\n\n * A character is considered to be a title case letter if its [category] is
[CharCategory.TITLECASE_LETTER].\n\n * \n * @sample samples.text.Chars.isTitleCase\n
*\n@SinceKotlin("1.5")\npublic actual fun Char.isTitleCase(): Boolean {\n    if (this < "\u0080") {\n        return
false\n    }\n    return getCategoryValue() == CharCategory.TITLECASE_LETTER.value\n}\n\n**\n * Returns
`true` if this character is an ISO control character.\n\n * A character is considered to be an ISO control character if
its [category] is [CharCategory.CONTROL],\n\n * meaning the Char is in the range `"\u0000..\u001F"`
or in the range `"\u007F..\u009F".\n\n * \n * @sample samples.text.Chars.isISOControl\n
*\n@SinceKotlin("1.5")\npublic actual fun Char.isISOControl(): Boolean {\n    return this <= "\u001F" || this in
"\u007F..\u009F"\n}\n\n**\n * Determines whether a character is whitespace according to the Unicode standard.\n\n *
Returns `true` if the character is whitespace.\n\n * \n * @sample samples.text.Chars.isWhitespace\n\n * \npublic actual
fun Char.isWhitespace(): Boolean = isWhitespaceImpl()", /*\n\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n\n * \n\n * \npackage kotlin.text\n\nimport kotlin.js.RegExp\n\n**\n * Converts
the characters in the specified array to a string.\n\n * \n@SinceKotlin("1.2")\n@Deprecated("Use
CharArray.concatToString() instead",
ReplaceWith("chars.concatToString()"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5")\npublic actual fun String(chars: CharArray): String {\n    var result = ""\n    for (char in
chars) {\n        result += char\n    }\n    return result\n}\n\n**\n * Converts the characters from a portion of the
specified array to a string.\n\n * \n * @throws IndexOutOfBoundsException if either [offset] or [length] are less than

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zero or `offset + length` is out of [chars] array bounds.
*/@SinceKotlin("1.2")@Deprecated("Use
CharArray.concatToString(startIndex, endIndex) instead", ReplaceWith("chars.concatToString(offset, offset +
length)"))@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5")
public actual fun String(chars:
CharArray, offset: Int, length: Int): String {
    if (offset < 0 || length < 0 || chars.size - offset < length)
        throw
IndexOutOfBoundsException("size: ${chars.size}; offset: $offset; length: $length")
    var result = ""
    for
(index in offset until offset + length) {
        result += chars[index]
    }
    return result
}

Concatenates characters in this [CharArray] into a String.
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)
public actual fun
CharArray.concatToString(): String {
    var result = ""
    for (char in this) {
        result += char
    }
    return result
}

Concatenates characters in this [CharArray] or its subrange into a String.
*/@param
startIndex the beginning (inclusive) of the subrange of characters, 0 by default.
*/@param
endIndex the end (exclusive) of the subrange of characters, size of this array by default.
*/@throws
IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the size of this array.
*/@throws
IllegalArgumentException if [startIndex] is greater than [endIndex].
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun CharArray.concatToString(startIndex:
Int = 0, endIndex: Int = this.size): String {
    AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)
    var result = ""
    for (index in startIndex until endIndex) {
        result += this[index]
    }
    return
result
}

Returns a [CharArray] containing characters of this string.
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)
public actual fun
String.toCharArray(): CharArray {
    return CharArray(length) { get(it) }
}

Returns a [CharArray]
containing characters of this string or its substring.
*/@param
startIndex the beginning (inclusive) of the substring, 0 by default.
*/@param
endIndex the end (exclusive) of the substring, length of this string by default.
*/@throws
IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the length
of this string.
*/@throws
IllegalArgumentException if [startIndex] is greater than [endIndex].
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public
actual fun String.toCharArray(startIndex: Int = 0, endIndex: Int = this.length): CharArray {
    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)
    return CharArray(endIndex - startIndex) {
        get(startIndex + it)
    }
}

Decodes a string from the bytes in UTF-8 encoding in this array.
*/@throws
Malformed byte sequences are replaced by the replacement char `      `.
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)
public actual fun
ByteArray.decodeToString(): String {
    return decodeUtf8(this, 0, size, false)
}

Decodes a string from
the bytes in UTF-8 encoding in this array or its subrange.
*/@param
startIndex the beginning (inclusive) of the subrange to decode, 0 by default.
*/@param
endIndex the end (exclusive) of the subrange to decode, size of this
array by default.
*/@param
throwOnInvalidSequence
specifies whether to throw an exception on malformed byte sequence or replace it by the replacement char
`      `.
*/@throws
IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater
than the size of this array.
*/@throws
IllegalArgumentException if [startIndex] is greater than [endIndex].
*/@throws
CharacterCodingException if the byte array contains malformed UTF-8 byte sequence and
[throwOnInvalidSequence] is true.
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun ByteArray.decodeToString(
    startIndex: Int = 0,
    endIndex: Int = this.size,
    throwOnInvalidSequence: Boolean = false): String {
    AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)
    return decodeUtf8(this, startIndex, endIndex,
throwOnInvalidSequence)
}

Encodes this string to an array of bytes in UTF-8 encoding.
*/@throws
Any malformed char sequence is replaced by the replacement byte sequence.
*/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)
public actual fun

```

```

String.encodeToByteArray(): ByteArray {
    return encodeUtf8(this, 0, length, false)
}

/** Encodes this string or its substring to an array of bytes in UTF-8 encoding.
 * @param startIndex the beginning (inclusive) of the substring to encode, 0 by default.
 * @param endIndex the end (exclusive) of the substring to encode, length of this string by default.
 * @param throwOnInvalidSequence specifies whether to throw an exception on malformed char sequence or replace.
 * @throws IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the length of this string.
 * @throws IllegalArgumentException if [startIndex] is greater than [endIndex].
 * @throws CharacterCodingException if this string contains malformed char sequence and [throwOnInvalidSequence] is true.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@Suppress("ACTUAL_FUNCTIONS_WITH_DEFAULT_ARGUMENTS")
public actual fun String.encodeToByteArray(
    startIndex: Int = 0,
    endIndex: Int = this.length,
    throwOnInvalidSequence: Boolean = false
): ByteArray {
    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)
    return encodeUtf8(this, startIndex, endIndex, throwOnInvalidSequence)
}

/** Returns a copy of this string converted to upper case using the rules of the default locale.
 * @Deprecated("Use uppercase() instead.", ReplaceWith("uppercase()"))
 * @DeprecatedSinceKotlin(warningSince = "1.5")
 * @kotlin.internal.InlineOnly
 * public actual inline fun String.toUpperCase(): String =
    asDynamic().toUpperCase()
 */
/** Returns a copy of this string converted to upper case using Unicode mapping rules of the invariant locale.
 * This function supports one-to-many and many-to-one character mapping, thus the length of the returned string can be different from the length of the original string.
 * @sample samples.text.Strings.uppercase
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public actual inline fun String.toUpperCase(): String =
    asDynamic().toUpperCase()
/** Returns a copy of this string converted to lower case using the rules of the default locale.
 * @Deprecated("Use lowercase() instead.", ReplaceWith("lowercase()"))
 * @DeprecatedSinceKotlin(warningSince = "1.5")
 * @kotlin.internal.InlineOnly
 * public actual inline fun String.toLowerCase(): String =
    asDynamic().toLowerCase()
 */
/** Returns a copy of this string converted to lower case using Unicode mapping rules of the invariant locale.
 * This function supports one-to-many and many-to-one character mapping, thus the length of the returned string can be different from the length of the original string.
 * @sample samples.text.Strings.lowercase
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public actual inline fun String.toLowerCase(): String =
    asDynamic().toLowerCase()
@kotlin.internal.InlineOnly
internal actual inline fun String.nativeIndexOf(str: String, fromIndex: Int): Int =
    asDynamic().indexOf(str, fromIndex)
@kotlin.internal.InlineOnly
internal actual inline fun String.nativeLastIndexOf(str: String, fromIndex: Int): Int =
    asDynamic().lastIndexOf(str, fromIndex)
@kotlin.internal.InlineOnly
internal inline fun String.nativeStartsWith(s: String, position: Int): Boolean =
    asDynamic().startsWith(s, position)
@kotlin.internal.InlineOnly
internal inline fun String.nativeEndsWith(s: String): Boolean =
    asDynamic().endsWith(s)
@kotlin.internal.InlineOnly
public actual inline fun String.substring(startIndex: Int): String =
    asDynamic().substring(startIndex)
@kotlin.internal.InlineOnly
public actual inline fun String.substring(startIndex: Int, endIndex: Int): String =
    asDynamic().substring(startIndex, endIndex)
@Deprecated("Use String.plus() instead", ReplaceWith("this + str"))
@DeprecatedSinceKotlin(warningSince = "1.6")
@kotlin.internal.InlineOnly
public inline fun String.concat(str: String): String =
    asDynamic().concat(str)
@Deprecated("Use Regex.findAll() instead or invoke matches() on String dynamically: this.asDynamic().match(regex)")
@DeprecatedSinceKotlin(warningSince = "1.6")
@kotlin.internal.InlineOnly
public inline fun String.match(regex: String): Array<String>? =
    asDynamic().match(regex)
//native public fun String.trim(): String
//TODO: String.replace to implement

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effective trimLeading and trimTrailing\n\n@kotlin.internal.InlineOnly\ninternal inline fun
String.nativeReplace(pattern: RegExp, replacement: String): String = asDynamic().replace(pattern,
replacement)\n\n/**\n * Compares two strings lexicographically, optionally ignoring case differences.\n *\n * If
[ignoreCase] is true, the result of `Char.uppercaseChar().lowercaseChar()`
on each character is compared.\n
*/\n@SinceKotlin("1.2")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun String.compareTo(other: String, ignoreCase: Boolean = false): Int {\n    if (ignoreCase) {\n        val n1 =
this.length\n        val n2 = other.length\n        val min = minOf(n1, n2)\n        if (min == 0) return n1 - n2\n        for
(index in 0 until min) {\n            var thisChar = this[index]\n            var otherChar = other[index]\n            if
(thisChar != otherChar) {\n                thisChar = thisChar.uppercaseChar()\n                otherChar =
otherChar.uppercaseChar()\n                if (thisChar != otherChar) {\n                    thisChar =
thisChar.lowercaseChar()\n                    otherChar = otherChar.lowercaseChar()\n                    if (thisChar !=
otherChar) {\n                        return thisChar.compareTo(otherChar)\n                    }\n                }\n            }\n        }\n        return n1 - n2\n    } else {\n        return compareTo(other)\n    }\n}\n\n/**\n * Returns `true` if the
contents of this char sequence are equal to the contents of the specified [other],\n * i.e. both char sequences contain
the same number of the same characters in the same order.\n *\n * @sample samples.text.Strings.contentEquals\n
*/\n@SinceKotlin("1.5")\npublic actual infix fun CharSequence?.contentEquals(other: CharSequence?): Boolean =
contentEqualsImpl(other)\n\n/**\n * Returns `true` if the contents of this char sequence are equal to the contents of
the specified [other], optionally ignoring case difference.\n *\n * @param ignoreCase `true` to ignore character case
when comparing contents.\n *\n * @sample samples.text.Strings.contentEquals\n
*/\n@SinceKotlin("1.5")\npublic
actual fun CharSequence?.contentEquals(other: CharSequence?, ignoreCase: Boolean): Boolean {\n    return if
(ignoreCase)\n        this.contentEqualsIgnoreCaseImpl(other)\n    else\n        this.contentEqualsImpl(other)\n}\n\nprivate val STRING_CASE_INSENSITIVE_ORDER =
Comparator<String> { a, b -> a.compareTo(b, ignoreCase = true) }\n\n@SinceKotlin("1.2")\npublic actual val
String.Companion.CASE_INSENSITIVE_ORDER: Comparator<String>\n    get() =
STRING_CASE_INSENSITIVE_ORDER\n\n"/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CharsKt")\n\npackage kotlin.text\n\n/**\n
* Returns the numeric value of the decimal digit that this Char represents.\n * Throws an exception if this Char is
not a valid decimal digit.\n *\n * A Char is considered to represent a decimal digit if [isDigit] is true for the Char.\n
*\n * In this case, the Unicode decimal digit value of the character is returned.\n *\n * @sample
samples.text.Chars.digitToInt\n
*/\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun Char.digitToInt(): Int {\n    return digitOf(this, 10).also {\n        if (it < 0) throw
IllegalArgumentException("Char $this is not a decimal digit")\n    }\n}\n\n/**\n * Returns the numeric value of the
digit that this Char represents in the specified [radix].\n * Throws an exception if the [radix] is not in the range
`2..36` or if this Char is not a valid digit in the specified [radix].\n *\n * A Char is considered to represent a digit in
the specified [radix] if at least one of the following is true:\n * - [isDigit] is `true` for the Char and the Unicode
decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is
returned.\n * - The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix +
'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.\n * - The Char is one of the lowercase Latin
letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is returned.\n * - The
Char is one of the fullwidth Latin capital letters "\uFF21" through "\uFF3A" and its [code] is less than `radix +
0xFF21 - 10`. In this case, `this.code - 0xFF21 + 10` is returned.\n * - The Char is one of the fullwidth Latin small
letters "\uFF41" through "\uFF5A" and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41
+ 10` is returned.\n *\n * @sample samples.text.Chars.digitToInt\n
*/\n

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*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToInt(radix: Int): Int {\n    return digitToIntOrNull(radix) ?: throw IllegalArgumentException("\Char $this is not a digit in the given radix=$radix")\n}\n\n/**\n * Returns the numeric value of the decimal digit that this Char represents, or `null` if this Char is not a valid decimal digit.\n * A Char is considered to represent a decimal digit if [isDigit] is true for the Char.\n * In this case, the Unicode decimal digit value of the character is returned.\n *\n * @sample samples.text.Chars.digitToIntOrNull\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToIntOrNull(): Int? {\n    return digitOf(this, 10).takeIf { it >= 0 }\n}\n\n/**\n * Returns the numeric value of the digit that this Char represents in the specified [radix], or `null` if this Char is not a valid digit in the specified [radix].\n * Throws an exception if the [radix] is not in the range `2..36`.\n * A Char is considered to represent a digit in the specified [radix] if at least one of the following is true:\n * - [isDigit] is `true` for the Char and the Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is returned.\n * - The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix + 'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.\n * - The Char is one of the lowercase Latin letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is returned.\n * - The Char is one of the fullwidth Latin capital letters '\uFF21' through '\uFF3A' and its [code] is less than `radix + 0xFF21 - 10`. In this case, `this.code - 0xFF21 + 10` is returned.\n * - The Char is one of the fullwidth Latin small letters '\uFF41' through '\uFF5A' and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41 + 10` is returned.\n *\n * @sample samples.text.Chars.digitToIntOrNull\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Char.digitToIntOrNull(radix: Int): Int? {\n    checkRadix(radix)\n    return digitOf(this, radix).takeIf { it >= 0 }\n}\n\n/**\n * Returns the Char that represents this decimal digit.\n * Throws an exception if this value is not in the range `0..9`.\n * If this value is in `0..9`, the decimal digit Char with code `0'.code + this` is returned.\n *\n * @sample samples.text.Chars.digitToChar\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(): Char {\n    if (this in 0..9) {\n        return '0' + this\n    }\n    throw IllegalArgumentException("\Int $this is not a decimal digit")\n}\n\n/**\n * Returns the Char that represents this numeric digit value in the specified [radix].\n * Throws an exception if the [radix] is not in the range `2..36` or if this value is not in the range `0` until radix`.\n * If this value is less than `10`, the decimal digit Char with code `0'.code + this` is returned.\n * Otherwise, the uppercase Latin letter with code `A'.code + this - 10` is returned.\n *\n * @sample samples.text.Chars.digitToChar\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(radix: Int): Char {\n    if (radix !in 2..36) {\n        throw IllegalArgumentException("Invalid radix: $radix. Valid radix values are in range 2..36")\n    }\n    if (this < 0 || this >= radix) {\n        throw IllegalArgumentException("Digit $this does not represent a valid digit in radix $radix")\n    }\n    return if (this < 10) {\n        '0' + this\n    } else {\n        'A' + this - 10\n    }\n}\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the invariant locale.\n *\n * @sample samples.text.Chars.lowercase\n */\n*\n@Deprecated("Use lowercaseChar() instead.")\nReplaceWith("lowercaseChar()")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun Char.toLowerCase(): Char\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the invariant locale.\n * This function performs one-to-one character mapping.\n * To support one-to-many character mapping use the [lowercase] function.\n * If this character has no mapping equivalent, the character itself is returned.\n *\n * @sample samples.text.Chars.lowercase\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Char.lowercaseChar(): Char\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the invariant locale.\n * This function supports one-to-many character mapping, thus the length of the returned string can be greater than one.\n * For example, `'\u0130'.lowercase()` returns `"\u0069\u0307"`, where

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`'\u0130'` is the LATIN CAPITAL LETTER I WITH DOT ABOVE character (`\ufffd\uuffd`).
 If this character has no lower case mapping, the result of `toString()` of this char is returned.
 @sample samples.text.Chars.lowercase

```

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^public expect fun
Char.lowercase(): String^
* Converts this character to upper case using Unicode mapping rules of the
invariant locale.
*^@Deprecated("Use uppercaseChar() instead.",
ReplaceWith("uppercaseChar()"))^@DeprecatedSinceKotlin(warningSince
= "1.5")^public expect fun Char.toUpperCase(): Char^
* Converts this character to upper case using
Unicode mapping rules of the invariant locale.
* This function performs one-to-one character mapping.
* To support one-to-many character mapping use the [uppercase] function.
* If this character has no mapping
equivalent, the character itself is returned.
* @sample samples.text.Chars.uppercase
*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^public expect fun
Char.uppercaseChar(): Char^
* Converts this character to upper case using Unicode mapping rules of the
invariant locale.
* This function supports one-to-many character mapping, thus the length of the returned
string can be greater than one.
* For example, '\uFB00'.uppercase() returns '\u0046\u0046', where
'\uFB00' is the LATIN SMALL LIGATURE FF character (\ufffd\uuffd\uuffd).
* If this character has no upper
case mapping,
the result of toString() of this char is returned.
* @sample samples.text.Chars.uppercase
*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^public expect fun
Char.uppercase(): String^
* Converts this character to title case using Unicode mapping rules of the
invariant locale.
* This function performs one-to-one character mapping.
* To support one-to-many
character mapping use the [titlecase] function.
* If this character has no mapping equivalent, the result of calling
[uppercaseChar] is returned.
* @sample samples.text.Chars.titlecase
*^@SinceKotlin("1.5")^public
expect fun Char.titlecaseChar(): Char^
* Converts this character to title case using Unicode mapping rules of
the invariant locale.
* This function supports one-to-many character mapping, thus the length of the returned
string can be greater than one.
* For example, '\uFB00'.titlecase() returns '\u0046\u0066', where
'\uFB00'
is the LATIN SMALL LIGATURE FF character (\ufffd\uuffd\uuffd).
* If this character has no title case
mapping, the result of [uppercase] is returned instead.
* @sample samples.text.Chars.titlecase
*^@SinceKotlin("1.5")^public fun Char.titlecase(): String = titlecaseImpl()^
* Concatenates this Char
and a String.
* @sample samples.text.Chars.plus
*^@kotlin.internal.InlineOnly^public inline operator fun
Char.plus(other: String): String = this.toString() + other^
* Returns `true` if this character is equal to the
[other] character, optionally ignoring character case.
* Two characters are considered equal ignoring case if
Char.uppercaseChar().lowercaseChar() on each character produces the same result.
* @param ignoreCase
`true` to ignore character case when comparing characters. By default `false`.
* @sample
samples.text.Chars.equals
*^public fun Char.equals(other: Char, ignoreCase: Boolean = false): Boolean {
  if
  (this ==
  other) return true
  if (!ignoreCase) return false
  val thisUpper = this.uppercaseChar()
  val otherUpper =
  other.uppercaseChar()
  return thisUpper == otherUpper || thisUpper.lowercaseChar() ==
  otherUpper.lowercaseChar()
}
* Returns `true` if this character is a Unicode surrogate code unit.
*^public fun Char.isSurrogate(): Boolean = this in Char.MIN_SURROGATE..Char.MAX_SURROGATE^
* Returns the Unicode general category of this character.
*^@SinceKotlin("1.5")^public expect val
Char.category: CharCategory^
* Returns `true` if this character (Unicode code point) is defined in
Unicode.
* A character is considered to be defined in Unicode if its [category] is not
[CharCategory.UNASSIGNED].
*^@SinceKotlin("1.5")^public expect fun Char.isDefined():
Boolean^
* Returns `true` if this character is a letter.
* A character is considered to be a letter if its
[category] is [CharCategory.UPPERCASE_LETTER], [CharCategory.LOWERCASE_LETTER],

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<@kotlin.internal.OnlyInputTypes T> Sequence<T>.contains(element: T): Boolean { \n    return indexOf(element)
>= 0\n}\n\n/**\n * Returns
an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this
sequence.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n *\npublic fun <T> Sequence<T>.elementAt(index: Int): T
{\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("Sequence doesn't contain element at
index $index.") }\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this sequence.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n *\npublic fun <T>
Sequence<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    if (index < 0)\n        return
defaultValue(index)\n    val iterator = iterator()\n    var count = 0\n    while (iterator.hasNext()) {\n        val element
= iterator.next()\n        if (index == count++)\n            return element\n    }\n    return defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null`
if the [index] is out of bounds of this sequence.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n *\npublic fun <T>
Sequence<T>.elementAtOrNull(index: Int): T? {\n    if (index < 0)\n        return null\n    val iterator = iterator()\n    var count = 0\n    while (iterator.hasNext()) {\n        val element = iterator.next()\n        if (index == count++)\n            return element\n    }\n    return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null`
if no such element was found.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.find\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Sequence<T>.find(predicate: (T) -> Boolean): T? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns the last
element matching the
given [predicate], or `null` if no such element was found.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.find\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Sequence<T>.findLast(predicate: (T) -> Boolean): T? {\n    return lastOrNull(predicate)\n}\n\n/**\n * Returns first
element.\n *\n * @throws [NoSuchElementException] if the sequence is empty.\n *\n * The operation is _terminal_.\n
*\n *\npublic fun <T> Sequence<T>.first(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        throw
NoSuchElementException("Sequence is empty.")\n    return iterator.next()\n}\n\n/**\n * Returns the first element
matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n *\n * The
operation is _terminal_.\n *\n *\npublic inline fun <T> Sequence<T>.first(predicate: (T) -> Boolean): T {\n    for
(element in this) if (predicate(element)) return element\n    throw NoSuchElementException("Sequence
contains no element matching the predicate.")\n}\n\n/**\n * Returns the first non-null value produced by
[transform] function being applied to elements of this sequence in iteration order,\n * or throws
[NoSuchElementException] if no non-null value was produced.\n *\n * The operation is _terminal_.\n *\n *\n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n
*\n *\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Sequence<T>.firstNotNullOf(transform: (T) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the sequence was transformed to a non-null value.")\n}\n\n/**\n * Returns the first non-null value produced by [transform] function being applied to elements of this sequence in
iteration order,\n * or `null` if no non-null value was produced.\n *\n * The operation is _terminal_.\n *\n *\n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n
*\n *\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R : Any> Sequence<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n    for (element in this)
{\n        val result = transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return
null\n}\n\n/**\n * Returns the first element, or `null` if the sequence is empty.\n *\n * The operation is _terminal_.\n
*\n *\npublic fun <T> Sequence<T>.firstOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        return null\n    return iterator.next()\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null`
if element was not found.\n *\n * The operation is _terminal_.\n *\n *\npublic inline fun <T>

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Sequence<T>.firstOrNull(predicate: (T) -> Boolean): T? {
    for (element in this) if (predicate(element)) return element
    return null
}

Returns first index of [element], or -1 if the sequence does not contain element.

The operation is _terminal_.

public fun <@kotlin.internal.OnlyInputTypes T> Sequence<T>.indexOf(element: T): Int {
    var index = 0
    for (item in this) {
        checkIndexOverflow(index)
        if (element == item) return index
        index++
    }
    return -1
}

Returns index of the first element matching the given [predicate], or -1 if the sequence does not contain such element.

The operation is _terminal_.

public inline fun <T> Sequence<T>.indexOfFirst(predicate: (T) -> Boolean): Int {
    var index = 0
    for (item in this) {
        checkIndexOverflow(index)
        if (predicate(item)) return index
        index++
    }
    return -1
}

Returns index of the last element matching the given [predicate], or -1 if the sequence does not contain such element.

The operation is _terminal_.

public inline fun <T> Sequence<T>.indexOfLast(predicate: (T) -> Boolean): Int {
    var lastIndex = -1
    var index = 0
    for (item in this) {
        checkIndexOverflow(index)
        if (predicate(item)) lastIndex = index
        index++
    }
    return lastIndex
}

Returns the last element.

The operation is _terminal_.

@throws NoSuchElementException if the sequence is empty.

@sample samples.collections.Collections.Elements.last

public fun <T> Sequence<T>.last(): T {
    val iterator = iterator()
    if (!iterator.hasNext()) throw NoSuchElementException("Sequence is empty.")
    var last = iterator.next()
    while (iterator.hasNext()) last = iterator.next()
    return last
}

Returns the last element matching the given [predicate].

The operation is _terminal_.

@throws NoSuchElementException if no such element is found.

@sample samples.collections.Collections.Elements.last

public inline fun <T> Sequence<T>.last(predicate: (T) -> Boolean): T {
    var last: T? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            last = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Sequence contains no element matching the predicate.")
    @Suppress("UNCHECKED_CAST") return last as T
}

Returns last index of [element], or -1 if the sequence does not contain element.

The operation is _terminal_.

public fun <@kotlin.internal.OnlyInputTypes T> Sequence<T>.lastIndexOf(element: T): Int {
    var lastIndex = -1
    var index = 0
    for (item in this) {
        checkIndexOverflow(index)
        if (element == item) lastIndex = index
        index++
    }
    return lastIndex
}

Returns the last element, or `null` if the sequence is empty.

The operation is _terminal_.

@sample samples.collections.Collections.Elements.last

public fun <T> Sequence<T>.lastOrNull(): T? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var last = iterator.next()
    while (iterator.hasNext()) last = iterator.next()
    return last
}

Returns the last element matching the given [predicate], or `null` if no such element was found.

The operation is _terminal_.

@sample samples.collections.Collections.Elements.last

public inline fun <T> Sequence<T>.lastOrNull(predicate: (T) -> Boolean): T? {
    var last: T? = null
    for (element in this) {
        if (predicate(element)) last = element
    }
    return last
}

Returns the single element, or throws an exception if the sequence is empty or has more than one element.

The operation is _terminal_.

public fun <T> Sequence<T>.single(): T {
    val iterator = iterator()
    if (!iterator.hasNext()) throw NoSuchElementException("Sequence is empty.")
    val single = iterator.next()
    if (iterator.hasNext()) throw IllegalArgumentException("Sequence has more than one element.")
    return single
}

Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.

The operation is _terminal_.

public inline fun <T> Sequence<T>.single(predicate: (T) -> Boolean): T {
    var single: T? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Sequence contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Sequence contains no element matching the predicate.")
    @Suppress("UNCHECKED_CAST") return single as T
}

Returns single element, or `null` if the

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sequence is empty or has more than one element.\n * The operation is _terminal_.\n */\npublic
fun <T> Sequence<T>.singleOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        return
null\n    val single = iterator.next()\n    if (iterator.hasNext())\n        return null\n    return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or more than one
element was found.\n * The operation is _terminal_.\n */\npublic inline fun <T>
Sequence<T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single: T? = null\n    var found = false\n    for
(element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n
found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a sequence containing
all elements except first [n] elements.\n * The operation is _intermediate_ and _stateless_.\n * \n * @throws
IllegalArgumentOutOfRangeException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*/\npublic fun <T> Sequence<T>.drop(n: Int): Sequence<T> {\n    require(n >= 0) { "\"Requested element count $n
is less than zero.\" }\n    return when {\n        n == 0 -> this\n        this is DropTakeSequence -> this.drop(n)\n
else -> DropSequence(this, n)\n    }\n}\n\n/**\n * Returns a sequence containing all elements except first elements
that satisfy the given [predicate].\n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*/\npublic fun <T> Sequence<T>.dropWhile(predicate: (T)
-> Boolean): Sequence<T> {\n    return DropWhileSequence(this, predicate)\n}\n\n/**\n * Returns a sequence
containing only elements matching the given [predicate].\n * The operation is _intermediate_ and _stateless_.\n
* \n * @sample samples.collections.Collections.Filtering.filter\n
*/\npublic fun <T> Sequence<T>.filter(predicate:
(T) -> Boolean): Sequence<T> {\n    return
FilteringSequence(this, true, predicate)\n}\n\n/**\n * Returns a sequence containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * The operation is _intermediate_ and _stateless_.\n
* \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*/\npublic fun <T>
Sequence<T>.filterIndexed(predicate: (index: Int, T) -> Boolean): Sequence<T> {\n    // TODO: Rewrite with
generalized MapFilterIndexingSequence\n    return
TransformingSequence(FilteringSequence(IndexingSequence(this), true, { predicate(it.index, it.value) }), { it.value
})\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * The operation is _terminal_.\n
* \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n
*/\npublic inline fun <T, C :
MutableCollection<in T>> Sequence<T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C
{\n    forEachIndexed { index, element ->\n        if (predicate(index, element)) destination.add(element)\n    }\n
return destination\n}\n\n/**\n * Returns a sequence containing all elements that are instances of specified type
parameter R.\n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstance\n
*/\npublic inline fun <reified R>
Sequence<*>.filterIsInstance(): Sequence<@kotlin.internal.NoInfer R> {\n
@Suppress(\"UNCHECKED_CAST\")\n    return filter { it is R } as Sequence<R>\n}\n\n/**\n * Appends all
elements that are instances of specified type parameter R to the given [destination].\n * The operation is
_terminal_.\n * \n * @sample samples.collections.Collections.Filtering.filterIsInstanceTo\n
*/\npublic inline fun <reified R, C : MutableCollection<in R>> Sequence<*>.filterIsInstanceTo(destination: C): C
{\n    for (element in this) if (element is R) destination.add(element)\n    return destination\n}\n\n/**\n * Returns a
sequence containing all elements not matching the given [predicate].\n * The operation is _intermediate_ and
_stateless_.\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*/\npublic fun <T>
Sequence<T>.filterNot(predicate: (T) -> Boolean): Sequence<T> {\n    return FilteringSequence(this, false,
predicate)\n}\n\n/**\n * Returns a sequence containing all elements that are not `null`.\n * The operation is
_intermediate_ and _stateless_.\n * \n * @sample samples.collections.Collections.Filtering.filterNotNull\n
*/\npublic fun <T : Any> Sequence<T?>.filterNotNull(): Sequence<T> {\n

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@Suppress("UNCHECKED_CAST")\n    return filterNot { it == null } as Sequence<T>\n}\n\n/**\n * Appends all
elements that are not `null`
to the given [destination].\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Filtering.filterNotNullTo\n *\n\npublic fun <C : MutableCollection<in T>, T : Any>
Sequence<T?>.filterNotNullTo(destination: C): C {\n    for (element in this) if (element != null)
destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not matching the given
[predicate] to the given [destination].\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Filtering.filterTo\n *\n\npublic inline fun <T, C : MutableCollection<in T>>
Sequence<T>.filterNotTo(destination: C, predicate: (T) -> Boolean): C {\n    for (element in this) if
(!predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Filtering.filterTo\n *\n\npublic inline fun
<T, C : MutableCollection<in T>> Sequence<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n    for
(element in this) if (predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Returns a
sequence containing first [n] elements.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @throws
IllegalArgumentException if [n] is negative.\n *\n * @sample
samples.collections.Collections.Transformations.take\n *\n\npublic fun <T> Sequence<T>.take(n: Int): Sequence<T>
{\n    require(n >= 0) { "Requested element count $n is less than zero." }\n    return when {\n        n == 0 ->
emptySequence()\n        this is DropTakeSequence -> this.take(n)\n        else -> TakeSequence(this, n)\n    }\n}\n\n/**\n * Returns a sequence containing first elements satisfying the given [predicate].\n *\n * The operation
is _intermediate_ and _stateless_.\n *\n * @sample samples.collections.Collections.Transformations.take\n
*\n\npublic fun <T> Sequence<T>.takeWhile(predicate:
(T) -> Boolean): Sequence<T> {\n    return TakeWhileSequence(this, predicate)\n}\n\n/**\n * Returns a sequence
that yields elements of this sequence sorted according to their natural sort order.\n *\n * The sort is _stable_. It
means that equal elements preserve their order relative to each other after sorting.\n *\n * The operation is
_intermediate_ and _stateful_.\n *\n\npublic fun <T : Comparable<T>> Sequence<T>.sorted(): Sequence<T> {\n    return object : Sequence<T> {\n        override fun iterator(): Iterator<T> {\n            val sortedList =
this@sorted.toList()\n            sortedList.sort()\n            return sortedList.iterator()\n        }\n    }\n}\n\n/**\n * Returns a sequence that yields elements of this sequence sorted according to natural sort order of the value
returned by specified [selector] function.\n *\n * The sort is _stable_. It means that equal elements preserve their
order relative to each other after sorting.\n *\n * The operation is
_intermediate_ and _stateful_.\n *\n * @sample samples.collections.Collections.Sorting.sortedBy\n *\n\npublic
inline fun <T, R : Comparable<R>> Sequence<T>.sortedBy(crossinline selector: (T) -> R?): Sequence<T> {\n    return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a sequence that yields elements of this sequence
sorted descending according to natural sort order of the value returned by specified [selector] function.\n *\n * The
sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n *\n * The
operation is _intermediate_ and _stateful_.\n *\n\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.sortedByDescending(crossinline selector: (T) -> R?): Sequence<T> {\n    return
sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a sequence that yields elements of this sequence
sorted descending according to their natural sort order.\n *\n * The sort is _stable_. It means that equal elements
preserve their order relative
to each other after sorting.\n *\n * The operation is _intermediate_ and _stateful_.\n *\n\npublic fun <T :
Comparable<T>> Sequence<T>.sortedDescending(): Sequence<T> {\n    return
sortedWith(reverseOrder())\n}\n\n/**\n * Returns a sequence that yields elements of this sequence sorted according
to the specified [comparator].\n *\n * The sort is _stable_. It means that equal elements preserve their order relative
to each other after sorting.\n *\n * The operation is _intermediate_ and _stateful_.\n *\n\npublic fun <T>
Sequence<T>.sortedWith(comparator: Comparator<in T>): Sequence<T> {\n    return object : Sequence<T> {\n        override fun iterator(): Iterator<T> {\n            val sortedList = this@sortedWith.toList()\n

```

```
sortedList.sortWith(comparator)\n        return sortedList.iterator()\n    }\n}\n\n/**\n * Returns a [Map]\n * containing key-value pairs provided by [transform] function\n * applied to elements of the given sequence.\n * \n * If any\n * of two pairs would have the same key the last one gets added to the map.\n * \n * The returned map preserves the\n * entry iteration order of the original sequence.\n * \n * The operation is _terminal_.\n * \n * @sample\n * samples.collections.Collections.Transformations.associate\n */\npublic inline fun <T, K, V>\nSequence<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {\n    return associateTo(LinkedHashMap<K,\n * V>(), transform)\n}\n\n/**\n * Returns a [Map] containing the elements from the given sequence indexed by the\n * key\n * returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the\n * same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry\n * iteration order of the original sequence.\n * \n * The operation is _terminal_.\n * \n * @sample\n * samples.collections.Collections.Transformations.associateBy\n */\npublic inline fun <T, K>\nSequence<T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n    return associateByTo(LinkedHashMap<K, T>(), keySelector)\n}\n\n/**\n * Returns a [Map] containing the\n * values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given\n * sequence.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to\n * the map.\n * \n * The returned map preserves the entry iteration order of the original sequence.\n * \n * The\n * operation is _terminal_.\n * \n * @sample\n * samples.collections.Collections.Transformations.associateByWithValueTransform\n */\npublic inline fun <T, K, V>\nSequence<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {\n    return\n * associateByTo(LinkedHashMap<K, V>(), keySelector, valueTransform)\n}\n\n/**\n * Populates and returns the\n * [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function applied to\n * each element of the given sequence\n * and value is the element itself.\n * \n * If any\n * two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The\n * operation is _terminal_.\n * \n * @sample\n * samples.collections.Collections.Transformations.associateByTo\n */\npublic inline fun <T, K, M : MutableMap<in K, in T>>\nSequence<T>.associateByTo(destination: M,\n * keySelector: (T) -> K): M {\n    for (element in this) {\n        destination.put(keySelector(element), element)\n    }\n    return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where\n * key is provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function\n * applied to elements of the given sequence.\n * \n * If any two elements would have the same key returned by\n * [keySelector] the last one gets added to the map.\n * \n * The operation is _terminal_.\n * \n * @sample\n * samples.collections.Collections.Transformations.associateByToWithValueTransform\n */\npublic inline fun <T, K,\n * V, M : MutableMap<in\n * K, in V>>\nSequence<T>.associateByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {\n    for (element in this) {\n        destination.put(keySelector(element), valueTransform(element))\n    }\n    return\n * destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by\n * [transform] function applied to each element of the given sequence.\n * \n * If any of two pairs would have the same\n * key the last one gets added to the map.\n * \n * The operation is _terminal_.\n * \n * @sample\n * samples.collections.Collections.Transformations.associateTo\n */\npublic inline fun <T, K, V, M : MutableMap<in\n * K, in V>>\nSequence<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {\n    for (element in this)\n * {\n        destination += transform(element)\n    }\n    return destination\n}\n\n/**\n * Returns a [Map] where keys are\n * elements from the given sequence and values are\n * produced by the [valueSelector] function\n * applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The\n * returned map preserves the entry iteration order of the original sequence.\n * \n * The operation is _terminal_.\n * \n * \n * @sample\n * samples.collections.Collections.Transformations.associateWith\n */\n@SinceKotlin("1.3")\npublic\n * inline fun <K, V>\nSequence<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {\n    val result =\n * LinkedHashMap<K, V>()\n    return associateWithTo(result, valueSelector)\n}\n\n/**\n * Populates and returns the\n * [destination] mutable map with key-value pairs for each element of the given sequence,\n * where key is the element
```

itself and value is provided by the [valueSelector] function applied to that key.

If any two elements are equal, the last one overwrites the former value in the map.

The operation is `_terminal_`.

`@sample`

```

samples.collections.Collections.Transformations.associateWithTo
*^@SinceKotlin("1.3")
npublic inline fun <K, V, M : MutableMap<in K, in V>> Sequence<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

```

Appends all elements to the given [destination] collection.

The operation is `_terminal_`.

```

npublic fun <T, C : MutableCollection<in T>> Sequence<T>.toCollection(destination: C): C {
    for (item in this) {
        destination.add(item)
    }
    return destination
}

```

Returns a new [HashSet] of all elements.

The operation is `_terminal_`.

```

npublic fun <T> Sequence<T>.toHashSet(): HashSet<T> {
    return toCollection(HashSet<T>())
}

```

Returns a [List] containing all elements.

The operation is `_terminal_`.

```

npublic fun <T> Sequence<T>.toList(): List<T> {
    return this.toMutableList().optimizeReadOnlyList()
}

```

Returns a new [MutableList] filled with all elements of this

```

sequence.

```

The operation is `_terminal_`.

```

npublic fun <T> Sequence<T>.toMutableList(): MutableList<T> {
    return toCollection(ArrayList<T>())
}

```

Returns a [Set] of all elements.

The returned set preserves the element iteration order of the original sequence.

The operation is `_terminal_`.

```

npublic fun <T> Sequence<T>.toSet(): Set<T> {
    return toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()
}

```

Returns a single sequence of all elements from results of [transform] function being invoked on each element of original sequence.

The operation is `_intermediate_` and `_stateless_`.

`@sample`

```

samples.collections.Collections.Transformations.flatMap
*^@SinceKotlin("1.4")
n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
n@OverloadResolutionByLambdaReturnType
n@kotlin.jvm.JvmName("flatMapIterable")
npublic fun <T, R> Sequence<T>.flatMap(transform: (T) -> Iterable<R>): Sequence<R> {
    return FlatteningSequence(this, transform, Iterable<R>::iterator)
}

```

Returns a single sequence of all elements from results of [transform] function being invoked on each element of original sequence.

The operation is `_intermediate_` and `_stateless_`.

`@sample`

```

samples.collections.Collections.Transformations.flatMap
npublic fun <T, R> Sequence<T>.flatMap(transform: (T) -> Sequence<R>): Sequence<R> {
    return FlatteningSequence(this, transform, Sequence<R>::iterator)
}

```

Returns a single sequence of all elements yielded from results of [transform] function being invoked on each element and its index in the original sequence.

The operation is `_intermediate_` and `_stateless_`.

`@sample`

```

samples.collections.Collections.Transformations.flatMapIndexed
*^@SinceKotlin("1.4")
n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
n@OverloadResolutionByLambdaReturnType
n@kotlin.jvm.JvmName("flatMapIndexedIterable")
npublic fun <T, R> Sequence<T>.flatMapIndexed(transform:
    (index: Int, T) -> Iterable<R>): Sequence<R> {
    return flatMapIndexed(this, transform, Iterable<R>::iterator)
}

```

Returns a single sequence of all elements yielded from results of [transform] function being invoked on each element and its index in the original sequence.

The operation is `_intermediate_` and `_stateless_`.

`@sample`

```

samples.collections.Collections.Transformations.flatMapIndexed
*^@SinceKotlin("1.4")
n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
n@OverloadResolutionByLambdaReturnType
n@kotlin.jvm.JvmName("flatMapIndexedSequence")
npublic fun <T, R> Sequence<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): Sequence<R> {
    return flatMapIndexed(this, transform, Sequence<R>::iterator)
}

```

Appends all elements yielded from results of [transform] function being invoked on each element and its index in the original sequence, to the given [destination].

The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")
n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
n@OverloadResolutionByLambdaReturnType
n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")
n@kotlin.internal.InlineOnly
npublic

```



```

c inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Iterable<R>): C { \n    var index = 0 \n    for (element in this) { \n        val list =
transform(checkIndexOverflow(index++), element) \n        destination.addAll(list) \n    } \n    return
destination \n } \n /** \n * Appends all elements yielded from results of [transform] function being invoked on each
element \n * and its index in the original sequence, to the given [destination]. \n * \n * The operation is _terminal_. \n
*\n@SinceKotlin("1.4") \n@OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n@OverloadResolution
ByLambdaReturnType \n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo") \n@kotlin.internal.InlineOnly \npu
blic

inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform: (index:
Int, T) -> Sequence<R>): C { \n    var index = 0 \n    for (element in this) { \n        val list =
transform(checkIndexOverflow(index++), element) \n        destination.addAll(list) \n    } \n    return
destination \n } \n /** \n * Appends all elements yielded from results of [transform] function being invoked on each
element of original sequence, to the given [destination]. \n * \n * The operation is _terminal_. \n
*\n@SinceKotlin("1.4") \n@OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n@OverloadResolution
ByLambdaReturnType \n@kotlin.jvm.JvmName("flatMapIterableTo") \npublic inline fun <T, R, C :
MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C { \n    for
(element in this) { \n        val list = transform(element) \n        destination.addAll(list) \n    } \n    return
destination \n } \n /** \n * Appends all elements yielded from
results of [transform] function being invoked on each element of original sequence, to the given [destination]. \n * \n
* The operation is _terminal_. \n * \n public inline fun <T, R, C : MutableCollection<in R>>
Sequence<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C { \n    for (element in this) { \n        val
list = transform(element) \n        destination.addAll(list) \n    } \n    return destination \n } \n /** \n * Groups elements of
the original sequence by the key returned by the given [keySelector] function \n * applied to each element and
returns a map where each group key is associated with a list of corresponding elements. \n * \n * The returned map
preserves the entry iteration order of the keys produced from the original sequence. \n * \n * The operation is
_terminal_. \n * \n * @sample samples.collections.Collections.Transformations.groupBy \n * \n public inline fun <T,
K> Sequence<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> { \n    return groupByTo(LinkedHashMap<K,
MutableList<T>>(), keySelector) \n } \n /** \n * Groups values returned by the [valueTransform] function applied to
each element of the original sequence \n * by the key returned by the given [keySelector] function applied to the
element \n * and returns a map where each group key is associated with a list of corresponding values. \n * \n * The
returned map preserves the entry iteration order of the keys produced from the original sequence. \n * \n * The
operation is _terminal_. \n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues \n * \n public inline fun <T, K, V>
Sequence<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> { \n    return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform) \n } \n /** \n * Groups elements
of the original sequence by the key returned by the given [keySelector] function \n * applied to each element and
puts to the [destination] map each group key associated with a list of corresponding
elements. \n * \n * @return The [destination] map. \n * \n * The operation is _terminal_. \n * \n * @sample
samples.collections.Collections.Transformations.groupBy \n * \n public inline fun <T, K, M : MutableMap<in K,
MutableList<T>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K): M { \n    for (element in this)
{ \n        val key = keySelector(element) \n        val list = destination.getOrPut(key) { ArrayList<T>() } \n
list.add(element) \n    } \n    return destination \n } \n /** \n * Groups values returned by the [valueTransform] function
applied to each element of the original sequence \n * by the key returned by the given [keySelector] function applied
to the element \n * and puts to the [destination] map each group key associated with a list of corresponding values. \n
* \n * @return The [destination] map. \n * \n * The operation is _terminal_. \n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues \n * \n public inline fun <T, K, V, M :
MutableMap<in

```

```

K, MutableList<V>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V):
M {
    for (element in this) {
        val key = keySelector(element)
        val list = destination.getOrPut(key) {
            ArrayList<V>()
        }
        list.add(valueTransform(element))
    }
    return destination
}

Creates a [Grouping] source from a sequence to be used later with one of group-and-fold operations using the specified [keySelector] function to extract a key from each element. The operation is _intermediate_ and _stateless_.

@sample samples.collections.Grouping.groupingByEachCount

public inline fun <T, K> Sequence<T>.groupBy(crossinline keySelector: (T) -> K): Grouping<T, K> {
    return object : Grouping<T, K> {
        override fun sourceIterator(): Iterator<T> = this@groupBy.iterator()
        override fun keyOf(element: T): K = keySelector(element)
    }
}

Returns a sequence containing the results of applying the given [transform] function to each element in the original sequence. The operation is _intermediate_ and _stateless_.

@sample samples.collections.Collections.Transformations.map

public fun <T, R> Sequence<T>.map(transform: (T) -> R): Sequence<R> {
    return TransformingSequence(this, transform)
}

Returns a sequence containing the results of applying the given [transform] function to each element and its index in the original sequence.

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element. The operation is _intermediate_ and _stateless_.

public fun <T, R> Sequence<T>.mapIndexed(transform: (index: Int, T) -> R): Sequence<R> {
    return TransformingIndexedSequence(this, transform)
}

Returns a sequence containing only the non-null results of applying the given [transform] function to each element and its index in the original sequence.

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element. The operation is _intermediate_ and _stateless_.

public fun <T, R : Any> Sequence<T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): Sequence<R> {
    return TransformingIndexedSequence(this, transform).filterNotNull()
}

Applies the given [transform] function to each element and its index in the original sequence and appends only the non-null results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element. The operation is _terminal_.

public inline fun <T, R : Any, C : MutableCollection<in R>> Sequence<T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {
    forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }
    return destination
}

Applies the given [transform] function to each element and its index in the original sequence and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element. The operation is _terminal_.

public inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {
    var index = 0
    for (item in this) {
        destination.add(transform(checkIndexOverflow(index++), item))
    }
    return destination
}

Returns a sequence containing only the non-null results of applying the given [transform] function to each element in the original sequence. The operation is _intermediate_ and _stateless_.

@sample samples.collections.Collections.Transformations.mapNotNull

public fun <T, R : Any> Sequence<T>.mapNotNull(transform: (T) -> R?): Sequence<R> {
    return TransformingSequence(this, transform).filterNotNull()
}

Applies the given [transform] function to each element in the original sequence and appends only the non-null results to the given [destination]. The operation is _terminal_.

public inline fun <T, R : Any, C : MutableCollection<in R>> Sequence<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {
    forEach { element -> transform(element)?.let { destination.add(it) } }
    return destination
}

Applies the given [transform] function to each element of the original sequence and appends the results to the given [destination]. The operation is _terminal_.

public inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.mapTo(destination: C, transform: (T) -> R): C {
    for (item in this) {

```

```

destination.add(transform(item))\n
    return destination\n}\n\n/**\n * Returns a sequence that wraps each element of the original sequence\n * into an [IndexedValue] containing the index of that element and the element itself.\n * \n * The operation is _intermediate_ and _stateless_.\n */\npublic fun <T> Sequence<T>.withIndex(): Sequence<IndexedValue<T>> {\n    return IndexingSequence(this)\n}\n\n/**\n * Returns a sequence containing only distinct elements from the given sequence.\n * \n * Among equal elements of the given sequence, only the first one will be present in the resulting sequence.\n * The elements in the resulting sequence are in the same order as they were in the source sequence.\n * \n * The operation is _intermediate_ and _stateful_.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun <T> Sequence<T>.distinct(): Sequence<T> {\n    return this.distinctBy { it }\n}\n\n/**\n * Returns a sequence containing only elements from the given sequence\n * having distinct keys returned by the given [selector] function.\n * \n * Among elements of the given sequence with equal keys, only the first one will be present in the resulting sequence.\n * The elements in the resulting sequence are in the same order as they were in the source sequence.\n * \n * The operation is _intermediate_ and _stateful_.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun <T, K> Sequence<T>.distinctBy(selector: (T) -> K): Sequence<T> {\n    return DistinctSequence(this, selector)\n}\n\n/**\n * Returns a new [MutableSet] containing all distinct elements from the given sequence.\n * \n * The returned set preserves the element iteration order of the original sequence.\n * \n * The operation is _terminal_.\n */\npublic fun <T> Sequence<T>.toMutableSet(): MutableSet<T> {\n    val set = LinkedHashSet<T>()\n    for (item in this) set.add(item)\n    return set\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * The operation is _terminal_.\n * \n * @sample\n samples.collections.Collections.Aggregates.all\n */\npublic inline fun <T> Sequence<T>.all(predicate: (T) -> Boolean): Boolean {\n    for (element in this) if (!predicate(element)) return false\n    return true\n}\n\n/**\n * Returns `true` if sequence has at least one element.\n * \n * The operation is _terminal_.\n * \n * @sample\n samples.collections.Collections.Aggregates.any\n */\npublic fun <T> Sequence<T>.any(): Boolean {\n    return iterator().hasNext()\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n * The operation is _terminal_.\n * \n * @sample\n samples.collections.Collections.Aggregates.anyWithPredicate\n */\npublic inline fun <T> Sequence<T>.any(predicate: (T) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return true\n    return false\n}\n\n/**\n * Returns the number of elements in this sequence.\n * \n * The operation is _terminal_.\n */\npublic fun <T> Sequence<T>.count(): Int {\n    var count = 0\n    for (element in this) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n * \n * The operation is _terminal_.\n */\npublic inline fun <T> Sequence<T>.count(predicate: (T) -> Boolean): Int {\n    var count = 0\n    for (element in this) if (predicate(element)) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the sequence is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * The operation is _terminal_.\n */\npublic inline fun <T, R> Sequence<T>.fold(initial: R, operation: (acc: R, T) -> R): R {\n    var accumulator = initial\n    for (element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original sequence.\n * \n * Returns the specified [initial] value if the sequence is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * The operation is _terminal_.\n */\npublic inline fun <T, R> Sequence<T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this) accumulator = operation(checkIndexOverflow(index++), accumulator, element)\n    return accumulator\n}\n\n/**\n * Performs the given [action] on each element.\n * \n * The operation is _terminal_.\n */\npublic inline fun <T> Sequence<T>.forEach(action: (T) -> Unit): Unit {\n    for

```

```

(element in this) action(element)\n\n/**\n * Performs the given [action] on each element, providing sequential
index with the element.\n * @param [action] function that takes the index of an element and the element itself\n *
and performs the action on the element.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T>
Sequence<T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {\n    var index = 0\n    for (item in this)
action(checkIndexOverflow(index++), item)\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Sequence<Double>.max(): Double? {\n    return
maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.1")\npublic fun Sequence<Float>.max(): Float? {\n
    return maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead.",
ReplaceWith("this.maxOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\npublic fun <T : Comparable<T>> Sequence<T>.max(): T? {\n    return
maxOrNull()\n}\n\n@Deprecated("Use maxByOrNull instead.",
ReplaceWith("this.maxByOrNull(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince = "1.6")\npublic inline fun <T, R : Comparable<R>> Sequence<T>.maxBy(selector: (T) ->
R): T? {\n    return maxByOrNull(selector)\n}\n\n/**\n * Returns the first element yielding the largest value of the
given function or `null` if there are no elements.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Sequence<T>.maxByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return
null\n    var maxElem = iterator.next()\n    if (!iterator.hasNext()) return maxElem\n    var maxValue =
selector(maxElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (maxValue < v) {\n
            maxElem = e\n            maxValue = v\n        }\n    } while (iterator.hasNext())\n    return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the
sequence.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\n * The operation is _terminal_.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.maxOf(selector: (T) ->
Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n
    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the sequence.\n *\n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException
if the sequence is empty.\n *\n * The operation is _terminal_.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.maxOf(selector: (T) ->
Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
        maxValue = maxOf(maxValue,
v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each element in the sequence.\n *\n * @throws NoSuchElementException if the sequence is
empty.\n *\n * The operation is _terminal_.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.maxOf(selector: (T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v
= selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return

```

`maxValue` Returns the largest value among all values produced by [selector] function applied to each element in the sequence or `null` if there are no elements.

* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.maxOrNull(selector:
(T) -> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        max =
maxOf(max, v)\n    }\n    return max\n}
    
```

Returns the largest value among all values produced by [selector] function applied to each element in the sequence or `null` if there are no elements.

* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.maxOrNull(selector: (T) -> Float): Float? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n
val v = selector(iterator.next())\n    max = maxOf(max, v)\n    }\n    return max\n}
    
```

Returns the largest value among all values produced by [selector] function applied to each element in the sequence or `null` if there are no elements.

* The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.maxOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (max < v) {\n            max =
v\n        }\n    }\n    return max\n}
    
```

Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the sequence.

* @throws `NoSuchElementException` if the sequence is empty.

* The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.maxWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var max = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(max, v) < 0) {\n
max = v\n        }\n    }\n    return max\n}
    
```

Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the sequence or `null` if there are no elements.

* The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.maxWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var max = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(max, v) < 0) {\n
max = v\n        }\n    }\n    return max\n}
    
```

Returns the largest element or `null` if there are no elements.

* If any of elements is `NaN` returns `NaN`.

* The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")\npublic fun
Sequence<Double>.maxOrNull(): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max =
maxOf(max, e)\n    }\n    return max\n}
    
```

Returns the largest element or `null` if there are no elements.

* If any of elements is `NaN` returns `NaN`.

* The operation is `_terminal_`.

```

*^@SinceKotlin("1.4")\npublic fun
Sequence<Float>.maxOrNull(): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max =
maxOf(max, e)\n    }\n    return max\n}
    
```

```

} \n return max \n } \n \n /** \n * Returns the largest element or `null` if there are no elements. \n * \n * The operation is
_terminal_. \n * \n * @SinceKotlin("1.4") \n public fun <T : Comparable<T>>
Sequence<T>.maxOrNull(): T? { \n val iterator = iterator() \n if (!iterator.hasNext()) return null \n var max =
iterator.next() \n while (iterator.hasNext()) { \n val e = iterator.next() \n if (max < e) max = e \n } \n
return max \n } \n \n @Deprecated("Use maxWithOrNull instead."),
ReplaceWith("this.maxWithOrNull(comparator)") \n \n @DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6") \n public fun <T> Sequence<T>.maxWith(comparator: Comparator<in T>): T? { \n
return maxWithOrNull(comparator) \n } \n \n /** \n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements. \n * \n * The operation is _terminal_. \n
* \n * @SinceKotlin("1.4") \n public fun <T> Sequence<T>.maxWithOrNull(comparator: Comparator<in T>): T? { \n
val iterator = iterator() \n if (!iterator.hasNext()) return null \n var max = iterator.next() \n while
(iterator.hasNext()) { \n val e = iterator.next() \n
if (comparator.compare(max, e) < 0) max = e \n } \n return max \n } \n \n @Deprecated("Use minOrNull
instead."), ReplaceWith("this.minOrNull()") \n \n @DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince = "1.6") \n @SinceKotlin("1.1") \n public fun Sequence<Double>.min(): Double? { \n return
minOrNull() \n } \n \n @Deprecated("Use minOrNull instead."),
ReplaceWith("this.minOrNull()") \n \n @DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6") \n @SinceKotlin("1.1") \n public fun Sequence<Float>.min(): Float? { \n return
minOrNull() \n } \n \n @Deprecated("Use minOrNull instead."),
ReplaceWith("this.minOrNull()") \n \n @DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6") \n public fun <T : Comparable<T>> Sequence<T>.min(): T? { \n return
minOrNull() \n } \n \n @Deprecated("Use minByOrNull instead."),
ReplaceWith("this.minByOrNull(selector)") \n \n @DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince = "1.6") \n public inline fun <T, R : Comparable<R>>
Sequence<T>.minBy(selector: (T) -> R): T? { \n return minByOrNull(selector) \n } \n \n /** \n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements. \n * \n * The operation is
_terminal_. \n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull \n
* \n * @SinceKotlin("1.4") \n public inline fun <T, R : Comparable<R>> Sequence<T>.minByOrNull(selector: (T) ->
R): T? { \n val iterator = iterator() \n if (!iterator.hasNext()) return null \n var minElem = iterator.next() \n
if (!iterator.hasNext()) return minElem \n var minValue = selector(minElem) \n do { \n val e = iterator.next() \n
val v = selector(e) \n if (minValue > v) { \n minElem = e \n minValue = v \n } \n } while
(iterator.hasNext()) \n return minElem \n } \n \n /** \n * Returns the smallest value among all values
produced by [selector] function \n * applied to each element in the sequence. \n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`. \n * \n * @throws NoSuchElementException if the
sequence is empty. \n * \n * The operation is _terminal_. \n
* \n * @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <T> Sequence<T>.minOf(selector: (T) ->
Double): Double { \n val iterator = iterator() \n if (!iterator.hasNext()) throw NoSuchElementException() \n var
minValue = selector(iterator.next()) \n while (iterator.hasNext()) { \n val v = selector(iterator.next()) \n
minValue = minOf(minValue, v) \n } \n return minValue \n } \n \n /** \n * Returns the smallest value among all
values produced by [selector] function \n * applied to each element in the sequence. \n * \n * If any of values
produced by [selector] function is `NaN`, the
returned result is `NaN`. \n * \n * @throws NoSuchElementException if the sequence is empty. \n * \n * The
operation is _terminal_. \n
* \n * @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <T> Sequence<T>.minOf(selector: (T) ->
Float): Float { \n val iterator = iterator() \n if (!iterator.hasNext()) throw NoSuchElementException() \n var
minValue = selector(iterator.next()) \n while (iterator.hasNext()) { \n val v = selector(iterator.next()) \n

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minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the sequence.\n * \n * @throws
NoSuchElementException if the sequence is empty.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R : Comparable<R>> Sequence<T>.minOf(selector: (T) -> R): R {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (minValue > v) {\n            minValue = v\n
        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOrNull(selector:
(T) -> Double): Double? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var minValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the sequence or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOrNull(selector:
(T) -> Float): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var minValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        minValue
= minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n *
The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.minOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =
selector(iterator.next())\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the sequence.\n * \n * @throws
NoSuchElementException
if the sequence is empty.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(minValue, v) > 0) {\n
            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the
provided [comparator]\n * among all values produced by [selector] function applied to each element in the sequence
or `null` if there are no elements.\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Sequence<T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n
val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var minValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(minValue, v) > 0) {\n

```

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    minValue = v\n    }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest element or `null` if there are
no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * The operation is _terminal_.\n
*/\n\n@SinceKotlin("1.4")\npublic fun Sequence<Double>.minOrNull(): Double? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest
element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * The operation
is _terminal_.\n * \n * @SinceKotlin("1.4")\npublic fun Sequence<Float>.minOrNull(): Float? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n
        val e = iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or
`null` if there are no elements.\n * \n * The operation is _terminal_.\n * \n * @SinceKotlin("1.4")\npublic fun <T
: Comparable<T>> Sequence<T>.minOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return
null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (min > e) min
= e\n    }\n    return min\n}\n\n@Deprecated("Use minWithOrNull instead.")\nReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun <T> Sequence<T>.minWith(comparator:
Comparator<in T>): T? {\n    return minWithOrNull(comparator)\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator] or `null` if there are no elements.\n * \n * The operation is
_terminal_.\n * \n * @SinceKotlin("1.4")\npublic fun <T> Sequence<T>.minWithOrNull(comparator:
Comparator<in T>): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var min =
iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(min, e) >
0) min = e\n    }\n    return min\n}\n\n/**\n * Returns `true` if the sequence has no elements.\n * \n * The operation is
_terminal_.\n * \n * @sample samples.collections.Collections.Aggregates.none\n */\n\npublic fun <T>
Sequence<T>.none(): Boolean {\n    return !iterator().hasNext()\n}\n\n/**\n * Returns `true` if no elements match
the
given [predicate].\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\n\npublic inline fun <T>
Sequence<T>.none(predicate: (T) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns a sequence which performs the given [action] on each element of the
original sequence as they pass through it.\n * \n * The operation is _intermediate_ and _stateless_.\n
*/\n\n@SinceKotlin("1.1")\npublic fun <T> Sequence<T>.onEach(action: (T) -> Unit): Sequence<T> {\n    return
map {\n        action(it)\n        it\n    }\n}\n\n/**\n * Returns a sequence which performs the given [action] on each
element of the original sequence as they pass through it.\n * \n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n * \n * The operation is _intermediate_
and _stateless_.\n * \n * @SinceKotlin("1.4")\npublic
fun <T> Sequence<T>.onEachIndexed(action: (index: Int, T) -> Unit): Sequence<T> {\n    return mapIndexed {\n
index, element ->\n        action(index, element)\n        element\n    }\n}\n\n/**\n * Accumulates value starting with
the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n *
\n * Throws an exception if this sequence is empty. If the sequence can be empty in an expected way,\n * please use
[reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes
current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * The operation is
_terminal_.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\n\npublic inline fun <S, T : S>
Sequence<T>.reduce(operation: (acc: S, T) -> S): S {\n    val iterator = this.iterator()\n    if (!iterator.hasNext())
throw UnsupportedOperationException("Empty sequence can't be reduced.")\n    var accumulator: S = iterator.next()\n    while (iterator.hasNext()) {\n        accumulator = operation(accumulator,
iterator.next())\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
applying [operation] from left to right\n * to current accumulator value and each element with its index in the
original sequence.\n * \n * Throws an exception if this sequence is empty. If the sequence can be empty in an
expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n *

```



```

@param [operation] function that takes the index of an element, current accumulator value and the element itself,\n
* and calculates the next accumulator value.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.reduce\n *\npublic inline fun <S, T : S>
Sequence<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {\n  val iterator = this.iterator()\n  if
(iterator.hasNext())
  throw UnsupportedOperationException("Empty sequence can't be reduced.")\n  var index = 1\n  var
accumulator: S = iterator.next()\n  while (iterator.hasNext()) {\n    accumulator =
operation(checkIndexOverflow(index++), accumulator, iterator.next())\n  }\n  return accumulator\n}\n\n/**\n *
Accumulates value starting with the first element and applying [operation] from left to right\n * to current
accumulator value and each element with its index in the original sequence.\n * \n * Returns `null` if the sequence is
empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the
element itself,\n * and calculates the next accumulator value.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <S, T : S>
Sequence<T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {\n  val iterator = this.iterator()\n
if (!iterator.hasNext()) return null\n  var index = 1\n  var accumulator: S = iterator.next()\n  while
(iterator.hasNext()) {\n    accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())\n
}\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the sequence is
empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates
the next accumulator value.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Sequence<T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n  val iterator = this.iterator()\n  if
(!iterator.hasNext()) return null\n  var accumulator: S = iterator.next()\n
while (iterator.hasNext()) {\n    accumulator = operation(accumulator, iterator.next())\n  }\n  return
accumulator\n}\n\n/**\n * Returns a sequence containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting sequence.\n * The [initial] value should also be immutable (or should not be mutated)\n *
as it may be passed to [operation] function later because of sequence's lazy nature.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n *\n * The
operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Aggregates.runningFold\n *\n@SinceKotlin("1.4")\npublic fun <T, R>
Sequence<T>.runningFold(initial:
R, operation: (acc: R, T) -> R): Sequence<R> {\n  return sequence {\n    yield(initial)\n    var accumulator =
initial\n    for (element in this@runningFold) {\n      accumulator = operation(accumulator, element)\n
yield(accumulator)\n    }\n  }\n}\n\n/**\n * Returns a sequence containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original sequence and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting sequence.\n * The
[initial] value should also be immutable (or should not be mutated)\n * as it may be passed to [operation]
function later because of sequence's lazy nature.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates
the next accumulator value.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Aggregates.runningFold\n *\n@SinceKotlin("1.4")\npublic fun <T, R>
Sequence<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {\n  return
sequence {\n    yield(initial)\n    var index = 0\n    var accumulator = initial\n    for (element in
this@runningFoldIndexed) {\n      accumulator = operation(checkIndexOverflow(index++), accumulator,

```

```

element)\n        yield(accumulator)\n        }\n    }\n}\n\n/**\n * Returns a sequence containing successive
accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with the first element of this sequence.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting sequence.\n
*\n
* @param [operation] function that takes current accumulator value and the element, and calculates the next
accumulator value.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <S, T : S>
Sequence<T>.runningReduce(operation: (acc: S, T) -> S): Sequence<S> {\n    return sequence {\n        val iterator =
iterator()\n        if (iterator.hasNext()) {\n            var accumulator: S = iterator.next()\n            yield(accumulator)\n            while (iterator.hasNext()) {\n                accumulator = operation(accumulator, iterator.next())\n            }\n        }\n    }\n}\n\n/**\n * Returns a sequence containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original sequence and
current accumulator value that
starts with the first element of this sequence.\n * \n * Note that `acc` value passed to [operation] function should not
be mutated;\n * otherwise it would affect the previous value in resulting sequence.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic fun <S, T : S>
Sequence<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): Sequence<S> {\n    return sequence
{\n        val iterator = iterator()\n        if (iterator.hasNext()) {\n            var accumulator: S = iterator.next()\n            yield(accumulator)\n            var index = 1\n            while (iterator.hasNext()) {\n                accumulator =
operation(checkIndexOverflow(index++), accumulator, iterator.next())\n                yield(accumulator)\n            }\n        }\n    }\n}\n\n/**\n * Returns a sequence containing successive
accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting sequence.\n * The [initial] value should
also be immutable (or should not be mutated)\n * as it may be passed to [operation] function later because of
sequence's lazy nature.\n * \n * @param [operation] function that takes current accumulator value and an element,
and calculates the next accumulator value.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n *
@sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T, R>
Sequence<T>.scan(initial: R, operation: (acc: R, T) ->
R): Sequence<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a sequence containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original sequence and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value
passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting
sequence.\n * The [initial] value should also be immutable (or should not be mutated)\n * as it may be passed to
[operation] function later because of sequence's lazy nature.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun <T, R> Sequence<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {\n    return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the sequence.\n *\n * The operation is _terminal_.\n *\n@Deprecated("Use sumOf
instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline

```

```

fun <T> Sequence<T>.sumBy(selector: (T) -> Int): Int {
    var sum: Int = 0
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the sequence.

* The operation is `_terminal_`.

`@Deprecated("Use sumOf instead.")`

```

@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun <T> Sequence<T>.sumByDouble(selector: (T) -> Double): Double {
    var sum: Double = 0.0
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the sequence.

* The operation is `_terminal_`.

`@SinceKotlin("1.4")`

`@OptIn(kotlin.experimental.ExperimentalTypeInference::class)`

`@OverloadResolutionByLambdaReturnType`

```

@kotlin.jvm.JvmName("sumOfDouble")
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.sumOf(selector: (T) -> Double): Double {
    var sum: Double = 0.toDouble()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the sequence.

* The operation is `_terminal_`.

`@SinceKotlin("1.4")`

`@OptIn(kotlin.experimental.ExperimentalTypeInference::class)`

`@OverloadResolutionByLambdaReturnType`

```

@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.sumOf(selector: (T) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the sequence.

* The operation is `_terminal_`.

`@SinceKotlin("1.4")`

`@OptIn(kotlin.experimental.ExperimentalTypeInference::class)`

`@OverloadResolutionByLambdaReturnType`

```

@kotlin.jvm.JvmName("sumOfLong")
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.sumOf(selector: (T) -> Long): Long {
    var sum: Long = 0.toLong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the sequence.

* The operation is `_terminal_`.

`@SinceKotlin("1.5")`

`@OptIn(kotlin.experimental.ExperimentalTypeInference::class)`

`@OverloadResolutionByLambdaReturnType`

```

@kotlin.jvm.JvmName("sumOfUInt")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.sumOf(selector: (T) -> UInt): UInt {
    var sum: UInt = 0.toUInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns the sum of all values produced by [selector] function applied to each element in the sequence.

* The operation is `_terminal_`.

`@SinceKotlin("1.5")`

`@OptIn(kotlin.experimental.ExperimentalTypeInference::class)`

`@OverloadResolutionByLambdaReturnType`

```

@kotlin.jvm.JvmName("sumOfULong")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.sumOf(selector: (T) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}

```

* Returns an original collection containing all the non-`null` elements, throwing an `[IllegalArgumentException]` if there are any `null` elements.

* The operation is `_intermediate_` and `_stateless_`.

```

public fun <T : Any> Sequence<T>.requireNonNulls(): Sequence<T> {
    return map { it ?: throw IllegalArgumentException("null element found in $this.") }
}

```

* Splits this sequence into a sequence of lists each not exceeding the given [size].

* The last list in the resulting sequence may have fewer elements than the given [size].

* @param size the number of elements to take in each list, must be positive and can be greater than the number of elements in this sequence.

* The operation is `_intermediate_` and `_stateful_`.

* @sample samples.collections.Collections.Transformations.chunked

```

@SinceKotlin("1.2")
public fun <T> Sequence<T>.chunked(size: Int): Sequence<List<T>> {
    return windowed(size, size, partialWindows = true)
}

```

* Splits this sequence into several lists each not exceeding the given [size]

and applies the given [transform] function to an each.

* @return sequence of results of the [transform] applied to an each list.

* Note that the list passed to the [transform] function is ephemeral and is valid only inside that function.

* You should not store it or allow it to escape in some way, unless you made a snapshot of it.

* The last list may have fewer elements than the given [size].

* @param size the number of elements to

take in each list, must be positive and can be greater than the number of elements in this sequence.

```

 * The operation is _intermediate_ and _stateful_.
 * @sample samples.text.Strings.chunkedTransform
 * Since Kotlin("1.2")
 public fun <T, R> Sequence<T>.chunked(size: Int, transform: (List<T>) -> R):
 Sequence<R> {
   return windowed(size, size, partialWindows = true, transform = transform)
 }
 
```

Returns a sequence containing all elements of the original sequence without the first occurrence of the given [element].

```

 * The operation is _intermediate_ and _stateless_.
 * public operator fun <T> Sequence<T>.minus(element:
 T): Sequence<T> {
   return object: Sequence<T> {
     override fun iterator(): Iterator<T> {
       var removed = false
       return this@minus.filter { if (!removed && it == element) { removed = true; false } else true }.iterator()
     }
   }
 }
 
```

Returns a sequence containing all elements of original sequence except the elements contained in the given [elements] array.

Note that the source sequence and the array being subtracted are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

Before Kotlin 1.6, the [elements] array may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of `hashCode()` that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.

```

 * The operation is _intermediate_ and _stateful_.
 * public operator fun <T> Sequence<T>.minus(elements: Array<out T>): Sequence<T> {
   if (elements.isEmpty()) return this
   return object: Sequence<T> {
     override fun iterator(): Iterator<T> {
       val other = elements.convertToSetForSetOperation()
       return this@minus.filterNot { it in other }.iterator()
     }
   }
 }
 
```

Returns a sequence containing all elements of original sequence except the elements contained in the given [elements] collection.

Note that the source sequence and the collection being subtracted are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

Before Kotlin 1.6, the [elements] collection may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of `hashCode()` that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.

```

 * The operation is _intermediate_ and _stateful_.
 * public operator fun <T> Sequence<T>.minus(elements: Iterable<T>): Sequence<T> {
   return object: Sequence<T> {
     override fun iterator(): Iterator<T> {
       val other = elements.convertToSetForSetOperation()
       if (other.isEmpty()) return this@minus.iterator()
       else return this@minus.filterNot { it in other }.iterator()
     }
   }
 }
 
```

Returns a sequence containing all elements of original sequence except the elements contained in the given [elements] sequence.

Note that the source sequence and the sequence being subtracted are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is _intermediate_ for this sequence and _terminal_ and _stateful_ for the [elements] sequence.

Before Kotlin 1.6, the [elements] sequence may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of `hashCode()` that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property `kotlin.collections.convert_arg_to_set_in_removeAll` set to `true`.

```

 * public operator fun <T>
 Sequence<T>.minus(elements: Sequence<T>): Sequence<T> {
   return object: Sequence<T> {
     override fun iterator(): Iterator<T> {
       val other = elements.convertToSetForSetOperation()
       if (other.isEmpty()) return this@minus.iterator()
       else return this@minus.filterNot { it in other }.iterator()
     }
   }
 }
 
```

Returns a sequence containing all elements of the original sequence without the first occurrence of the given [element].

The operation is _intermediate_ and _stateless_.

```

 * @kotlin.internal.InlineOnly
 public inline fun <T> Sequence<T>.minusElement(element: T):
 Sequence<T> {
   return minus(element)
 }
 
```

Splits the original sequence into pair of lists, where *first* list contains elements for which [predicate] yielded `true`, while *second* list contains elements for

which [predicate] yielded `false`.\n * \n * The operation is `_terminal_`.\n * \n * @sample
samples.collections.Sequences.Transformations.partition\n * \n\npublic inline fun <T>
Sequence<T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {\n val first = ArrayList<T>()\n val
second = ArrayList<T>()\n
for (element in this) {\n if (predicate(element)) {\n first.add(element)\n } else {\n
second.add(element)\n } \n } \n return Pair(first, second)\n}\n\n/**\n * Returns a sequence containing all
elements of the original sequence and then the given [element].\n * \n * The operation is `_intermediate_` and
`_stateless_`.\n * \n\npublic operator fun <T> Sequence<T>.plus(element: T): Sequence<T> {\n return
sequenceOf(this, sequenceOf(element)).flatten()\n}\n\n/**\n * Returns a sequence containing all elements of
original sequence and then all elements of the given [elements] array.\n * \n * Note that the source sequence and the
array being added are iterated only when an `iterator` is requested from\n * the resulting sequence. Changing any of
them between successive calls to `iterator` may affect the result.\n * \n * The operation is `_intermediate_` and
`_stateless_`.\n * \n\npublic operator fun <T> Sequence<T>.plus(elements: Array<out T>): Sequence<T>
{\n return this.plus(elements.asList())\n}\n\n/**\n * Returns a sequence containing all elements of original
sequence and then all elements of the given [elements] collection.\n * \n * Note that the source sequence and the
collection being added are iterated only when an `iterator` is requested from\n * the resulting sequence. Changing
any of them between successive calls to `iterator` may affect the result.\n * \n * The operation is `_intermediate_` and
`_stateless_`.\n * \n\npublic operator fun <T> Sequence<T>.plus(elements: Iterable<T>): Sequence<T> {\n return
sequenceOf(this, elements.asSequence()).flatten()\n}\n\n/**\n * Returns a sequence containing all elements of
original sequence and then all elements of the given [elements] sequence.\n * \n * Note that the source sequence and
the sequence being added are iterated only when an `iterator` is requested from\n * the resulting sequence. Changing
any of them between successive calls to `iterator` may affect the result.\n * \n\n * The operation is `_intermediate_` and `_stateless_`.\n * \n\npublic operator fun <T> Sequence<T>.plus(elements:
Sequence<T>): Sequence<T> {\n return sequenceOf(this, elements).flatten()\n}\n\n/**\n * Returns a sequence
containing all elements of the original sequence and then the given [element].\n * \n * The operation is
`_intermediate_` and `_stateless_`.\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Sequence<T>.plusElement(element: T): Sequence<T> {\n return plus(element)\n}\n\n/**\n * Returns a sequence
of snapshots of the window of the given [size]\n * sliding along this sequence with the given [step], where each
snapshot is a list.\n * \n * Several last lists may have fewer elements than the given [size].\n * \n * Both [size] and
[step] must be positive and can be greater than the number of elements in this sequence.\n * @param size the
number of elements to take in each window\n * @param step the number of elements to move the window forward
by on an each step, by default
1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default
`false` which means partial windows won't be preserved\n * \n * @sample
samples.collections.Sequences.Transformations.takeWindows\n * \n\n@SinceKotlin("1.2")\npublic fun <T>
Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<List<T>> {\n return
windowedSequence(size, step, partialWindows, reuseBuffer = false)\n}\n\n/**\n * Returns a sequence of results of
applying the given [transform] function to\n * an each list representing a view over the window of the given [size]\n * sliding along this sequence with the given [step].\n * \n * Note that the list passed to the [transform] function is
ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way,
unless you made a snapshot of it.\n * Several last lists may have fewer elements than the given [size].\n * \n * Both
[size] and [step]
must be positive and can be greater than the number of elements in this sequence.\n * @param size the number of
elements to take in each window\n * @param step the number of elements to move the window forward by on an
each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if
any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample
samples.collections.Sequences.Transformations.averageWindows\n * \n\n@SinceKotlin("1.2")\npublic fun <T, R>
Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) -> R):

```

Sequence<R> {\n  return windowedSequence(size, step, partialWindows, reuseBuffer =
true).map(transform)\n}\n\n/**\n * Returns a sequence of values built from the elements of `this` sequence and the
[other] sequence with the same index.\n * The resulting sequence ends as soon as the shortest input sequence ends.\n
*\n * The operation is _intermediate_ and
_stateless_.\n * \n * @sample samples.collections.Sequences.Transformations.zip\n */\npublic infix fun <T, R>
Sequence<T>.zip(other: Sequence<R>): Sequence<Pair<T, R>> {\n  return MergingSequence(this, other) { t1, t2 -
> t1 to t2 }\n}\n\n/**\n * Returns a sequence of values built from the elements of `this` sequence and the [other]
sequence with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The
resulting sequence ends as soon as the shortest input sequence ends.\n * \n * The operation is _intermediate_ and
_stateless_.\n * \n * @sample samples.collections.Sequences.Transformations.zipWithTransform\n */\npublic fun
<T, R, V> Sequence<T>.zip(other: Sequence<R>, transform: (a: T, b: R) -> V): Sequence<V> {\n  return
MergingSequence(this, other, transform)\n}\n\n/**\n * Returns a sequence of pairs of each two adjacent elements in
this sequence.\n * \n * The returned sequence is empty if this sequence contains less than two elements.\n * \n
* The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.zipWithNext\n */\n@SinceKotlin("1.2")\npublic fun <T>
Sequence<T>.zipWithNext(): Sequence<Pair<T, T>> {\n  return zipWithNext { a, b -> a to b }\n}\n\n/**\n * Returns a sequence containing the results of applying the given [transform] function\n * to an each pair of two
adjacent elements in this sequence.\n * \n * The returned sequence is empty if this sequence contains less than two
elements.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n */\n@SinceKotlin("1.2")\npublic
fun <T, R> Sequence<T>.zipWithNext(transform: (a: T, b: T) -> R): Sequence<R> {\n  return sequence result@
{\n    val iterator = iterator()\n    if (!iterator.hasNext()) return @result\n    var current = iterator.next()\n
while (iterator.hasNext()) {\n      val next = iterator.next()\n      yield(transform(current, next))\n      current = next\n    }\n  }\n}\n\n/**\n * Appends the string from
all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the
collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n *
elements will be appended, followed by the [truncated] string (which defaults to `"...`).\n * \n * The operation is
_terminal_.\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n */\npublic fun <T, A :
Appendable> Sequence<T>.joinTo(buffer: A, separator: CharSequence = ``, ``, prefix: CharSequence = ``, postfix:
CharSequence = ``, limit: Int = -1, truncated: CharSequence = `"...`, transform: ((T) -> CharSequence)? = null): A
{\n  buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count > 1)
buffer.append(separator)\n    if (limit < 0 || count <= limit)
{\n      buffer.appendElement(element, transform)\n    } else break\n  }\n  if (limit >= 0 && count > limit)
buffer.append(truncated)\n  buffer.append(postfix)\n  return buffer\n}\n\n/**\n * Creates a string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to `"...`).\n * \n * The operation is _terminal_.\n *
*\n * @sample samples.collections.Collections.Transformations.joinToString\n */\npublic fun <T>
Sequence<T>.joinToString(separator: CharSequence = ``, ``, prefix: CharSequence = ``, postfix: CharSequence =
``, limit: Int = -1, truncated: CharSequence = `"...`, transform: ((T) -> CharSequence)? = null): String {\n  return
joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original sequence returning its elements when being iterated.\n
*\n */\npublic fun <T> Sequence<T>.asIterable(): Iterable<T> {\n  return Iterable { this.iterator() }\n}\n\n/**\n * Returns this sequence as a [Sequence].\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Sequence<T>.asSequence(): Sequence<T> {\n  return this\n}\n\n/**\n * Returns an average value of elements in
the sequence.\n * \n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfByte")\npublic fun
Sequence<Byte>.average(): Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n
sum += element\n    checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum /

```

```

count\n}\n\n/**\n * Returns an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n *\n * \n@kotlin.jvm.JvmName("averageOfShort")\npublic fun Sequence<Short>.average():
Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n
*\n * \n@kotlin.jvm.JvmName("averageOfInt")\npublic fun Sequence<Int>.average(): Double {\n    var sum: Double
= 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n
    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the
sequence.\n *\n * The operation is _terminal_.\n *\n * \n@kotlin.jvm.JvmName("averageOfLong")\npublic fun
Sequence<Long>.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
        sum += element\n        checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else
sum / count\n}\n\n/**\n * Returns an average value of elements in the sequence.\n *\n * The operation is
_terminal_.\n *\n * \n@kotlin.jvm.JvmName("averageOfFloat")\npublic fun Sequence<Float>.average(): Double {\n
var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n
    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n
*\n * \n@kotlin.jvm.JvmName("averageOfDouble")\npublic fun Sequence<Double>.average(): Double {\n    var sum:
Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n
    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
the sum of all elements in the sequence.\n *\n * The operation is _terminal_.\n
*\n * \n@kotlin.jvm.JvmName("sumOfByte")\npublic fun Sequence<Byte>.sum(): Int
{\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns
the sum of all elements in the sequence.\n *\n * The operation is _terminal_.\n
*\n * \n@kotlin.jvm.JvmName("sumOfShort")\npublic fun Sequence<Short>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the
sequence.\n *\n * The operation is _terminal_.\n *\n * \n@kotlin.jvm.JvmName("sumOfInt")\npublic fun
Sequence<Int>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n *\n * The operation is _terminal_.\n
*\n * \n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Sequence<Long>.sum(): Long {\n    var sum: Long = 0L\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in
the sequence.\n
*\n * The operation is _terminal_.\n *\n * \n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun
Sequence<Float>.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n *\n * The operation is _terminal_.\n
*\n * \n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Sequence<Double>.sum(): Double {\n    var sum:
Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n * \n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SetsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport
kotlin.random.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns a set containing
all elements of the original set except the given [element].\n *\n * The returned set preserves the element iteration
order of the original set.\n *\n * \npublic operator fun <T> Set<T>.minus(element: T): Set<T> {\n    val result =
LinkedHashSet<T>(mapCapacity(size))\n    var removed = false\n    return this.filterTo(result) { if (!removed && it
== element) { removed = true; false } else true }\n}\n\n/**\n * Returns a set containing all elements of the original
set except the elements contained in the given [elements] array.\n *\n * The returned set preserves the element
iteration order of the original set.\n *\n * Before Kotlin 1.6, the [elements] array may have been converted to a

```

[HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of hashCode() that didn't change between successive invocations.

* On JVM, you can enable this behavior back with the system property

kotlin.collections.convert_arg_to_set_in_removeAll set to true.

```
public operator fun <T> Set<T>.minus(elements: Array<out T>): Set<T> {
```

```
    val result = LinkedHashSet<T>(this)
```

```
    result.removeAll(elements)
```

```
    return result
}
```

* Returns a set containing all elements of the original set except the elements contained in the given [elements] collection.

* The returned set preserves the element iteration order of the original set.

Before Kotlin 1.6, the [elements] collection may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of hashCode() that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property kotlin.collections.convert_arg_to_set_in_removeAll set to true.

```
public operator fun <T> Set<T>.minus(elements: Iterable<T>):
```

```
    Set<T> {
```

```
        val other = elements.convertToSetForSetOperationWith(this)
```

```
        if (other.isEmpty()) return this.toSet()
```

```
        if (other is Set) return this.filterNotTo(LinkedHashSet<T>()) { it in other }
```

```
        val result = LinkedHashSet<T>(this)
```

```
        result.removeAll(other)
```

```
        return result
}
```

* Returns a set containing all elements of the original set except the elements contained in the given [elements] sequence.

* The returned set preserves the element iteration order of the original set.

Before Kotlin 1.6, the [elements] sequence may have been converted to a [HashSet] to speed up the operation, thus the elements were required to have a correct and stable implementation of hashCode() that didn't change between successive invocations.

On JVM, you can enable this behavior back with the system property kotlin.collections.convert_arg_to_set_in_removeAll set to true.

```
public operator fun <T> Set<T>.minus(elements: Sequence<T>):
```

```
    Set<T> {
```

```
        val result = LinkedHashSet<T>(this)
```

```
        result.removeAll(elements)
```

```
        return result
}
```

* Returns a set containing all elements of the original set except the given [element].

* The returned set preserves the element iteration order of the original set.

```
@kotlin.internal.InlineOnly
```

```
public inline fun <T> Set<T>.minusElement(element: T): Set<T> {
```

```
    return minus(element)
```

```
}
```

* Returns a set containing all elements of the original set and then the given [element] if it isn't already in this set.

* The returned set preserves the element iteration order of the original set.

```
public operator fun <T> Set<T>.plus(element: T):
```

```
    Set<T> {
```

```
        val result = LinkedHashSet<T>(mapCapacity(size + 1))
```

```
        result.addAll(this)
```

```
        result.add(element)
```

```
        return result
}
```

* Returns a set containing all elements of the original set and the given [elements] array, which aren't already in this set.

* The returned set preserves the element iteration order of the original set.

```
public operator fun <T> Set<T>.plus(elements: Array<out T>):
```

```
    Set<T> {
```

```
        val result = LinkedHashSet<T>(mapCapacity(this.size + elements.size))
```

```
        result.addAll(this)
```

```
        result.addAll(elements)
```

```
        return result
}
```

* Returns a set containing all elements of the original set and the given [elements] collection, which aren't already in this set.

* The returned set preserves the element iteration order of the original set.

```
public operator fun <T> Set<T>.plus(elements: Iterable<T>):
```

```
    Set<T> {
```

```
        val result = LinkedHashSet<T>(mapCapacity(elements.collectionSizeOrNull()?.let { this.size + it } ?: this.size * 2))
```

```
        result.addAll(this)
```

```
        result.addAll(elements)
```

```
        return result
}
```

* Returns a set containing all elements of the original set and the given [elements] sequence, which aren't already in this set.

* The returned set preserves the element iteration order of the original set.

```
public operator fun <T> Set<T>.plus(elements: Sequence<T>):
```

```
    Set<T> {
```

```
        val result = LinkedHashSet<T>(mapCapacity(this.size * 2))
```

```
        result.addAll(this)
```

```
        result.addAll(elements)
```

```
        return result
}
```

* Returns a set containing all elements of the original set and then the given [element] if it isn't already in this set.

* The returned set preserves the element iteration order of the original set.

```
@kotlin.internal.InlineOnly
```

```
public inline fun <T> Set<T>.plusElement(element: T): Set<T> {
```

```
    return plus(element)
}
```



```

kotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport
kotlin.random.*\n\n/**\n * Returns a character at the given [index] or throws an [IndexOutOfBoundsException] if
the [index] is out of bounds of this char sequence.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n * \n\npublic expect fun CharSequence.elementAt(index: Int):
Char\n\n/**\n * Returns a character at the given [index] or the result of calling the [defaultValue] function if the
[index] is out of bounds of this char sequence.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun
CharSequence.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns a character at the given [index] or `null` if
the [index] is out of bounds of this char sequence.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\n\npublic
inline fun CharSequence.elementAtOrNull(index: Int): Char? {\n    return this.getOrNull(index)\n}\n\n/**\n *
Returns the first character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun
CharSequence.find(predicate: (Char) -> Boolean): Char? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns
the last character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun
CharSequence.findLast(predicate: (Char) -> Boolean): Char? {\n    return lastOrNull(predicate)\n}\n\n/**\n *
Returns first character.\n * @throws [NoSuchElementException] if the char sequence is empty.\n * \n\npublic fun
CharSequence.first(): Char {\n    if (isEmpty())\n        throw NoSuchElementException("Char sequence is
empty.")\n    return this[0]\n}\n\n/**\n * Returns the first character matching the given [predicate].\n * @throws
[NoSuchElementException] if no such character is found.\n * \n\npublic inline fun CharSequence.first(predicate:
(Char) -> Boolean): Char {\n    for (element in this) if (predicate(element)) return element\n    throw
NoSuchElementException("Char sequence contains no character matching the predicate.")\n}\n\n/**\n * Returns
the first non-null value produced by [transform] function being applied to characters of this char sequence in
iteration order,\n * or throws [NoSuchElementException] if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n\n@SinceKotlin("1.5")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <R : Any>
CharSequence.firstNotNullOf(transform: (Char) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the char sequence was transformed to a non-null
value.")\n}\n\n/**\n * Returns the first non-null value produced by [transform] function being applied to characters
of this char sequence in iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n\n@SinceKotlin("1.5")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <R : Any>
CharSequence.firstNotNullOfOrNull(transform: (Char) -> R?): R? {\n    for (element in this) {\n        val result =
transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return null\n}\n\n/**\n *
Returns the first character, or `null` if the char sequence is empty.\n * \n\npublic fun CharSequence.firstOrNull():
Char? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first character matching the given
[predicate], or `null` if character was not found.\n * \n\npublic inline fun CharSequence.firstOrNull(predicate: (Char) -
> Boolean): Char? {\n    for
(element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns a character at the given
[index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this char sequence.\n
*\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CharSequence.getOrNull(index: Int, defaultValue: (Int) -> Char):
Char {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns a
character at the given [index] or `null` if the [index] is out of bounds of this char sequence.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n * \n\npublic fun CharSequence.getOrNull(index: Int): Char?
{\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns index of the first

```

```

character matching the given [predicate], or -1 if the char sequence does not contain such character.\n */\npublic
inline fun CharSequence.indexOfFirst(predicate: (Char) -> Boolean): Int {\n
    for (index in indices) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -
1\n}\n\n/**\n * Returns index of the last character matching the given [predicate], or -1 if the char sequence does
not contain such character.\n */\npublic inline fun CharSequence.indexOfLast(predicate: (Char) -> Boolean): Int {\n
    for (index in indices.reversed()) {\n        if (predicate(this[index])) {\n            return index\n        }\n    }\n    return -
1\n}\n\n/**\n * Returns the last character.\n * \n * @throws NoSuchElementException if the char sequence is
empty.\n * \n * @sample samples.text.Strings.last\n */\npublic fun CharSequence.last(): Char {\n    if (isEmpty())\n        throw NoSuchElementException("Char sequence is empty.")\n    return this[lastIndex]\n}\n\n/**\n * Returns the
last character matching the given [predicate].\n * \n * @throws NoSuchElementException if no such character is
found.\n * \n * @sample samples.text.Strings.last\n */\npublic
inline fun CharSequence.last(predicate: (Char) -> Boolean): Char {\n    for (index in this.indices.reversed()) {\n
        val element = this[index]\n        if (predicate(element)) return element\n    }\n    throw
NoSuchElementException("Char sequence contains no character matching the predicate.")\n}\n\n/**\n * Returns
the last character, or `null` if the char sequence is empty.\n * \n * @sample samples.text.Strings.last\n */\npublic fun
CharSequence.lastOrNull(): Char? {\n    return if (isEmpty()) null else this[length - 1]\n}\n\n/**\n * Returns the last
character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample
samples.text.Strings.last\n */\npublic inline fun CharSequence.lastOrNull(predicate: (Char) -> Boolean): Char? {\n
    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if (predicate(element)) return element\n
    }\n    return null\n}\n\n/**\n * Returns a random character from this char sequence.\n
* \n * @throws NoSuchElementException if this char sequence is empty.\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.random(): Char {\n
    return random(Random)\n}\n\n/**\n * Returns a random character from this char sequence using the specified
source of randomness.\n * \n * @throws NoSuchElementException if this char sequence is empty.\n
*/\n\n@SinceKotlin("1.3")\npublic fun CharSequence.random(random: Random): Char {\n    if (isEmpty())\n        throw NoSuchElementException("Char sequence is empty.")\n    return get(random.nextInt(length))\n}\n\n/**\n *
Returns a random character from this char sequence, or `null` if this char sequence is empty.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun CharSequence.randomOrNull(): Char? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a
random character from this char sequence using the specified source of
randomness, or `null` if this char sequence is empty.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharSequence.randomOrNull(random: Random): Char? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(length))\n}\n\n/**\n * Returns the single character, or throws an exception if the char sequence
is empty or has more than one character.\n */\npublic fun CharSequence.single(): Char {\n    return when (length)
{\n        0 -> throw NoSuchElementException("Char sequence is empty.")\n        1 -> this[0]\n        else -> throw
IllegalArgumentException("Char sequence has more than one element.")\n    }\n}\n\n/**\n * Returns the single
character matching the given [predicate], or throws exception if there is no or more than one matching character.\n
*/\npublic inline fun CharSequence.single(predicate: (Char) -> Boolean): Char {\n    var single: Char? = null\n    var
found = false\n    for (element in this) {\n        if (predicate(element))\n            {\n                if (found) throw IllegalArgumentException("Char sequence contains more than one matching
element.")\n                single = element\n                found = true\n            }\n    }\n    if (!found) throw
NoSuchElementException("Char sequence contains no character matching the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as Char\n}\n\n/**\n * Returns single character, or `null` if
the char sequence is empty or has more than one character.\n */\npublic fun CharSequence.singleOrNull(): Char?
{\n    return if (length == 1) this[0] else null\n}\n\n/**\n * Returns the single character matching the given
[predicate], or `null` if character was not found or more than one character was found.\n */\npublic inline fun
CharSequence.singleOrNull(predicate: (Char) -> Boolean): Char? {\n    var single: Char? = null\n    var found =

```

```

false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single
= element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns a
subsequence of this char sequence with the first [n] characters removed.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.drop\n */\npublic fun
CharSequence.drop(n: Int): CharSequence {\n require(n >= 0) { \"Requested character count $n is less than zero.\"
}\n return subSequence(n.coerceAtMost(length), length)\n}\n\n/**\n * Returns a string with the first [n] characters
removed.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.text.Strings.drop\n */\npublic fun String.drop(n: Int): String {\n require(n >= 0) { \"Requested character
count $n is less than zero.\" }\n return substring(n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of
this char sequence with the last [n] characters removed.\n * \n * @throws IllegalArgumentException if [n] is
negative.\n
* \n * @sample samples.text.Strings.drop\n */\npublic fun CharSequence.dropLast(n: Int): CharSequence {\n
require(n >= 0) { \"Requested character count $n is less than zero.\" }\n return take((length -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a string with the last [n] characters removed.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.drop\n */\npublic fun
String.dropLast(n: Int): String {\n require(n >= 0) { \"Requested character count $n is less than zero.\" }\n return
take((length - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a subsequence of this char sequence containing all
characters except last characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.drop\n
*/\npublic inline fun CharSequence.dropLastWhile(predicate: (Char) -> Boolean): CharSequence {\n for (index in
lastIndex downTo 0)\n if (!predicate(this[index]))\n return subSequence(0, index + 1)\n return
\"\"\n}\n\n/**\n * Returns a string containing all characters except last characters that satisfy the given
[predicate].\n * \n * @sample samples.text.Strings.drop\n */\npublic inline fun String.dropLastWhile(predicate:
(Char) -> Boolean): String {\n for (index in lastIndex downTo 0)\n if (!predicate(this[index]))\n return
substring(0, index + 1)\n return \"\"\n}\n\n/**\n * Returns a subsequence of this char sequence containing all
characters except first characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.drop\n
*/\npublic inline fun CharSequence.dropWhile(predicate: (Char) -> Boolean): CharSequence {\n for (index in
this.indices)\n if (!predicate(this[index]))\n return subSequence(index, length)\n return \"\"\n}\n\n/**\n *
Returns a string containing all characters except first characters that satisfy the given [predicate].\n * \n *
@sample samples.text.Strings.drop\n */\npublic inline fun String.dropWhile(predicate:
(Char) -> Boolean): String {\n for (index in this.indices)\n if (!predicate(this[index]))\n return
substring(index)\n return \"\"\n}\n\n/**\n * Returns a char sequence containing only those characters from the
original char sequence that match the given [predicate].\n * \n * @sample samples.text.Strings.filter\n */\npublic
inline fun CharSequence.filter(predicate: (Char) -> Boolean): CharSequence {\n return filterTo(StringBuilder(),
predicate)\n}\n\n/**\n * Returns a string containing only those characters from the original string that match the
given [predicate].\n * \n * @sample samples.text.Strings.filter\n */\npublic inline fun String.filter(predicate: (Char) -
> Boolean): String {\n return filterTo(StringBuilder(), predicate).toString()\n}\n\n/**\n * Returns a char sequence
containing only those characters from the original char sequence that match the given [predicate].\n * @param
[predicate] function that takes the index of a character
and the character itself\n * and returns the result of predicate evaluation on the character.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun CharSequence.filterIndexed(predicate:
(index: Int, Char) -> Boolean): CharSequence {\n return filterIndexedTo(StringBuilder(), predicate)\n}\n\n/**\n *
Returns a string containing only those characters from the original string that match the given [predicate].\n *
@param [predicate] function that takes the index of a character and the character itself\n * and returns the result of
predicate evaluation on the character.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*/\npublic inline fun String.filterIndexed(predicate: (index: Int, Char) -> Boolean): String {\n return
filterIndexedTo(StringBuilder(), predicate).toString()\n}\n\n/**\n * Appends all characters matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the

```

```

index of a character and the character itself\n * and returns the result of predicate evaluation on the character.\n * \n
* @sample samples.collections.Collections.Filtering.filterIndexedTo\n *^\npublic inline fun <C : Appendable>
CharSequence.filterIndexedTo(destination: C, predicate: (index: Int, Char) -> Boolean): C {\n  forEachIndexed {
index, element ->\n    if (predicate(index, element)) destination.append(element)\n  }\n  return
destination\n}\n\n/**\n * Returns a char sequence containing only those characters from the original char sequence
that do not match the given [predicate].\n * \n * @sample samples.text.Strings.filterNot\n *^\npublic inline fun
CharSequence.filterNot(predicate: (Char) -> Boolean): CharSequence {\n  return filterNotTo(StringBuilder(),
predicate)\n}\n\n/**\n * Returns a string containing only those characters from the original string that do not match
the given [predicate].\n * \n * @sample samples.text.Strings.filterNot\n *^\npublic inline fun
String.filterNot(predicate: (Char) -> Boolean): String {\n  return filterNotTo(StringBuilder(),
predicate).toString()\n}\n\n/**\n * Appends all characters not matching the given [predicate] to the given
[destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C :
Appendable> CharSequence.filterNotTo(destination: C, predicate: (Char) -> Boolean): C {\n  for (element in this)
if (!predicate(element)) destination.append(element)\n  return destination\n}\n\n/**\n * Appends all characters
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <C : Appendable>
CharSequence.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n  for (index in 0 until length) {\n    val
element = get(index)\n    if (predicate(element)) destination.append(element)\n  }\n  return
destination\n}\n\n/**\n * Returns a char sequence containing
characters of the original char sequence at the specified range of [indices].\n *^\npublic fun
CharSequence.slice(indices: IntRange): CharSequence {\n  if (indices.isEmpty()) return ""\n  return
subSequence(indices)\n}\n\n/**\n * Returns a string containing characters of the original string at the specified
range of [indices].\n *^\npublic fun String.slice(indices: IntRange): String {\n  if (indices.isEmpty()) return ""\n
return substring(indices)\n}\n\n/**\n * Returns a char sequence containing characters of the original char sequence
at specified [indices].\n *^\npublic fun CharSequence.slice(indices: Iterable<Int>): CharSequence {\n  val size =
indices.collectionSizeOrDefault(10)\n  if (size == 0) return ""\n  val result = StringBuilder(size)\n  for (i in
indices) {\n    result.append(get(i))\n  }\n  return result\n}\n\n/**\n * Returns a string containing characters of
the original string at specified [indices].\n *^\n@kotlin.internal.InlineOnly\npublic
inline fun String.slice(indices: Iterable<Int>): String {\n  return (this as
CharSequence).slice(indices).toString()\n}\n\n/**\n * Returns a subsequence of this char sequence containing the
first [n] characters from this char sequence, or the entire char sequence if this char sequence is shorter.\n * \n *
* @throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n *^\npublic fun
CharSequence.take(n: Int): CharSequence {\n  require(n >= 0) { "Requested character count $n is less than zero."
}\n  return subSequence(0, n.coerceAtMost(length))\n}\n\n/**\n * Returns a string containing the first [n]
characters from this string, or the entire string if this string is shorter.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.text.Strings.take\n *^\npublic fun String.take(n: Int): String {\n  require(
n >= 0) { "Requested character count $n is less than zero." }\n  return substring(0,
n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of this char sequence containing the last [n]
characters from this char sequence, or the entire char sequence if this char sequence is shorter.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n *^\npublic fun
CharSequence.takeLast(n: Int): CharSequence {\n  require(n >= 0) { "Requested character count $n is less than zero."
}\n  val length = length\n  return
subSequence(length - n.coerceAtMost(length), length)\n}\n\n/**\n * Returns a string containing the last [n]
characters from this string, or the entire string if this string is shorter.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.text.Strings.take\n *^\npublic fun String.takeLast(n: Int): String {\n
require(n >= 0) { "Requested character count $n is less than zero." }\n  val length = length\n  return
substring(length - n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence

```

of this char sequence containing last characters that satisfy the given [predicate].

```

@sample samples.text.Strings.takeLastWhile(predicate: (Char) -> Boolean):
CharSequence {
    for (index in lastIndex downTo 0) {
        if (!predicate(this[index])) {
            return
            subSequence(index + 1, length)
        }
    }
    return subSequence(0, length)
}

```

* Returns a string containing last characters that satisfy the given [predicate].

```

@sample samples.text.Strings.takeLastWhile(predicate: (Char) -> Boolean): String {
    for (index in lastIndex downTo 0) {
        if (!predicate(this[index])) {
            return substring(index + 1)
        }
    }
    return this
}

```

* Returns a subsequence of this char sequence containing the first characters that satisfy the given [predicate].

```

@sample samples.text.Strings.takeWhile(predicate:
(Char) -> Boolean): CharSequence {
    for (index in 0 until length) {
        if (!predicate(get(index))) {
            return subSequence(0, index)
        }
    }
    return subSequence(0, length)
}

```

* Returns a string containing the first characters that satisfy the given [predicate].

```

@sample samples.text.Strings.takeWhile(predicate: (Char) -> Boolean): String {
    for (index in 0 until length) {
        if (!predicate(get(index))) {
            return substring(0, index)
        }
    }
    return this
}

```

* Returns a char sequence with characters in reversed order.

```

@public fun CharSequence.reversed(): CharSequence {
    return
    StringBuilder(this).reverse()
}

```

* Returns a string with characters in reversed order.

```

@kotlin.internal.InlineOnly
@public inline fun String.reversed(): String {
    return (this as
CharSequence).reversed().toString()
}

```

* Returns a [Map] containing key-value pairs provided by [transform] function applied to characters of the given char sequence.

* If any of two pairs would have the same key the last one gets added to the map.

* The returned map preserves the entry iteration order of the original char sequence.

```

@sample samples.text.Strings.associate:
<K, V> CharSequence.associate(transform: (Char) -> Pair<K, V>): Map<K, V> {
    val capacity =
    mapCapacity(length).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity),
    transform)
}

```

* Returns a [Map] containing the characters from the given char sequence indexed by the key returned from [keySelector] function applied to each character.

* If any two characters would have the same key returned by [keySelector] the last one gets added to the map.

* The returned map preserves the entry iteration order of the original char sequence.

```

@sample samples.text.Strings.associateBy:
<K> CharSequence.associateBy(keySelector: (Char) -> K): Map<K, Char> {
    val capacity =
    mapCapacity(length).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, Char>(capacity),
    keySelector)
}

```

* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to characters of the given char sequence.

* If any two characters would have the same key returned by [keySelector] the last one gets added to the map.

* The returned map preserves the entry iteration order of the original char sequence.

```

@sample
samples.text.Strings.associateByWithValueTransform:
<K, V>
CharSequence.associateBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, V> {
    val capacity =
    mapCapacity(length).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, V>(capacity),
    keySelector, valueTransform)
}

```

* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each character of the given char sequence and value is the character itself.

* If any two characters would have the same key returned by [keySelector] the last one gets added to the map.

```

@sample samples.text.Strings.associateByTo:
<K, M : MutableMap<in K, in Char>>
CharSequence.associateByTo(destination: M, keySelector: (Char) -> K): M {
    for (element in this) {
        destination.put(keySelector(element), element)
    }
    return
    destination
}

```

* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function and value is provided by the [valueTransform] function applied to characters of the given char sequence.

* If any two characters would have the same key returned by [keySelector] the last one gets added to the map.

```

@sample
samples.text.Strings.associateByToWithValueTransform:

```

```

*^public inline fun <K, V, M : MutableMap<in K, in V>> CharSequence.associateByTo(destination: M,
keySelector: (Char) -> K, valueTransform: (Char) -> V): M {
    for (element in this) {
        destination.put(keySelector(element), valueTransform(element))
    }
    return destination
}

* Populates and returns the [destination] mutable map with key-value pairs
* provided by [transform] function applied to each character of the given char sequence.
* If any of two pairs would have the same key the last one gets added to the map.
* @sample samples.text.Strings.associateTo

*^public inline fun <K, V, M : MutableMap<in K, in V>> CharSequence.associateTo(destination: M, transform: (Char) -> Pair<K, V>): M {
    for (element in this) {
        destination += transform(element)
    }
    return destination
}

* Returns a [Map] where keys are characters from the given char sequence and values are
* produced by the [valueSelector] function applied to each character.
* If any two characters are equal, the last one gets added to the map.
* The returned map preserves the entry iteration order of the original char sequence.
* @sample samples.text.Strings.associateWith

*^@SinceKotlin("1.3")^public inline fun <V> CharSequence.associateWith(valueSelector: (Char) -> V): Map<Char, V> {
    val result = LinkedHashMap<Char, V>(mapCapacity(length.coerceAtMost(128)).coerceAtLeast(16))
    return associateWithTo(result, valueSelector)
}

* Populates and returns the [destination] mutable map with key-value pairs for each character of the given char sequence,
* where key is the character itself and value is provided by the [valueSelector] function applied to that key.
* If any two characters are equal, the last one overwrites the former value in the map.
* @sample samples.text.Strings.associateWithTo

*^@SinceKotlin("1.3")^public inline fun <V, M : MutableMap<in Char, in V>> CharSequence.associateWithTo(destination: M, valueSelector: (Char) -> V): M {
    for (element in this) {
        destination.put(element, valueSelector(element))
    }
    return destination
}

* Appends all characters to the given [destination] collection.

*^public fun <C : MutableCollection<in Char>> CharSequence.toCollection(destination: C): C {
    for (item in this) {
        destination.add(item)
    }
    return destination
}

* Returns a new [HashSet] of all characters.

*^public fun CharSequence.toHashSet(): HashSet<Char> {
    return toCollection(HashSet<Char>(mapCapacity(length.coerceAtMost(128))))
}

* Returns a [List] containing all characters.

*^public fun CharSequence.toList(): List<Char> {
    return when (length) {
        0 -> emptyList()
        1 -> listOf(this[0])
        else -> this.toMutableList()
    }
}

* Returns a new [MutableList] filled with all characters of this char sequence.

*^public fun CharSequence.toMutableList(): MutableList<Char> {
    return toCollection(ArrayList<Char>(length))
}

* Returns a [Set] of all characters.
* The returned set preserves the element iteration order of the original char sequence.

*^public fun CharSequence.toSet(): Set<Char> {
    return when (length) {
        0 -> emptySet()
        1 -> setOf(this[0])
        else -> toCollection(LinkedHashSet<Char>(mapCapacity(length.coerceAtMost(128))))
    }
}

* Returns a single list of all elements yielded from results of [transform] function being invoked on each character of original char sequence.
* @sample samples.collections.Collections.Transformations.flatMap

*^public inline fun <R> CharSequence.flatMap(transform: (Char) -> Iterable<R>): List<R> {
    return flatMapTo(ArrayList<R>(), transform)
}

* Returns a single list of all elements yielded from results of [transform] function being invoked on each character
* and its index in the original char sequence.
* @sample samples.collections.Collections.Transformations.flatMapIndexed

*^@SinceKotlin("1.4")^@OptIn(kotlin.experimental.ExperimentalTypeInference::class)^@OverloadResolutionByLambdaReturnType^@kotlin.jvm.JvmName("flatMapIndexedIterable")^@kotlin.internal.InlineOnly^public inline fun <R> CharSequence.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {
    return flatMapIndexedTo(ArrayList<R>(), transform)
}

* Appends all elements yielded from results of [transform] function being invoked on each character
* and its index in the original char sequence, to the given [destination].

*^@SinceKotlin("1.4")^@OptIn(kotlin.experimental.ExperimentalTypeInference::class)^@OverloadResolutionByLambdaReturnType^@kotlin.jvm.JvmName("flatMapIndexedIterableTo")^@kotlin.internal.InlineOnly^public

```

```

c inline fun <R, C : MutableCollection<in R>> CharSequence.flatMapIndexedTo(destination: C, transform:
(index: Int, Char) -> Iterable<R>): C {
    var index = 0
    for (element in this) {
        val list =
transform(index++, element)
        destination.addAll(list)
    }
    return destination
}

Append all
elements yielded from results of [transform] function being invoked on each character of original char sequence, to
the given [destination].

public inline fun <R, C : MutableCollection<in R>>
CharSequence.flatMapTo(destination: C, transform: (Char) -> Iterable<R>): C {
    for (element in this) {
        val
list = transform(element)
        destination.addAll(list)
    }
    return destination
}

Groups characters
of the original char sequence by the key returned by the given [keySelector] function
applied to each character
and returns a map where each group key is associated with a list of corresponding characters.

The returned
map preserves the entry iteration order of the keys produced from the original char sequence.

@sample samples.collections.Collections.Transformations.groupBy

public inline fun <K>
CharSequence.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {
    return
groupByTo(LinkedHashMap<K, MutableList<Char>>(), keySelector)
}

Groups values returned by the
[valueTransform] function applied to each character of the original char sequence
by the key returned by the
given [keySelector] function applied to the character
and returns a map where each group key is associated with
a list of corresponding values.

The returned map preserves the entry iteration order of the keys produced
from the original char sequence.

@sample
samples.collections.Collections.Transformations.groupByKeysAndValues

public inline fun <K, V>
CharSequence.groupBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, List<V>> {
    return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)
}

Groups
characters of the
original char sequence by the key returned by the given [keySelector] function
applied to each character and
puts to the [destination] map each group key associated with a list of corresponding characters.

@return The
[destination] map.

@sample samples.collections.Collections.Transformations.groupBy

public inline
fun <K, M : MutableMap<in K, MutableList<Char>>> CharSequence.groupByTo(destination: M, keySelector:
(Char) -> K): M {
    for (element in this) {
        val key = keySelector(element)
        val list =
destination.getOrPut(key) { ArrayList<Char>() }
        list.add(element)
    }
    return destination
}

Groups values returned by the [valueTransform] function applied to each character of the original char sequence
by the key returned by the given [keySelector] function applied to the character
and puts to the [destination] map
each group key associated with a list of corresponding values.

@return The [destination]
map.

@sample samples.collections.Collections.Transformations.groupByKeysAndValues

public inline
fun <K, V, M : MutableMap<in K, MutableList<V>>> CharSequence.groupByTo(destination: M,
keySelector: (Char) -> K, valueTransform: (Char) -> V): M {
    for (element in this) {
        val key =
keySelector(element)
        val list = destination.getOrPut(key) { ArrayList<V>() }
        list.add(valueTransform(element))
    }
    return destination
}

Creates a [Grouping] source from a
char sequence to be used later with one of group-and-fold operations
using the specified [keySelector] function
to extract a key from each character.

@sample samples.collections.Grouping.groupingByEachCount

@SinceKotlin("1.1")
public inline fun <K> CharSequence.groupingBy(crossinline keySelector: (Char) -> K):
Grouping<Char, K> {
    return object : Grouping<Char, K> {
        override fun sourceIterator(): Iterator<Char>
= this@groupingBy.iterator()

        override fun keyOf(element: Char): K = keySelector(element)
    }
}

Returns a list containing the
results of applying the given [transform] function
to each character in the original char sequence.

@sample samples.text.Strings.map

public inline fun <R> CharSequence.map(transform: (Char) -> R):
List<R> {
    return mapTo(ArrayList<R>(length), transform)
}

Returns a list containing the results of
applying the given [transform] function
to each character and its index in the original char sequence.

@param [transform] function that takes the index of a character and the character itself
and returns the result of
the transform applied to the character.

public inline fun <R> CharSequence.mapIndexed(transform: (index:
Int, Char) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(length), transform)
}

Returns a list

```

containing only the non-null results of applying the given [transform] function to each character and its index in the original char sequence.

`@param [transform] function that takes the index of a character and the character itself and returns the result of the transform applied to the character.`

```
public inline fun <R : Any> CharSequence.mapIndexedNotNull(transform: (index: Int, Char) -> R?): List<R> {
    return mapIndexedNotNullTo(ArrayList<R>(), transform)
}
```

Applies the given [transform] function to each character and its index in the original char sequence and appends only the non-null results to the given [destination].

`@param [transform] function that takes the index of a character and the character itself and returns the result of the transform applied to the character.`

```
public inline fun <R : Any, C : MutableCollection<in R>> CharSequence.mapIndexedNotNullTo(destination: C, transform: (index: Int, Char) -> R?): C {
    forIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }
    return destination
}
```

Applies the given [transform] function to each character and its index in the original char sequence and appends the results to the given [destination].

`@param [transform] function that takes the index of a character and the character itself and returns the result of the transform applied to the character.`

```
public inline fun <R, C : MutableCollection<in R>> CharSequence.mapIndexedTo(destination: C, transform: (index: Int, Char) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(index++, item))
    return destination
}
```

Returns a list containing only the non-null results of applying the given [transform] function to each character in the original char sequence.

`@sample`

```
samples.collections.Collections.Transformations.mapNotNull
```

```
public inline fun <R : Any> CharSequence.mapNotNull(transform: (Char) -> R?): List<R> {
    return mapNotNullTo(ArrayList<R>(), transform)
}
```

Applies the given [transform] function to each character in the original char sequence and appends only the non-null results to the given [destination].

```
public inline fun <R : Any, C : MutableCollection<in R>> CharSequence.mapNotNullTo(destination: C, transform: (Char) -> R?): C {
    forEach { element -> transform(element)?.let { destination.add(it) } }
    return destination
}
```

Applies the given [transform] function to each character of the original char sequence and appends the results to the given [destination].

```
public inline fun <R, C : MutableCollection<in R>> CharSequence.mapTo(destination: C, transform: (Char) -> R): C {
    for (item in this)
        destination.add(transform(item))
    return destination
}
```

Returns a lazy [Iterable] that wraps each character of the original char sequence into an [IndexedValue] containing the index of that character and the character itself.

```
public fun CharSequence.withIndex(): Iterable<IndexedValue<Char>>
```

```
{
    return IndexingIterable { iterator() }
}
```

Returns `true` if all characters match the given [predicate].

`@sample`

```
samples.collections.Collections.Aggregates.all
```

```
public inline fun CharSequence.all(predicate: (Char) -> Boolean): Boolean {
    for (element in this) if (!predicate(element)) return false
    return true
}
```

Returns `true` if char sequence has at least one character.

`@sample`

```
samples.collections.Collections.Aggregates.any
```

```
public fun CharSequence.any(): Boolean {
    return !isEmpty()
}
```

Returns `true` if at least one character matches the given [predicate].

`@sample`

```
samples.collections.Collections.Aggregates.anyWithPredicate
```

```
public inline fun CharSequence.any(predicate: (Char) -> Boolean): Boolean {
    for (element in this) if (predicate(element)) return true
    return false
}
```

Returns the length of this char sequence.

```
@kotlin.internal.InlineOnly
public inline fun CharSequence.count(): Int {
    return length
}
```

Returns the number of characters matching the given [predicate].

```
public inline fun CharSequence.count(predicate: (Char) -> Boolean): Int {
    var count = 0
    for (element in this) if (predicate(element)) ++count
    return count
}
```

Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each character.

`@sample`

Returns the specified [initial] value if the char sequence is empty.

`@param [operation] function that takes current accumulator value and a character, and calculates the next accumulator value.`

```
public inline fun <R> CharSequence.fold(initial: R, operation: (acc: R, Char) -> R): R {
    var accumulator = initial
    for (element in this) accumulator = operation(accumulator, element)
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation]

from left to right

```

 * to current accumulator value and each character with its index in the original char sequence.
 * Returns the specified [initial] value if the char sequence is empty.
 * @param [operation] function that takes the index of a character, current accumulator value
 * and the character itself, and calculates the next accumulator value.
 */
public inline fun <R> CharSequence.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): R {
    var index = 0
    var accumulator = initial
    for (element in this) accumulator = operation(index++, accumulator, element)
    return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left

```

 * to each character and current accumulator value.
 * Returns the specified [initial] value if the char sequence is empty.
 * @param [operation] function that takes a character and current accumulator value, and calculates the next accumulator
 * value.
 */
public inline fun <R> CharSequence.foldRight(initial: R, operation: (Char, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left

```

 * to each character with its index in the original char sequence and current accumulator value.
 * Returns the specified [initial] value if the char sequence is empty.
 * @param [operation] function that takes the index of a character, the character itself
 * and current accumulator value, and calculates the next accumulator value.
 */
public inline fun <R> CharSequence.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Performs the given [action] on each character

```

 */
public inline fun CharSequence.forEach(action: (Char) -> Unit): Unit {
    for (element in this) action(element)
}

```

Performs the given [action] on each character, providing sequential index with the character

```

 * @param [action] function that takes the index of a character and the character itself
 * and performs the action on the character.
 */
public inline fun CharSequence.forEachIndexed(action: (index: Int, Char) -> Unit): Unit {
    var index = 0
    for (item in this) action(index++, item)
}

```

@Deprecated("Use maxOrNull instead.", ReplaceWith("this.maxOrNull()"))

```

 */
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")
public fun CharSequence.max(): Char? {
    return maxOrNull()
}

```

@Deprecated("Use maxByOrNull instead.", ReplaceWith("this.maxByOrNull(selector)"))

```

 */
@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")
public inline fun <R : Comparable<R>> CharSequence.maxBy(selector: (Char) -> R): Char? {
    return maxByOrNull(selector)
}

```

Returns the first character yielding the largest value of the given function or `null` if there are no characters

```

 * @sample samples.collections.Collections.Aggregates.maxByOrNull
 * @SinceKotlin("1.4")
 */
public inline fun <R : Comparable<R>> CharSequence.maxByOrNull(selector: (Char) -> R): Char? {
    if (isEmpty()) return null
    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue = selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue < v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}

```

Returns the largest value among all values produced by [selector] function

```

 * applied to each character in the char sequence.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the char sequence is empty.
 * @SinceKotlin("1.4")
 * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * @OverloadResolutionByLambdaReturnType
 */
@kotlin.internal.InlineOnly
public inline fun CharSequence.maxOf(selector: (Char) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

```

Returns the largest value among all values produced by [selector] function

```

 * applied to each character in the char sequence.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the char sequence is empty.
 * @SinceKotlin("1.4")
 * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * @OverloadResolutionByLambdaReturnType
 */
@kotlin.internal.InlineOnly
public

```

```

inline fun CharSequence.maxOf(selector: (Char) -> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}
// Returns the largest value among all values produced by [selector] function
// applied to each character in the char sequence.
// @throws NoSuchElementException if the char sequence is empty.
// @SinceKotlin("1.4")
// @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
// @OverloadResolutionByLambdaReturnType
// @kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>>
CharSequence.maxOf(selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}
// Returns the largest value among all values produced by [selector] function
// applied to each character in the char sequence or `null` if there are no characters.
// If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
// @SinceKotlin("1.4")
// @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
// @OverloadResolutionByLambdaReturnType
// @kotlin.internal.InlineOnly
public inline fun CharSequence.maxOfOrNull(selector:
(Char) -> Double): Double? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}
// Returns the largest value among all values produced by [selector] function
// applied to each character in the char sequence or `null` if there
// are no characters.
// If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
// @SinceKotlin("1.4")
// @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
// @OverloadResolutionByLambdaReturnType
// @kotlin.internal.InlineOnly
public inline fun CharSequence.maxOfOrNull(selector:
(Char) -> Float): Float? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}
// Returns the largest value among all values produced by [selector] function
// applied to each character in the char sequence or `null` if there are no characters.
// @SinceKotlin("1.4")
// @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
// @OverloadResolutionByLambdaReturnType
// @kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>>
CharSequence.maxOfOrNull(selector: (Char) -> R): R? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}
// Returns the largest value according to the provided [comparator]
// among all values produced by [selector] function applied to each character in the char sequence.
// @throws NoSuchElementException if the char sequence is empty.
// @SinceKotlin("1.4")
// @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
// @OverloadResolutionByLambdaReturnType
// @kotlin.internal.InlineOnly
public inline fun <R> CharSequence.maxOfWith(comparator:
Comparator<in R>, selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return maxValue
}
// Returns the largest value according to the provided [comparator]
// among all values produced by [selector] function applied to each character in the char sequence
// or `null` if there are no characters.
// @SinceKotlin("1.4")
// @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
// @OverloadResolutionByLambdaReturnType
// @kotlin.internal.InlineOnly
public inline fun <R>
CharSequence.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return maxValue
}
// Returns the largest character or `null` if there are no characters.
// @SinceKotlin("1.4")
public fun CharSequence.maxOrNull(): Char? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex)

```

```

{\n    val
    e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n@Deprecated("Use maxWithOrNull instead.",
ReplaceWith("this.maxWithOrNull(comparator)"))\n\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n\npublic fun CharSequence.maxWith(comparator: Comparator<in Char>): Char?
{\n    return maxWithOrNull(comparator)\n}\n\n/**\n * Returns the first character having the largest value
according to the provided [comparator] or `null` if there are no characters.\n * \n\n@SinceKotlin("1.4")\n\npublic fun
CharSequence.maxWithOrNull(comparator: Comparator<in Char>): Char? {\n    if (isEmpty()) return null\n    var
max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n
}\n    return max\n}\n\n@Deprecated("Use minOrNull instead.",
ReplaceWith("this.minOrNull()"))\n\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n\npublic fun CharSequence.min():
Char? {\n    return minOrNull()\n}\n\n@Deprecated("Use minByOrNull instead.",
ReplaceWith("this.minByOrNull(selector)"))\n\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince = "1.6")\n\npublic inline fun <R : Comparable<R>> CharSequence.minBy(selector: (Char) ->
R): Char? {\n    return minByOrNull(selector)\n}\n\n/**\n * Returns the first character yielding the smallest value of
the given function or `null` if there are no characters.\n * \n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n\n@SinceKotlin("1.4")\n\npublic inline fun <R :
Comparable<R>> CharSequence.minByOrNull(selector: (Char) -> R): Char? {\n    if (isEmpty()) return null\n    var
minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return minElem\n    var minValue =
selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (minValue > v)
{\n            minElem = e\n            minValue = v\n        }\n    }\n    return minElem\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each character in the char sequence.\n * \n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * \n * @throws NoSuchElementException if the char
sequence is empty.\n * \n\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CharSequence.minOf(selector: (Char) ->
Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for
(i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each character in the char sequence.\n * \n * \n * If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * \n * @throws NoSuchElementException if the char
sequence is empty.\n * \n\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CharSequence.minOf(selector: (Char) ->
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each character in the char sequence.\n * \n * \n * @throws NoSuchElementException if the char sequence is empty.\n * \n\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <R : Comparable<R>>
CharSequence.minOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each character in the char sequence or `null` if there are no
characters.\n * \n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n\n@SinceKotlin("1.4")\n\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\n@OverloadResolution
ByLambdaReturnType\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CharSequence.minOfOrNull(selector:

```

```

(Char) -> Double): Double? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each character in the char sequence or `null` if there are no characters.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOrNull(selector: (Char) -> Float): Float? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each character in the char sequence or `null` if there are no characters.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> CharSequence.minOrNull(selector: (Char) -> R): R? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each character in the char sequence.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharSequence.minOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each character in the char sequence or `null` if there are no characters.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharSequence.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n  if (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest character or `null` if there are no characters.\n */\n\n@SinceKotlin("1.4")\npublic fun CharSequence.minOrNull(): Char? {\n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (min > e) min = e\n  }\n  return min\n}\n\n@Deprecated("Use minWithOrNull instead.")\nReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")\npublic fun CharSequence.minWith(comparator: Comparator<in Char>): Char? {\n  return minWithOrNull(comparator)\n}\n\n/**\n * Returns the first character having the smallest value according to the provided [comparator] or `null` if there are no characters.\n */\n\n@SinceKotlin("1.4")\npublic fun CharSequence.minWithOrNull(comparator: Comparator<in Char>): Char? {\n  if (isEmpty()) return null\n  var min = this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (comparator.compare(min, e) > 0) min = e\n  }\n  return min\n}\n\n/**\n * Returns `true` if the char sequence has no characters.\n * \n * @sample\n * samples.collections.Collections.Aggregates.none\n */\n\n@SinceKotlin("1.4")\npublic fun CharSequence.none(): Boolean {\n  return isEmpty()\n}\n\n/**\n * Returns `true` if no characters match the given [predicate].\n * \n * @sample\n * samples.collections.Collections.Aggregates.noneWithPredicate\n */\n\n@SinceKotlin("1.4")\npublic inline fun CharSequence.none(predicate: (Char) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return false\n  return true\n}\n\n/**\n * Performs the given [action] on each character and returns the char sequence itself

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afterwards.\n *^@SinceKotlin("1.1")\npublic inline fun <S : CharSequence> S.onEach(action: (Char) -> Unit): S
{\n  return apply { for (element in this) action(element) }\n}\n/n/**\n * Performs the given [action] on each
character, providing sequential index with the character,\n * and returns the char sequence itself afterwards.\n *
@param [action] function that takes the index of
a character and the character itself\n * and performs the action on the character.\n
*^@SinceKotlin("1.4")\npublic inline fun <S : CharSequence> S.onEachIndexed(action: (index: Int, Char) ->
Unit): S {\n  return apply { forEachIndexed(action) }\n}\n/n/**\n * Accumulates value starting with the first
character and applying [operation] from left to right\n * to current accumulator value and each character.\n * \n *
Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way,\n *
please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function
that takes current accumulator value and a character,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduce\n *^@SinceKotlin("1.4")\npublic inline fun
CharSequence.reduce(operation: (acc: Char, Char) -> Char): Char {\n  if (isEmpty())\n    throw
UnsupportedOperationException("Empty char sequence can't
be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator =
operation(accumulator, this[index])\n  }\n  return accumulator\n}\n/n/**\n * Accumulates value starting with the
first character and applying [operation] from left to right\n * to current accumulator value and each character with its
index in the original char sequence.\n * \n * Throws an exception if this char sequence is empty. If the char sequence
can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes the index of a character, current accumulator value and the
character itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n *^@SinceKotlin("1.4")\npublic inline fun CharSequence.reduceIndexed(operation:
(index: Int, acc: Char, Char) -> Char): Char {\n  if (isEmpty())\n    throw
UnsupportedOperationException("Empty
char sequence can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator
= operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n/n/**\n * Accumulates value starting
with the first character and applying [operation] from left to right\n * to current accumulator value and each
character with its index in the original char sequence.\n * \n * Returns `null` if the char sequence is empty.\n * \n *
@param [operation] function that takes the index of a character, current accumulator value and the character itself,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n *^@SinceKotlin("1.4")\npublic inline fun
CharSequence.reduceIndexedOrNull(operation: (index: Int, acc: Char, Char) -> Char): Char? {\n  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index,
accumulator, this[index])\n  }\n  return accumulator\n}\n/n/**\n * Accumulates value starting with the first
character and applying [operation] from left to right\n * to current accumulator value and each character.\n * \n *
Returns `null` if the char sequence is empty.\n * \n * @param [operation] function that takes current accumulator
value and a character,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n *^@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharSequence.reduceOrNull(operation: (acc: Char, Char) -> Char): Char? {\n  if (isEmpty())\n    return null\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(accumulator, this[index])\n  }\n  return accumulator\n}\n/n/**\n * Accumulates value starting with the last character and applying [operation]
from right to left\n * to each character and current accumulator
value.\n * \n * Throws an exception if this char sequence is empty. If the char sequence can be empty in an
expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n *
@param [operation] function that takes a character and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n *^@SinceKotlin("1.4")\npublic inline
fun CharSequence.reduceRight(operation: (Char, acc: Char) -> Char): Char {\n  var index = lastIndex\n  if (index

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< 0) throw UnsupportedOperationException("Empty char sequence can't be reduced.")\n    var accumulator =
get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with the last character and applying [operation] from right to
left\n * to each character with its index in the original char sequence and current accumulator
value.\n * \n * Throws an exception if this char sequence is empty. If the char sequence can be empty in an
expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n
* @param [operation] function that takes the index of a character, the character itself and current accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\n\npublic inline fun
CharSequence.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {\n    var index =
lastIndex\n    if (index < 0) throw UnsupportedOperationException("Empty char sequence can't be reduced.")\n
    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index),
accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last
character and applying [operation] from right to left\n * to
each character with its index in the original char sequence and current accumulator value.\n * \n * Returns `null` if
the char sequence is empty.\n * \n * @param [operation] function that takes the index of a character, the character
itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\n\npublic inline fun
CharSequence.reduceRightIndexedOrNull(operation: (index: Int, Char, acc: Char) -> Char): Char? {\n    var index =
lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n
accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with the last character and applying [operation] from right to left\n * to each character
and current accumulator value.\n * \n * Returns `null` if the char sequence is empty.\n * \n *
@param [operation] function that takes a character and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*/\n\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic inline fun
CharSequence.reduceRightOrNull(operation: (Char, acc: Char) -> Char): Char? {\n    var index = lastIndex\n    if
(index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator =
operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each character and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes
current accumulator value and a character, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n */\n\n@SinceKotlin("1.4")\n\npublic inline fun <R>
CharSequence.runningFold(initial: R, operation: (acc: R, Char) -> R): List<R> {\n    if (isEmpty()) return
listOf(initial)\n    val result = ArrayList<R>(length + 1).apply { add(initial) }\n    var accumulator = initial\n    for
(element in this) {\n        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each character, its index in the original char sequence and current accumulator
value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of a character, current accumulator value\n * and the character itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*/\n\n@SinceKotlin("1.4")\n\npublic inline fun <R> CharSequence.runningFoldIndexed(initial: R, operation: (index:
Int, acc: R, Char) -> R): List<R> {\n    if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(length +
1).apply { add(initial) }\n    var accumulator = initial\n    for (index in indices) {\n        accumulator =
operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each character and current accumulator value that starts with the first character of this char sequence. Note that `acc` value passed to [operation] function should not be mutated; otherwise

it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and a character, and calculates the next accumulator value. @sample

```
samples.collections.Collections.Aggregates.runningReduce\n *^@SinceKotlin("1.4")\npublic inline fun CharSequence.runningReduce(operation: (acc: Char, Char) -> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Char>(length).apply { add(accumulator) }\n    for (index in 1 until length) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right to each character, its index in the original char sequence and current accumulator value that starts with the first character of this char sequence. Note that `acc` value passed
```

to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes the index of a character, current accumulator value and the character itself, and calculates the next accumulator value. @sample

```
samples.collections.Collections.Aggregates.runningReduce\n *^@SinceKotlin("1.4")\npublic inline fun CharSequence.runningReduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Char>(length).apply { add(accumulator) }\n    for (index in 1 until length) {\n        accumulator = operation(index, accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right to each character and current accumulator value that starts with
```

[initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and a character, and calculates the next accumulator value. @sample

```
samples.collections.Collections.Aggregates.scan\n *^@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R> CharSequence.scan(initial: R, operation: (acc: R, Char) -> R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right to each character, its index in the original char sequence and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes the index of a character, current accumulator value and the character itself, and calculates the next accumulator value. @sample
```

```
samples.collections.Collections.Aggregates.scan\n *^@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R> CharSequence.scanIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each character in the char sequence. @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun CharSequence.sumBy(selector: (Char) -> Int): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each character in the char sequence. @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun CharSequence.sumByDouble(selector: (Char) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
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[selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.sumOf(selector: (Char) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.sumOf(selector: (Char) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.sumOf(selector: (Char) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n
        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.sumOf(selector: (Char) -> UInt): UInt {\n
    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each character in the char
sequence.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.sumOf(selector: (Char) -> ULong):
ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n
return
sum\n}\n\n/**\n * Splits this char sequence into a list of strings each not exceeding the given [size].\n * \n * The
last string in the resulting list may have fewer characters than the given [size].\n * \n * @param size the number of
elements to take in each string, must be positive and can be greater than the number of elements in this char
sequence.\n * \n * @sample samples.text.Strings.chunked\n *\n@SinceKotlin("1.2")\npublic fun
CharSequence.chunked(size: Int): List<String> {\n    return windowed(size, size, partialWindows =
true)\n}\n\n/**\n * Splits this char sequence into several char sequences each not exceeding the given [size]\n * and
applies the given [transform] function to an each.\n * \n * @return list of results of the [transform] applied to an
each char sequence.\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid
only inside that function.\n * \n * You should not store it or allow it to escape in some way, unless you made a
snapshot of it.\n * \n * The last char sequence may have fewer characters than the given [size].\n * \n * @param size the
number of elements to take in each char sequence, must be positive and can be greater than the number of elements
in this char sequence.\n * \n * @sample samples.text.Strings.chunkedTransform\n
*\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.chunked(size: Int, transform: (CharSequence) -> R):
List<R> {\n    return windowed(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n * Splits this
char sequence into a sequence of strings each not exceeding the given [size].\n * \n * The last string in the resulting
sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in
each string, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample
samples.collections.Collections.Transformations.chunked\n *\n@SinceKotlin("1.2")\npublic fun
CharSequence.chunkedSequence(size:
Int): Sequence<String> {\n    return chunkedSequence(size) { it.toString() }\n}\n\n/**\n * Splits this char sequence
into several char sequences each not exceeding the given [size]\n * and applies the given [transform] function to an

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each.\n * \n * @return sequence of results of the [transform] applied to an each char sequence.\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * The last char sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample samples.text.Strings.chunkedTransformToSequence\n * \n * @SinceKotlin("1.2")\n * public fun <R> CharSequence.chunkedSequence(size: Int, transform: (CharSequence) -> R): Sequence<R> {\n * return windowedSequence(size, size, partialWindows = true, transform = transform)\n * }\n * \n * Splits the original char sequence into pair of char sequences,\n * where *first* char sequence contains characters for which [predicate] yielded `true`,\n * while *second* char sequence contains characters for which [predicate] yielded `false`.\n * \n * @sample samples.text.Strings.partition\n * \n * public inline fun CharSequence.partition(predicate: (Char) -> Boolean): Pair<CharSequence, CharSequence> {\n * val first = StringBuilder()\n * val second = StringBuilder()\n * for (element in this) {\n * if (predicate(element)) {\n * first.append(element)\n * } else {\n * second.append(element)\n * }\n * }\n * return Pair(first, second)\n * }\n * \n * Splits the original string into pair of strings,\n * where *first* string contains characters for which [predicate] yielded `true`,\n * while *second* string contains characters for which [predicate] yielded `false`.\n * \n * @sample samples.text.Strings.partition\n * \n * public inline fun String.partition(predicate: (Char) -> Boolean): Pair<String, String> {\n * val first = StringBuilder()\n * val second = StringBuilder()\n * for (element in this) {\n * if (predicate(element)) {\n * first.append(element)\n * } else {\n * second.append(element)\n * }\n * }\n * return Pair(first.toString(), second.toString())\n * }\n * \n * Returns a list of snapshots of the window of the given [size]\n * sliding along this char sequence with the given [step], where each\n * snapshot is a string.\n * \n * Several last strings may have fewer characters than the given [size].\n * \n * Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n * \n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample samples.collections.Sequences.Transformations.takeWindows\n * \n * @SinceKotlin("1.2")\n * public fun CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): List<String> {\n * return windowed(size, step, partialWindows) { it.toString() }\n * }\n * \n * Returns a list of results of applying the given [transform] function to\n * an each char sequence representing a view over the window of the given [size]\n * sliding along this char sequence with the given [step].\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * Several last char sequences may have fewer characters than the given [size].\n * \n * Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n * \n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample samples.collections.Sequences.Transformations.averageWindows\n * \n * @SinceKotlin("1.2")\n * public fun <R> CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (CharSequence) -> R): List<R> {\n * checkWindowSizeStep(size, step)\n * val thisSize = this.length\n * val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n * val result = ArrayList<R>(resultCapacity)\n * var index = 0\n * while (index in 0 until thisSize) {\n * val end = index + size\n * val coercedEnd = if (end < 0 || end > thisSize) {\n * if (partialWindows)\n * thisSize else break\n * } else end\n * result.add(transform(subSequence(index, coercedEnd)))\n * index += step\n * }\n * return result\n * }\n * \n * Returns a sequence of snapshots of the window of the given [size]\n * sliding along this char sequence with the given [step], where each\n * snapshot is a string.\n * \n * Several last strings may have fewer characters than the given [size].\n * \n * Both [size] and [step] must be positive and can be greater than the

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number of elements in this char sequence.\n * @param size the number of elements to take in each window\n *
@param step the number of elements to move the window forward by on an each step, by default 1\n * @param
partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which
means partial windows won't be preserved\n * \n * @sample
samples.collections.Sequences.Transformations.takeWindows\n *^\n@SinceKotlin("1.2")\npublic fun
CharSequence.windowedSequence(size: Int,
    step: Int = 1, partialWindows: Boolean = false): Sequence<String> {\n    return windowedSequence(size, step,
partialWindows) { it.toString() }\n}\n\n/**\n * Returns a sequence of results of applying the given [transform]
function to\n * an each char sequence representing a view over the window of the given [size]\n * sliding along this
char sequence with the given [step].\n * \n * Note that the char sequence passed to the [transform] function is
ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way,
unless you made a snapshot of it.\n * Several last char sequences may have fewer characters than the given [size].\n
*\n * Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n
*\n * @param size the number of elements to take in each window\n * @param step the number of elements to move
the window forward by on an each step, by default 1\n * @param partialWindows controls whether
or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be
preserved\n * \n * @sample samples.collections.Sequences.Transformations.averageWindows\n
*^\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.windowedSequence(size: Int, step: Int = 1,
partialWindows: Boolean = false, transform: (CharSequence) -> R): Sequence<R> {\n
    checkWindowSizeStep(size, step)\n    val windows = (if (partialWindows) indices else 0 until length - size + 1) step
step\n    return windows.asSequence().map { index ->\n        val end = index + size\n        val coercedEnd = if (end <
0 || end > length) length else end\n        transform(subSequence(index, coercedEnd))\n    }\n}\n\n/**\n * Returns a
list of pairs built from the characters of `this` and the [other] char sequences with the same index\n * The returned
list has length of the shortest char sequence.\n * \n * @sample samples.text.Strings.zip\n *^\npublic infix fun
CharSequence.zip(other: CharSequence):
    List<Pair<Char, Char>> {\n    return zip(other) { c1, c2 -> c1 to c2 }\n}\n\n/**\n * Returns a list of values built
from the characters of `this` and the [other] char sequences with the same index\n * using the provided [transform]
function applied to each pair of characters.\n * The returned list has length of the shortest char sequence.\n * \n *
@sample samples.text.Strings.zipWithTransform\n *^\npublic inline fun <V> CharSequence.zip(other:
CharSequence, transform: (a: Char, b: Char) -> V): List<V> {\n    val length = minOf(this.length, other.length)\n
    val list = ArrayList<V>(length)\n    for (i in 0 until length) {\n        list.add(transform(this[i], other[i]))\n    }\n
    return list\n}\n\n/**\n * Returns a list of pairs of each two adjacent characters in this char sequence.\n * \n * The
returned list is empty if this char sequence contains less than two characters.\n * \n * @sample
samples.collections.Collections.Transformations.zipWithNext\n *^\n@SinceKotlin("1.2")\npublic
fun CharSequence.zipWithNext(): List<Pair<Char, Char>> {\n    return zipWithNext { a, b -> a to b }\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to an each pair of two adjacent
characters in this char sequence.\n * \n * The returned list is empty if this char sequence contains less than two
characters.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n
*^\n@SinceKotlin("1.2")\npublic inline fun <R> CharSequence.zipWithNext(transform: (a: Char, b: Char) -> R):
List<R> {\n    val size = length - 1\n    if (size < 1) return emptyList()\n    val result = ArrayList<R>(size)\n    for
(index in 0 until size) {\n        result.add(transform(this[index], this[index + 1]))\n    }\n    return result\n}\n\n/**\n
* Creates an [Iterable] instance that wraps the original char sequence returning its characters when being iterated.\n
*\n *^\npublic fun CharSequence.asIterable(): Iterable<Char> {\n
    if (this is String && isEmpty()) return emptyList()\n    return Iterable { this.iterator() }\n}\n\n/**\n * Creates a
[Sequence] instance that wraps the original char sequence returning its characters when being iterated.\n *^\npublic
fun CharSequence.asSequence(): Sequence<Char> {\n    if (this is String && isEmpty()) return emptySequence()\n
    return Sequence { this.iterator() }\n}\n\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

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license/LICENSE.txt file.\n

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*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage  
kotlin.text\nimport kotlin.contracts.contract\nimport kotlin.jvm.JvmName\n\n/**\n * Returns a copy of this string  
converted to upper case using the rules of the default locale.\n */\n@Deprecated("Use uppercase() instead.",  
ReplaceWith("uppercase()"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic  
expect fun String.toUpperCase(): String\n\n/**\n * Returns a copy of this string converted to upper case using  
Unicode mapping rules of the invariant locale.\n */\n * This function supports one-to-many and many-to-one  
character mapping,\n * thus the length of the returned string can be different from the length of the original string.\n */\n * @sample samples.text.Strings.uppercase\n\n*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun  
String.uppercase(): String\n\n/**\n * Returns a copy of this string converted to lower case using the rules of the  
default locale.\n */\n@Deprecated("Use lowercase() instead.",  
ReplaceWith("lowercase()"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun  
String.toLowerCase(): String\n\n/**\n * Returns a copy of this string converted to lower case using Unicode  
mapping rules of the invariant locale.\n */\n * This function supports one-to-many and many-to-one character  
mapping,\n * thus the  
length of the returned string can be different from the length of the original string.\n */\n * @sample  
samples.text.Strings.lowercase\n\n*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun  
String.lowercase(): String\n\n/**\n * Returns a copy of this string having its first letter titlecased using the rules of  
the default locale,\n * or the original string if it's empty or already starts with a title case letter.\n */\n * The title case  
of a character is usually the same as its upper case with several exceptions.\n * The particular list of characters with  
the special title case form depends on the underlying platform.\n */\n * @sample samples.text.Strings.capitalize\n\n*\n\n@Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { if (it.isLowerCase())  
it.titlecase() else it.toString() }"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun  
String.capitalize(): String\n\n/**\n * Returns a copy of this string having  
its first letter lowercased using the rules of the default locale,\n * or the original string if it's empty or already starts  
with a lower case letter.\n */\n * @sample samples.text.Strings.decapitalize\n\n*\n\n@Deprecated("Use  
replaceFirstChar instead.", ReplaceWith("replaceFirstChar { it.lowercase()  
}"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun String.decapitalize(): String\n\n/**\n * Returns a sub sequence of this char sequence having leading and trailing characters matching the [predicate]  
removed.\n */\n\npublic inline fun CharSequence.trim(predicate: (Char) -> Boolean): CharSequence {\n    var  
startIndex = 0\n    var endIndex = length - 1\n    var startFound = false\n\n    while (startIndex <= endIndex) {\n        val index = if (!startFound) startIndex else endIndex\n        val match = predicate(this[index])\n\n        if  
(!startFound) {\n            if (!match)\n                startFound = true\n            else\n                startIndex += 1\n        } else {\n            if (!match)\n                break\n            else\n                endIndex -= 1\n        }\n    }\n\n    return  
subSequence(startIndex, endIndex + 1)\n}\n\n/**\n * Returns a string having leading and trailing characters  
matching the [predicate] removed.\n */\n\npublic inline fun String.trim(predicate: (Char) -> Boolean): String =\n(this as CharSequence).trim(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having  
leading characters matching the [predicate] removed.\n */\n\npublic inline fun CharSequence.trimStart(predicate:  
(Char) -> Boolean): CharSequence {\n    for (index in this.indices)\n        if (!predicate(this[index]))\n            return  
subSequence(index, length)\n    return ""\n}\n\n/**\n * Returns a string having leading characters matching the  
[predicate] removed.\n */\n\npublic inline fun String.trimStart(predicate: (Char) -> Boolean): String =\n(this as  
CharSequence).trimStart(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having trailing characters matching the [predicate] removed.\n */\n\npublic inline fun CharSequence.trimEnd(predicate: (Char) -> Boolean): CharSequence {\n    for (index in  
this.indices.reversed())\n        if (!predicate(this[index]))\n            return subSequence(0, index + 1)\n    return  
""\n}\n\n/**\n * Returns a string having trailing characters matching the [predicate] removed.\n */\n\npublic inline
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fun String.trimEnd(predicate: (Char) -> Boolean): String =\n    (this as
CharSequence).trimEnd(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having
leading and trailing characters from the [chars] array removed.\n */\npublic fun CharSequence.trim(vararg chars:
Char): CharSequence = trim { it in chars }\n\n/**\n * Returns a string having leading and trailing characters from
the [chars] array removed.\n */\npublic fun String.trim(vararg chars: Char): String = trim { it in chars }\n\n/**\n *
Returns a sub
sequence of this char sequence having leading characters from the [chars] array removed.\n */\npublic fun
CharSequence.trimStart(vararg chars: Char): CharSequence = trimStart { it in chars }\n\n/**\n * Returns a string
having leading characters from the [chars] array removed.\n */\npublic fun String.trimStart(vararg chars: Char):
String = trimStart { it in chars }\n\n/**\n * Returns a sub sequence of this char sequence having trailing characters
from the [chars] array removed.\n */\npublic fun CharSequence.trimEnd(vararg chars: Char): CharSequence =
trimEnd { it in chars }\n\n/**\n * Returns a string having trailing characters from the [chars] array removed.\n
*/\npublic fun String.trimEnd(vararg chars: Char): String = trimEnd { it in chars }\n\n/**\n * Returns a sub
sequence of this char sequence having leading and trailing whitespace removed.\n */\npublic fun
CharSequence.trim(): CharSequence = trim(Char::isWhitespace)\n\n/**\n * Returns a string having leading and
trailing whitespace
removed.\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.trim(): String = (this as
CharSequence).trim().toString()\n\n/**\n * Returns a sub sequence of this char sequence having leading whitespace
removed.\n */\npublic fun CharSequence.trimStart(): CharSequence = trimStart(Char::isWhitespace)\n\n/**\n *
Returns a string having leading whitespace removed.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
String.trimStart(): String = (this as CharSequence).trimStart().toString()\n\n/**\n * Returns a sub sequence of this
char sequence having trailing whitespace removed.\n */\npublic fun CharSequence.trimEnd(): CharSequence =
trimEnd(Char::isWhitespace)\n\n/**\n * Returns a string having trailing whitespace removed.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun String.trimEnd(): String = (this as
CharSequence).trimEnd().toString()\n\n/**\n * Returns a char sequence with content of this char sequence padded at
the beginning\n * to the specified [length] with the specified
character or space.\n */\n * @param length the desired string length.\n * @param padChar the character to pad
string with, if it has length less than the [length] specified. Space is used by default.\n * @return Returns a char
sequence of length at least [length] consisting of `this` char sequence prepended with [padChar] as many times\n *
as are necessary to reach that length.\n */\n@sample samples.text.Strings.padStart\n */\npublic fun
CharSequence.padStart(length: Int, padChar: Char = ' '): CharSequence {\n    if (length < 0)\n        throw
IllegalArgumentException("Desired length $length is less than zero.")\n    if (length <= this.length)\n        return
this.subSequence(0, this.length)\n    val sb = StringBuilder(length)\n    for (i in 1..(length - this.length))\n        sb.append(padChar)\n    sb.append(this)\n    return sb\n}\n\n/**\n * Pads the string to the specified [length] at the
beginning with the specified character or space.\n */\n * @param length the desired string
length.\n * @param padChar the character to pad string with, if it has length less than the [length] specified. Space
is used by default.\n * @return Returns a string of length at least [length] consisting of `this` string prepended
with [padChar] as many times\n * as are necessary to reach that length.\n */\n@sample samples.text.Strings.padStart\n
*/\npublic fun String.padStart(length: Int, padChar: Char = ' '): String =\n    (this as CharSequence).padStart(length,
padChar).toString()\n\n/**\n * Returns a char sequence with content of this char sequence padded at the end\n * to
the specified [length] with the specified character or space.\n */\n * @param length the desired string length.\n *
@param padChar the character to pad string with, if it has length less than the [length] specified. Space is used by
default.\n * @return Returns a char sequence of length at least [length] consisting of `this` char sequence appended
with [padChar] as many times\n * as are necessary to reach that
length.\n * @sample samples.text.Strings.padEnd\n */\npublic fun CharSequence.padEnd(length: Int, padChar:
Char = ' '): CharSequence {\n    if (length < 0)\n        throw IllegalArgumentException("Desired length $length is
less than zero.")\n    if (length <= this.length)\n        return this.subSequence(0, this.length)\n    val sb =
StringBuilder(length)\n    sb.append(this)\n    for (i in 1..(length - this.length))\n        sb.append(padChar)\n    return

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sb\n}\n\n/**\n * Pads the string to the specified [length] at the end with the specified character or space.\n *\n *
@param length the desired string length.\n * @param padChar the character to pad string with, if it has length less
than the [length] specified. Space is used by default.\n * @return Returns a string of length at least [length]
consisting of `this` string appended with [padChar] as many times\n * as are necessary to reach that length.\n *
@sample samples.text.Strings.padEnd\n */\npublic fun String.padEnd(length:
Int, padChar: Char = ' '): String =\n (this as CharSequence).padEnd(length, padChar).toString()\n\n/**\n * Returns
`true` if this nullable char sequence is either `null` or empty.\n *\n * @sample
samples.text.Strings.stringIsNullOrEmpty\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence?.isNullOrEmpty(): Boolean {\n contract {\n returns(false) implies (this@isNullOrEmpty !=
null)\n }\n\n return this == null || this.length == 0\n}\n\n/**\n * Returns `true` if this char sequence is empty
(contains no characters).\n *\n * @sample samples.text.Strings.stringIsEmpty\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isEmpty(): Boolean = length == 0\n\n/**\n *
Returns `true` if this char sequence is not empty.\n *\n * @sample samples.text.Strings.stringIsNotEmpty\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isNotEmpty(): Boolean = length > 0\n\n//
implemented differently in JVM and JS\n/public fun String.isBlank(): Boolean
= length() == 0 || all { it.isWhitespace() }\n\n/**\n * Returns `true` if this char sequence is not empty and contains
some characters except of whitespace characters.\n *\n * @sample samples.text.Strings.stringIsNotBlank\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isNotBlank(): Boolean = !isBlank()\n\n/**\n *
Returns `true` if this nullable char sequence is either `null` or empty or consists solely of whitespace characters.\n
*\n * @sample samples.text.Strings.stringIsNullOrBlank\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence?.isNullOrBlank(): Boolean {\n contract {\n returns(false) implies (this@isNullOrBlank !=
null)\n }\n\n return this == null || this.isBlank()\n}\n\n/**\n * Iterator for characters of the given char sequence.\n
*/\npublic operator fun CharSequence.iterator(): CharIterator = object : CharIterator() {\n private var index = 0\n\n
public override fun nextChar(): Char = get(index++)\n\n public override
fun hasNext(): Boolean = index < length\n}\n\n/** Returns the string if it is not `null`, or the empty string
otherwise. */\n@kotlin.internal.InlineOnly\npublic inline fun String?.orEmpty(): String = this ?: ""\n\n/**\n *
Returns this char sequence if it's not empty\n * or the result of calling [defaultValue] function if the char sequence is
empty.\n *\n * @sample samples.text.Strings.stringIfEmpty\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifEmpty(defaultValue: () ->
R): R where C : CharSequence, C : R =\n if (isEmpty()) defaultValue() else this\n\n/**\n * Returns this char
sequence if it is not empty and doesn't consist solely of whitespace characters,\n * or the result of calling
[defaultValue] function otherwise.\n *\n * @sample samples.text.Strings.stringIfNotBlank\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifBlank(defaultValue: () -> R):
R where C : CharSequence, C : R =\n if (isBlank()) defaultValue()
else this\n\n/**\n * Returns the range of valid character indices for this char sequence.\n */\npublic val
CharSequence.indices: IntRange\n get() = 0..length - 1\n\n/**\n * Returns the index of the last character in the
char sequence or -1 if it is empty.\n */\npublic val CharSequence.lastIndex: Int\n get() = this.length - 1\n\n/**\n *
Returns `true` if this CharSequence has Unicode surrogate pair at the specified [index].\n */\npublic fun
CharSequence.hasSurrogatePairAt(index: Int): Boolean {\n return index in 0..length - 2\n &&
this[index].isHighSurrogate()\n && this[index + 1].isLowSurrogate()\n}\n\n/**\n * Returns a substring
specified by the given [range] of indices.\n */\npublic fun String.substring(range: IntRange): String =
substring(range.start, range.endInclusive + 1)\n\n/**\n * Returns a subsequence of this char sequence specified by
the given [range] of indices.\n */\npublic fun CharSequence.subSequence(range: IntRange): CharSequence
= subSequence(range.start, range.endInclusive + 1)\n\n/**\n * Returns a subsequence of this char sequence.\n *\n *
This extension is chosen only for invocation with old-named parameters.\n * Replace parameter names with the
same as those of [CharSequence.subSequence].\n
*/\n@kotlin.internal.InlineOnly\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false
warning\n@Deprecated("Use parameters named startIndex and endIndex.", ReplaceWith("subSequence(startIndex

```

```

= start, endIndex = end)\")\n\npublic inline fun String.subSequence(start: Int, end: Int): CharSequence =
subSequence(start, end)\n\n/**\n * Returns a substring of chars from a range of this char sequence starting at the
[startIndex] and ending right before the [endIndex].\n * \n * @param startIndex the start index (inclusive).\n *
@param endIndex the end index (exclusive). If not specified, the length of the char sequence is used.\n
*\n * @kotlin.internal.InlineOnly\n\npublic inline fun CharSequence.substring(startIndex: Int, endIndex:
Int = length): String = subSequence(startIndex, endIndex).toString()\n\n/**\n * Returns a substring of chars at
indices from the specified [range] of this char sequence.\n * \n\npublic fun CharSequence.substring(range: IntRange):
String = subSequence(range.start, range.endInclusive + 1).toString()\n\n/**\n * Returns a substring before the first
occurrence of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which
defaults to the original string.\n * \n\npublic fun String.substringBefore(delimiter: Char, missingDelimiterValue:
String = this): String {\n    val index = indexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else
substring(0, index)\n}\n\n/**\n * Returns a substring before the first occurrence of [delimiter].\n * If the string does
not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n * \n\npublic fun
String.substringBefore(delimiter: String, missingDelimiterValue: String
= this): String {\n    val index = indexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else
substring(0, index)\n}\n\n/**\n * Returns a substring after the first occurrence of [delimiter].\n * If the string does
not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n * \n\npublic fun
String.substringAfter(delimiter: Char, missingDelimiterValue: String = this): String {\n    val index =
indexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else substring(index + 1, length)\n}\n\n/**\n *
Returns a substring after the first occurrence of [delimiter].\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n * \n\npublic fun String.substringAfter(delimiter:
String, missingDelimiterValue: String = this): String {\n    val index = indexOf(delimiter)\n    return if (index == -1)
missingDelimiterValue else substring(index + delimiter.length, length)\n}\n\n/**\n * Returns a substring before the last
occurrence of [delimiter].\n * If the string does not contain the delimiter,
returns [missingDelimiterValue] which defaults to the original string.\n * \n\npublic fun
String.substringBeforeLast(delimiter: Char, missingDelimiterValue: String = this): String {\n    val index =
lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else substring(0, index)\n}\n\n/**\n *
Returns a substring before the last occurrence of [delimiter].\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n * \n\npublic fun String.substringBeforeLast(delimiter:
String, missingDelimiterValue: String = this): String {\n    val index = lastIndexOf(delimiter)\n    return if (index ==
-1) missingDelimiterValue else substring(0, index)\n}\n\n/**\n * Returns a substring after the last occurrence of
[delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue]
which defaults to the original string.\n * \n\npublic fun String.substringAfterLast(delimiter: Char,
missingDelimiterValue: String = this): String {\n    val index = lastIndexOf(delimiter)\n    return if (index == -1)
missingDelimiterValue else substring(index + 1, length)\n}\n\n/**\n * Returns a substring after the last occurrence
of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the
original string.\n * \n\npublic fun String.substringAfterLast(delimiter: String, missingDelimiterValue: String = this):
String {\n    val index = lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else
substring(index + delimiter.length, length)\n}\n\n/**\n * Returns a char sequence with content of this char sequence
where its part at the given range\n * is replaced with the [replacement] char sequence.\n * @param startIndex the
index of the first character to be replaced.\n * @param endIndex the index of the first character
after the replacement to keep in the string.\n * \n\npublic fun CharSequence.replaceRange(startIndex: Int, endIndex:
Int, replacement: CharSequence): CharSequence {\n    if (endIndex < startIndex)\n        throw
IndexOutOfBoundsException("End index ($endIndex) is less than start index ($startIndex).")\n    val sb =
StringBuilder()\n    sb.appendRange(this, 0, startIndex)\n    sb.append(replacement)\n    sb.appendRange(this,
endIndex, length)\n    return sb\n}\n\n/**\n * Replaces the part of the string at the given range with the
[replacement] char sequence.\n * @param startIndex the index of the first character to be replaced.\n * @param
endIndex the index of the first character after the replacement to keep in the string.\n

```

```

*  

@kotlin.internal.InlineOnly  

public inline fun String.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence): String =  

    (this as CharSequence).replaceRange(startIndex, endIndex, replacement).toString()  

    * Returns a char sequence with content of this char sequence where its part at the given [range] is replaced with the [replacement] char sequence.  

    * The end index of the [range] is included in the part to be replaced.  

public fun CharSequence.replaceRange(range: IntRange, replacement: CharSequence): CharSequence =  

    replaceRange(range.start, range.endInclusive + 1, replacement)  

    * Replace the part of string at the given [range] with the [replacement] string.  

    * The end index of the [range] is included in the part to be replaced.  

*  

@kotlin.internal.InlineOnly  

public inline fun String.removeRange(startIndex: Int, endIndex: Int): String =  

    (this as CharSequence).removeRange(startIndex, endIndex).toString()  

    * Returns a char sequence with content of this char sequence where its part at the given range is removed.  

    * @param startIndex the index of the first character to be removed.  

    * @param endIndex the index of the first character after the removed part to keep in the string.  

    * [endIndex] is not included in the removed part.  

public fun CharSequence.removeRange(startIndex: Int, endIndex: Int): CharSequence {  

    if (endIndex < startIndex) throw IndexOutOfBoundsException("End index ($endIndex) is less than start index ($startIndex).")  

    if (endIndex == startIndex) return this.subSequence(0, length)  

    val sb = StringBuilder(length - (endIndex - startIndex))  

    sb.appendRange(this, 0, startIndex)  

    sb.appendRange(this, endIndex, length)  

    return sb  

}  

    * Removes the part of a string at a given range.  

    * @param startIndex the index of the first character to be removed.  

    * @param endIndex the index of the first character after the removed part to keep in the string.  

    * [endIndex] is not included in the removed part.  

@kotlin.internal.InlineOnly  

public inline fun String.removeRange(range: IntRange): String =  

    (this as CharSequence).removeRange(range.start, range.endInclusive + 1)  

    * Removes the part of a string at the given [range].  

    * The end index of the [range] is included in the removed part.  

@kotlin.internal.InlineOnly  

public inline fun String.removePrefix(prefix: CharSequence): CharSequence =  

    (this as CharSequence).removePrefix(prefix).toString()  

    * If this char sequence starts with the given [prefix], returns a new char sequence with the prefix removed. Otherwise, returns a new char sequence with the same characters.  

public fun CharSequence.removePrefix(prefix: CharSequence): CharSequence {  

    if (startsWith(prefix)) return subSequence(prefix.length, length)  

    return this  

}  

    * If this string starts with the given [prefix], returns a copy of this string with the prefix removed. Otherwise, returns this string.  

public fun String.removePrefix(prefix: CharSequence): String {  

    if (startsWith(prefix)) return substring(prefix.length)  

    return this  

}  

    * If this char sequence ends with the given [suffix], returns a new char sequence with the suffix removed. Otherwise, returns a new char sequence with the same characters.  

public fun CharSequence.removeSuffix(suffix: CharSequence): CharSequence {  

    if (endsWith(suffix)) return subSequence(0, length - suffix.length)  

    return this  

}  

    * If this string ends with the given [suffix], returns a copy of this string with the suffix removed. Otherwise, returns this string.  

public fun String.removeSuffix(suffix: CharSequence): String {  

    if (endsWith(suffix)) return substring(0, length - suffix.length)  

    return this  

}  

    * When this char sequence starts with the given [prefix] and ends with the given [suffix], returns a new char sequence having both the given [prefix] and [suffix] removed.  

    * Otherwise returns a new char sequence with the same characters.  

public fun CharSequence.removeSurrounding(prefix: CharSequence, suffix: CharSequence): CharSequence {  

    if ((length >= prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix)) return subSequence(prefix.length, length - suffix.length)  

    return this  

}  

    * Removes from a string both the given [prefix] and [suffix] if and only if it starts with the [prefix] and ends with the [suffix].  

    * Otherwise returns this string unchanged.  

public fun String.removeSurrounding(prefix: CharSequence, suffix: CharSequence): String {  

    if ((length >= prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix)) return substring(prefix.length, length - suffix.length)  

    return this  

}

```

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CharSequence, suffix: CharSequence): String {\n  if ((length >= prefix.length + suffix.length) &&
startsWith(prefix) &&
endsWith(suffix)) {\n    return substring(prefix.length, length - suffix.length)\n  }\n  return this\n}\n\n/**\n *
When this char sequence starts with and ends with the given [delimiter],\n * returns a new char sequence having this
[delimiter] removed both from the start and end.\n * Otherwise returns a new char sequence with the same
characters.\n */\npublic fun CharSequence.removeSurrounding(delimiter: CharSequence): CharSequence =
removeSurrounding(delimiter, delimiter)\n\n/**\n * Removes the given [delimiter] string from both the start and the
end of this string\n * if and only if it starts with and ends with the [delimiter].\n * Otherwise returns this string
unchanged.\n */\npublic fun String.removeSurrounding(delimiter: CharSequence): String =
removeSurrounding(delimiter, delimiter)\n\n/**\n * Replace part of string before the first occurrence of given
delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue]
which defaults to the original string.\n */\npublic fun String.replaceBefore(delimiter: Char, replacement: String,
missingDelimiterValue: String = this): String {\n  val index = indexOf(delimiter)\n  return if (index == -1)
missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n/**\n * Replace part of string before the first
occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceBefore(delimiter:
String, replacement: String, missingDelimiterValue: String = this): String {\n  val index = indexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n/**\n * Replace part
of string after the first occurrence of given delimiter with the [replacement] string.\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the
original string.\n */\npublic fun String.replaceAfter(delimiter: Char, replacement: String, missingDelimiterValue:
String = this): String {\n  val index = indexOf(delimiter)\n  return if (index == -1) missingDelimiterValue else
replaceRange(index + 1, length, replacement)\n}\n\n/**\n * Replace part of string after the first occurrence of given
delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfter(delimiter: String,
replacement: String, missingDelimiterValue: String = this): String {\n  val index = indexOf(delimiter)\n  return if
(index == -1) missingDelimiterValue else replaceRange(index + delimiter.length, length, replacement)\n}\n\n/**\n *
Replace part of string after the last occurrence of given delimiter with the [replacement] string.\n * If the string does
not contain the delimiter, returns [missingDelimiterValue] which defaults
to the original string.\n */\npublic fun String.replaceAfterLast(delimiter: String, replacement: String,
missingDelimiterValue: String = this): String {\n  val index = lastIndexOf(delimiter)\n  return if (index == -1)
missingDelimiterValue else replaceRange(index + delimiter.length, length, replacement)\n}\n\n/**\n * Replace part
of string after the last occurrence of given delimiter with the [replacement] string.\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun
String.replaceAfterLast(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {\n  val
index = lastIndexOf(delimiter)\n  return if (index == -1) missingDelimiterValue else replaceRange(index + 1,
length, replacement)\n}\n\n/**\n * Replace part of string before the last occurrence of given delimiter with the
[replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue]
which defaults to the original string.\n */\npublic fun String.replaceBeforeLast(delimiter: Char, replacement: String,
missingDelimiterValue: String = this): String {\n  val index = lastIndexOf(delimiter)\n  return if (index == -1)
missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n/**\n * Replace part of string before the last
occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceBeforeLast(delimiter:
String, replacement: String, missingDelimiterValue: String = this): String {\n  val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n// public fun
String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean): String // JVM- and JS-specific\n// public fun
String.replace(oldValue: String, newValue: String, ignoreCase:

```


Boolean): String // JVM- and JS-specific

`replace(regex: Regex, replacement: String): String` * Returns a new string obtained by replacing each substring of this char sequence that matches the given regular expression with the given [replacement]. The [replacement] can consist of any combination of literal text and \$-substitutions. To treat the replacement string literally escape it with the [kotlin.text.Regex.Companion.escapeReplacement] method.

`replace(regex: Regex, replacement: String): String` * Returns a new string obtained by replacing each substring of this char sequence that matches the given regular expression with the result of the given function [transform] that takes [MatchResult] and returns a string to be used as a replacement for that match.

`replace(regex: Regex, noinline transform: (MatchResult) -> CharSequence): String` * Replaces the first occurrence of the given regular expression [regex] in this char sequence with specified [replacement] expression. @param replacement A replacement expression that can include substitutions. See [Regex.replaceFirst] for details.

`replaceFirst(regex: Regex, replacement: String): String` * Returns a copy of this string having its first character replaced with the result of the specified [transform], or the original string if it's empty. @param transform function that takes the first character and returns the result of the transform applied to the character.

`replaceFirstChar(transform: (Char) -> Char): String` * Returns a copy of this string having its first character replaced with the result of the specified [transform], or the original string if it's empty. @param transform function that takes the first character and returns the result of the transform applied to the character.

`replaceFirstChar(transform: (Char) -> CharSequence): String` * Returns a copy of this string having its first character replaced with the result of the specified [transform], or the original string if it's empty. @param transform function that takes the first character and returns the result of the transform applied to the character.

`matches(regex: Regex): Boolean` * Implementation of [regionMatches] for CharSequences. Invoked when it's already known that arguments are not Strings, so that no additional type checks are performed.

`regionMatchesImpl(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int, ignoreCase: Boolean): Boolean` * Returns true if this char sequence matches the given regular expression.

`startsWith(char: Char, ignoreCase: Boolean = false): Boolean` * Returns true if this char sequence starts with the specified character.

`startsWith(prefix: CharSequence, ignoreCase: Boolean = false): Boolean` * Returns true if this char sequence starts with the specified prefix.

`endsWith(char: Char, ignoreCase: Boolean = false): Boolean` * Returns true if this char sequence ends with the specified character.

`endsWith(prefix: CharSequence, ignoreCase: Boolean = false): Boolean` * Returns true if a substring of this char sequence starting at the

```

specified offset [startIndex] starts with the specified prefix.\n */\npublic fun CharSequence.startsWith(prefix:
CharSequence, startIndex: Int, ignoreCase: Boolean = false): Boolean {\n
    if (!ignoreCase && this is String && prefix is String)\n        return this.startsWith(prefix, startIndex)\n    else\n
return regionMatchesImpl(startIndex, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if this char
sequence ends with the specified suffix.\n */\npublic fun CharSequence.endsWith(suffix: CharSequence,
ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase && this is String && suffix is String)\n        return
this.endsWith(suffix)\n    else\n        return regionMatchesImpl(length - suffix.length, suffix, 0, suffix.length,
ignoreCase)\n}\n\n// common prefix and suffix\n\n/**\n * Returns the longest string `prefix` such that this char
sequence and [other] char sequence both start with this prefix,\n * taking care not to split surrogate pairs.\n * If this
and [other] have no common prefix, returns the empty string.\n */\n * @param ignoreCase `true` to ignore character
case when matching a character. By default `false`.\n * @sample samples.text.Strings.commonPrefixWith\n
*/\npublic fun CharSequence.commonPrefixWith(other: CharSequence, ignoreCase: Boolean = false): String {\n
    val shortestLength = minOf(this.length, other.length)\n    var i = 0\n    while (i < shortestLength &&
this[i].equals(other[i], ignoreCase = ignoreCase)) {\n        i++\n    }\n    if (this.hasSurrogatePairAt(i - 1) ||
other.hasSurrogatePairAt(i - 1)) {\n        i--\n    }\n    return subSequence(0, i).toString()\n}\n\n/**\n * Returns the
longest string `suffix` such that this char sequence and [other] char sequence both end with this suffix,\n * taking
care not to split surrogate pairs.\n * If this and [other] have no common suffix, returns the empty string.\n */\n *
@param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @sample
samples.text.Strings.commonSuffixWith\n
*/\npublic fun CharSequence.commonSuffixWith(other: CharSequence,
ignoreCase: Boolean = false): String {\n    val thisLength = this.length\n
    val otherLength = other.length\n    val shortestLength = minOf(thisLength, otherLength)\n    var i = 0\n    while
(i < shortestLength && this[thisLength - i - 1].equals(other[otherLength - i - 1], ignoreCase = ignoreCase)) {\n
        i++\n    }\n    if (this.hasSurrogatePairAt(thisLength - i - 1) || other.hasSurrogatePairAt(otherLength - i - 1)) {\n
        i--\n    }\n    return subSequence(thisLength - i, thisLength).toString()\n}\n\n// indexOfAny()\n\n/**\n * Finds the
index of the first occurrence of any of the specified [chars] in this char sequence,\n * starting from the specified
[startIndex] and optionally ignoring the case.\n */\n * @param ignoreCase `true` to ignore character case when
matching a character. By default `false`.\n * @return An index of the first occurrence of matched character from
[chars] or -1 if none of [chars] are found.\n */\n */\npublic fun CharSequence.indexOfAny(chars: CharArray,
startIndex: Int = 0, ignoreCase: Boolean = false): Int {\n    if
(!ignoreCase && chars.size == 1 && this is String) {\n        val char = chars.single()\n        return
nativeIndexOf(char, startIndex)\n    }\n    for (index in startIndex.coerceAtLeast(0)..lastIndex) {\n        val
charAtIndex = get(index)\n        if (chars.any { it.equals(charAtIndex, ignoreCase) })\n            return index\n    }\n
return -1\n}\n\n/**\n * Finds the index of the last occurrence of any of the specified [chars] in this char sequence,\n
* starting from the specified [startIndex] and optionally ignoring the case.\n */\n * @param startIndex The index of
character to start searching at. The search proceeds backward toward the beginning of the string.\n * @param
ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @return An index of
the last occurrence of matched character from [chars] or -1 if none of [chars] are found.\n */\n */\npublic fun
CharSequence.lastIndexOfAny(chars: CharArray, startIndex: Int = lastIndex, ignoreCase:
Boolean = false): Int {\n    if (!ignoreCase && chars.size == 1 && this is String) {\n        val char = chars.single()\n
        return nativeLastIndexOf(char, startIndex)\n    }\n    for (index in startIndex.coerceAtMost(lastIndex)
downTo 0) {\n        val charAtIndex = get(index)\n        if (chars.any { it.equals(charAtIndex, ignoreCase) })\n
            return index\n    }\n    return -1\n}\n\nprivate fun CharSequence.indexOf(other: CharSequence, startIndex: Int,
endIndex: Int, ignoreCase: Boolean, last: Boolean = false): Int {\n    val indices = if (!!last)\n        startIndex.coerceAtLeast(0)..endIndex.coerceAtMost(length)\n    else\n        startIndex.coerceAtMost(lastIndex)
downTo endIndex.coerceAtLeast(0)\n    if (this is String && other is String) { // smart cast\n        for (index in
indices) {\n            if (other.regionMatches(0, this, index, other.length, ignoreCase))\n                return index\n
        }\n    } else {\n        for (index in indices) {\n

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        if (other.regionMatchesImpl(0, this, index, other.length, ignoreCase))\n            return index\n        }\n    }\n\n    return -1\n}\n\nprivate fun CharSequence.findAnyOf(strings: Collection<String>, startIndex: Int, ignoreCase: Boolean, last: Boolean): Pair<Int, String>? {\n    if (!ignoreCase && strings.size == 1) {\n        val string = strings.single()\n        val index = if (!last) indexOf(string, startIndex) else lastIndexOf(string, startIndex)\n        return if (index < 0) null else index to string\n    }\n\n    val indices = if (!last) startIndex.coerceAtLeast(0).length else startIndex.coerceAtMost(lastIndex) downTo 0\n    if (this is String) {\n        for (index in indices) {\n            val matchingString = strings.firstOrNull { it.regionMatches(0, this, index, it.length, ignoreCase) }\n            if (matchingString != null)\n                return index to matchingString\n        }\n    } else {\n        for (index in indices) {\n            val matchingString = strings.firstOrNull { it.regionMatchesImpl(0, this, index, it.length, ignoreCase) }\n            if (matchingString != null)\n                return index to matchingString\n        }\n    }\n\n    return null\n}\n\n/**\n * Finds the first occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return A pair of an index of the first occurrence of matched string from [strings] and the string matched\n * or `null` if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the beginning to the end of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\n\npublic fun CharSequence.findAnyOf(strings: Collection<String>, startIndex: Int = 0, ignoreCase: Boolean = false): Pair<Int, String>? =\n    findAnyOf(strings, startIndex, ignoreCase, last = false)\n\n/**\n * Finds the last occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param startIndex The index of character to start searching at. The search proceeds backward toward the beginning of the string.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return A pair of an index of the last occurrence of matched string from [strings] and the string matched or `null` if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the end toward the beginning of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\n\npublic fun CharSequence.findLastAnyOf(strings: Collection<String>, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Pair<Int, String>? =\n    findAnyOf(strings, startIndex, ignoreCase, last = true)\n\n/**\n * Finds the index of the first occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return An index of the first occurrence of matched string from [strings] or -1 if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the beginning to the end of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\n\npublic fun CharSequence.indexOfAny(strings: Collection<String>, startIndex: Int = 0, ignoreCase: Boolean = false): Int =\n    findAnyOf(strings, startIndex, ignoreCase, last = false)?.first ?: -1\n\n/**\n * Finds the index of the last occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param startIndex The index of character to start searching at. The search proceeds backward toward the beginning of the string.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return An index of the last occurrence of matched string from [strings] or -1 if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the end toward the beginning of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\n\npublic fun CharSequence.lastIndexOfAny(strings: Collection<String>, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int =\n    findAnyOf(strings, startIndex, ignoreCase, last = true)?.first ?: -1\n\n/**\n * Returns the index within this string of the first occurrence of the specified character, starting from the specified [startIndex].\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @return An index of the first occurrence

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of [char] or -1 if none is found.\n */\npublic fun CharSequence.indexOf(char: Char, startIndex: Int = 0, ignoreCase:
Boolean = false): Int {\n    return if (ignoreCase || this !is String)\n        indexOfAny(charArrayOf(char), startIndex,
ignoreCase)\n    else\n        nativeIndexOf(char, startIndex)\n}\n\n/**\n * Returns the index within this char
sequence of the first occurrence of the specified [string],\n * starting from the specified [startIndex].\n */\n * @param
ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return An index of the
first occurrence of [string] or -1 if none is found.\n\n
* @sample samples.text.Strings.indexOf\n */\npublic fun CharSequence.indexOf(string: String, startIndex: Int = 0,
ignoreCase: Boolean = false): Int {\n    return if (ignoreCase || this !is String)\n        indexOf(string, startIndex,
length, ignoreCase)\n    else\n        nativeIndexOf(string, startIndex)\n}\n\n/**\n * Returns the index within this char
sequence of the last occurrence of the specified character,\n * starting from the specified [startIndex].\n */\n * @param
startIndex The index of character to start searching at. The search proceeds backward toward the beginning
of the string.\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n\n
* @return An index of the last occurrence of [char] or -1 if none is found.\n */\npublic fun
CharSequence.lastIndexOf(char: Char, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int {\n    return if
(ignoreCase || this !is String)\n        lastIndexOfAny(charArrayOf(char), startIndex,
ignoreCase)\n    else\n        nativeLastIndexOf(char, startIndex)\n}\n\n/**\n * Returns the index within this char
sequence of the last occurrence of the specified [string],\n * starting from the specified [startIndex].\n */\n * @param
startIndex The index of character to start searching at. The search proceeds backward toward the beginning of the
string.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n\n
* @return An index of the last occurrence of [string] or -1 if none is found.\n */\npublic fun
CharSequence.lastIndexOf(string: String, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int {\n    return if
(ignoreCase || this !is String)\n        indexOf(string, startIndex, 0, ignoreCase, last = true)\n    else\n        nativeLastIndexOf(string, startIndex)\n}\n\n/**\n * Returns `true` if this char sequence contains the specified [other]
sequence of characters as a substring.\n */\n * @param ignoreCase `true` to ignore character
case when comparing strings. By default `false`.\n\n
*/\n@Suppress("INAPPLICABLE_OPERATOR_MODIFIER")\npublic operator fun
CharSequence.contains(other: CharSequence, ignoreCase: Boolean = false): Boolean =\n    if (other is String)\n        indexOf(other, ignoreCase = ignoreCase) >= 0\n    else\n        indexOf(other, 0, length, ignoreCase) >=
0\n\n\n/**\n * Returns `true` if this char sequence contains the specified character [char].\n */\n * @param
ignoreCase `true` to ignore character case when comparing characters. By default `false`.\n\n
*/\n@Suppress("INAPPLICABLE_OPERATOR_MODIFIER")\npublic operator fun CharSequence.contains(char:
Char, ignoreCase: Boolean = false): Boolean =\n    indexOf(char, ignoreCase = ignoreCase) >= 0\n\n\n/**\n * Returns
`true` if this char sequence contains at least one match of the specified regular expression [regex].\n\n
*/\n@kotlin.internal.InlineOnly\npublic inline operator fun CharSequence.contains(regex: Regex): Boolean =
regex.containsMatchIn(this)\n\n\n//
rangesDelimitedBy\n\nprivate class DelimitedRangesSequence(\n    private val input: CharSequence,\n    private
val startIndex: Int,\n    private val limit: Int,\n    private val getNextMatch: CharSequence.(currentIndex: Int) ->
Pair<Int, Int>?) : Sequence<IntRange> {\n    override fun iterator(): Iterator<IntRange> = object :
Iterator<IntRange> {\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n        var
currentStartIndex: Int = startIndex.coerceIn(0, input.length)\n        var nextSearchIndex: Int = currentStartIndex\n
        var nextItem: IntRange? = null\n        var counter: Int = 0\n        private fun calcNext() {\n            if
(nextSearchIndex < 0) {\n                nextState = 0\n                nextItem = null\n            } else {\n                if (limit >
0 && ++counter >= limit || nextSearchIndex > input.length) {\n                    nextItem =
currentStartIndex..input.lastIndex\n                    nextSearchIndex
= -1\n                } else {\n                    val match = input.getNextMatch(nextSearchIndex)\n                    if (match ==
null) {\n                        nextItem = currentStartIndex..input.lastIndex\n                        nextSearchIndex = -1\n
                    } else {\n                        val (index, length) = match\n                        nextItem = currentStartIndex until index\n
                        currentStartIndex = index + length\n                        nextSearchIndex = currentStartIndex + if (length ==

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0) 1 else 0\n        }\n        }\n        nextState = 1\n        }\n        }\n        override fun next():
IntRange {\n        if (nextState == -1)\n        calcNext()\n        if (nextState == 0)\n        throw
NoSuchElementException()\n        val result = nextItem as IntRange\n        // Clean next to avoid keeping
reference on yielded instance\n        nextItem = null\n
        nextState = -1\n        return result\n        }\n        override fun hasNext(): Boolean {\n        if (nextState
== -1)\n        calcNext()\n        return nextState == 1\n        }\n        }\n}\n\n/**\n * Returns a sequence of index
ranges of substrings in this char sequence around occurrences of the specified [delimiters].\n *\n * @param
delimiters One or more characters to be used as delimiters.\n *\n * @param startIndex The index to start searching
delimiters from.\n *\n * No range having its start value less than [startIndex] is returned.\n *\n * [startIndex] is coerced to
be non-negative and not greater than length of this string.\n *\n * @param ignoreCase `true` to ignore character case
when matching a delimiter. By default `false`.\n *\n * @param limit The maximum number of substrings to return. Zero
by default means no limit is set.\n *\n */\nprivate fun CharSequence.rangesDelimitedBy(delimiters: CharArray,
startIndex: Int = 0, ignoreCase: Boolean = false, limit: Int = 0):
Sequence<IntRange> {\n    requireNonNegativeLimit(limit)\n    return DelimitedRangesSequence(this,
startIndex, limit, { currentIndex ->\n        indexOfAny(delimiters, currentIndex, ignoreCase = ignoreCase).let { if (it
< 0) null else it to 1 }\n    })\n}\n\n/**\n * Returns a sequence of index ranges of substrings in this char sequence
around occurrences of the specified [delimiters].\n *\n * @param delimiters One or more strings to be used as
delimiters.\n *\n * @param startIndex The index to start searching delimiters from.\n *\n * No range having its start value
less than [startIndex] is returned.\n *\n * [startIndex] is coerced to be non-negative and not greater than length of this
string.\n *\n * @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n *\n *
@param limit The maximum number of substrings to return. Zero by default means no limit is set.\n *\n * To avoid
ambiguous results when strings in [delimiters] have characters in common, this method
proceeds from\n *\n the beginning to the end of this string, and finds at each position the first element in
[delimiters]\n *\n that matches this string at that position.\n *\n */\nprivate fun
CharSequence.rangesDelimitedBy(delimiters: Array<out String>, startIndex: Int = 0, ignoreCase: Boolean = false,
limit: Int = 0): Sequence<IntRange> {\n    requireNonNegativeLimit(limit)\n    val delimitersList =
delimiters.asList()\n    return DelimitedRangesSequence(this, startIndex, limit, { currentIndex ->\n        findAnyOf(delimitersList, currentIndex, ignoreCase = ignoreCase, last = false)?.let { it.first to it.second.length }\n    })\n}\n\ninternal fun requireNonNegativeLimit(limit: Int) =\n    require(limit >= 0) { "Limit must be non-
negative, but was $limit" }\n}\n\n/**\n * Splits this char sequence to a sequence of strings around
occurrences of the specified [delimiters].\n *\n * @param delimiters One or more strings to be used as delimiters.\n *\n *
@param ignoreCase `true` to ignore character
case when matching a delimiter. By default `false`.\n *\n * @param limit The maximum number of substrings to return.
Zero by default means no limit is set.\n *\n * To avoid ambiguous results when strings in [delimiters] have
characters in common, this method proceeds from\n *\n the beginning to the end of this string, and finds at each
position the first element in [delimiters]\n *\n that matches this string at that position.\n *\n */\npublic fun
CharSequence.splitToSequence(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0):
Sequence<String> =\n    rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map { substring(it)
}\n\n/**\n * Splits this char sequence to a list of strings around occurrences of the specified [delimiters].\n *\n *
@param delimiters One or more strings to be used as delimiters.\n *\n * @param ignoreCase `true` to ignore character
case when matching a delimiter. By default `false`.\n *\n * @param limit The maximum number of substrings to return.
Zero by default means no limit is set.\n *\n * To avoid ambiguous results when strings in [delimiters] have
characters in common, this method proceeds from\n *\n the beginning to the end of this string, and matches at each
position the first element in [delimiters]\n *\n that is equal to a delimiter in this instance at that position.\n *\n */\npublic fun
CharSequence.split(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0): List<String> {\n    if
(delimiters.size == 1) {\n        val delimiter = delimiters[0]\n        if (!delimiter.isEmpty()) {\n            return
split(delimiter, ignoreCase, limit)\n        }\n    }\n    return rangesDelimitedBy(delimiters, ignoreCase =
ignoreCase, limit = limit).asIterable().map { substring(it) }\n}\n\n/**\n * Splits this char sequence to a sequence of

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strings around occurrences of the specified [delimiters].\n *\n * @param delimiters One or more characters to be
used as delimiters.\n * @param ignoreCase `true` to ignore character
case when matching a delimiter. By default `false`.\n * @param limit The maximum number of substrings to
return.\n */\npublic fun CharSequence.splitToSequence(vararg delimiters: Char, ignoreCase: Boolean = false, limit:
Int = 0): Sequence<String> =\n    rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map {
substring(it) }\n/>\n/**\n * Splits this char sequence to a list of strings around occurrences of the specified
[delimiters].\n *\n * @param delimiters One or more characters to be used as delimiters.\n * @param ignoreCase
`true` to ignore character case when matching a delimiter. By default `false`.\n * @param limit The maximum
number of substrings to return.\n */\npublic fun CharSequence.split(vararg delimiters: Char, ignoreCase: Boolean =
false, limit: Int = 0): List<String> {\n    if (delimiters.size == 1) {\n        return split(delimiters[0].toString(),
ignoreCase, limit)\n    }\n    return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit =
limit).asIterable().map
{ substring(it) }\n}\n/>\n/**\n * Splits this char sequence to a list of strings around occurrences of the specified
[delimiter].\n * This is specialized version of split which receives single non-empty delimiter and offers better
performance\n *\n * @param delimiter String used as delimiter\n * @param ignoreCase `true` to ignore character
case when matching a delimiter. By default `false`.\n * @param limit The maximum number of substrings to
return.\n */\nprivate fun CharSequence.split(delimiter: String, ignoreCase: Boolean, limit: Int): List<String> {\n
requireNonNegativeLimit(limit)\n    var currentOffset = 0\n    var nextIndex = indexOf(delimiter, currentOffset,
ignoreCase)\n    if (nextIndex == -1 || limit == 1) {\n        return listOf(this.toString())\n    }\n    val isLimited =
limit > 0\n    val result = ArrayList<String>(if (isLimited) limit.coerceAtMost(10) else 10)\n    do {\n
result.add(substring(currentOffset, nextIndex))\n        currentOffset
= nextIndex + delimiter.length\n        // Do not search for next occurrence if we're reaching limit\n        if (isLimited
&& result.size == limit - 1) break\n        nextIndex = indexOf(delimiter, currentOffset, ignoreCase)\n    } while
(nextIndex != -1)\n    result.add(substring(currentOffset, length))\n    return result\n}\n/>\n/**\n * Splits this char
sequence to a list of strings around matches of the given regular expression.\n *\n * @param limit Non-negative
value specifying the maximum number of substrings to return.\n * Zero by default means no limit is set.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.split(regex: Regex, limit: Int = 0): List<String> =
regex.split(this, limit)\n/>\n/**\n * Splits this char sequence to a sequence of strings around matches of the given
regular expression.\n *\n * @param limit Non-negative value specifying the maximum number of substrings to
return.\n * Zero by default means no limit is set.\n * @sample samples.text.Strings.splitToSequence\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.splitToSequence(regex: Regex, limit: Int = 0): Sequence<String> =
regex.splitToSequence(this, limit)\n/>\n/**\n * Splits this char sequence to a sequence of lines delimited by any of the
following character sequences: CRLF, LF or CR.\n *\n * The lines returned do not include terminating line
separators.\n */\npublic fun CharSequence.lineSequence(): Sequence<String> = splitToSequence("\\r\\n", "\\n",
"\\r")\n/>\n/**\n * Splits this char sequence to a list of lines delimited by any of the following character sequences:
CRLF, LF or CR.\n *\n * The lines returned do not include terminating line separators.\n */\npublic fun
CharSequence.lines(): List<String> = lineSequence().toList()\n/>\n/**\n * Returns `true` if the contents of this char
sequence are equal to the contents of the specified [other],\n * i.e. both char sequences contain
the same number of the same characters in the same order.\n *\n * @sample samples.text.Strings.contentEquals\n
*/\n@SinceKotlin("1.5")\npublic expect infix fun CharSequence?.contentEquals(other: CharSequence?):
Boolean\n/>\n/**\n * Returns `true` if the contents of this char sequence are equal to the contents of the specified
[other], optionally ignoring case difference.\n *\n * @param ignoreCase `true` to ignore character case when
comparing contents.\n *\n * @sample samples.text.Strings.contentEquals\n */\n@SinceKotlin("1.5")\npublic
expect fun CharSequence?.contentEquals(other: CharSequence?, ignoreCase: Boolean): Boolean\n/>\ninternal fun
CharSequence?.contentEqualsIgnoreCaseImpl(other: CharSequence?): Boolean {\n    if (this is String && other is
String) {\n        return this.equals(other, ignoreCase = true)\n    }\n    if (this === other) return true\n    if (this ==
null || other == null || this.length != other.length) return false\n    for (i in 0 until length) {\n

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    if (!this[i].equals(other[i], ignoreCase = true)) {\n        return false\n    }\n    return true\n}\n\ninternal
fun CharSequence?.contentEqualsImpl(other: CharSequence?): Boolean {\n    if (this is String && other is String)
{\n        return this == other\n    }\n    if (this === other) return true\n    if (this == null || other == null || this.length
!= other.length) return false\n    for (i in 0 until length) {\n        if (this[i] != other[i]) {\n            return false\n
}\n    }\n    return true\n}\n\n**\n * Returns `true` if the content of this string is equal to the word `true`, `false`
if it is equal to `false`,\n * and throws an exception otherwise.\n * There is also a lenient version of the
function available on nullable String, [String?.toBoolean].\n * Note that this function is case-sensitive.\n *\n *
@sample samples.text.Strings.toBooleanStrict\n *\n@SinceKotlin("1.5")\n\npublic fun String.toBooleanStrict():
Boolean = when (this)
{\n    `true` -> true\n    `false` -> false\n    else -> throw IllegalArgumentException(`The string doesn't represent
a boolean value: $this`)\n}\n\n**\n * Returns `true` if the content of this string is equal to the word `true`, `false`
if it is equal to `false`,\n * and `null` otherwise.\n * There is also a lenient version of the function available on
nullable String, [String?.toBoolean].\n * Note that this function is case-sensitive.\n *\n * @sample
samples.text.Strings.toBooleanStrictOrNull\n *\n@SinceKotlin("1.5")\n\npublic fun
String.toBooleanStrictOrNull(): Boolean? = when (this) {\n    `true` -> true\n    `false` -> false\n    else ->
null\n},"*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n//
Auto-generated file. DO NOT EDIT!\n\npackage kotlin\n\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\n\npublic
value class UByteArray\n@PublishedApi\n\ninternal constructor(@PublishedApi internal val storage: ByteArray) :
Collection<UByte> {\n    /** Creates a new array of the specified [size], with all elements initialized to zero. *\n
public constructor(size: Int) : this(ByteArray(size))\n    /**\n     * Returns the array element at the given [index].
This method can be called using the index operator.\n     *\n     * If the [index] is out of bounds of this array, throws
an [IndexOutOfBoundsException] except in Kotlin/JS\n     * where the behavior is unspecified.\n     *\n     public
operator fun get(index: Int): UByte = storage[index].toUByte()\n    /**\n     * Sets the element at the given [index]
to the given [value]. This method can be called using the index operator.\n     *\n     * If the [index] is out of bounds
of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n     * where the behavior is
unspecified.\n
*\n     public operator fun set(index: Int, value: UByte) {\n        storage[index] = value.toByte()\n    }\n\n    /**
Returns the number of elements in the array. *\n     public override val size: Int get() = storage.size\n    /** Creates
an iterator over the elements of the array. *\n     public override operator fun iterator():
kotlin.collections.Iterator<UByte> = Iterator(storage)\n\n    @Suppress("DEPRECATION_ERROR")\n    private
class Iterator(private val array: ByteArray) : UByteIterator() {\n        private var index = 0\n        override fun
hasNext() = index < array.size\n        override fun nextUByte() = if (index < array.size) array[index++].toUByte()
else throw NoSuchElementException(index.toString())\n    }\n\n    override fun contains(element: UByte): Boolean
{\n        // TODO: Eliminate this check after KT-30016 gets fixed.\n        // Currently JS BE does not generate
special bridge method for this method.\n        @Suppress("USELESS_CAST")\n        if ((element
as Any?) !is UByte) return false\n        return storage.contains(element.toByte())\n    }\n\n    override fun
containsAll(elements: Collection<UByte>): Boolean {\n        return (elements as Collection<*>).all { it is UByte
&& storage.contains(it.toByte()) }\n    }\n\n    override fun isEmpty(): Boolean = this.storage.size == 0\n}\n\n**\n
* Creates a new array of the specified [size], where each element is calculated by calling the specified\n * [init]
function.\n * The function [init] is called for each array element sequentially starting from the first one.\n * It
should return the value for an array element given its index.\n
*\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n\npublic inline fun
UByteArray(size: Int, init: (Int) -> UByte): UByteArray {\n    return UByteArray(ByteArray(size) { index ->
init(index).toByte()
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n\npublic inline fun
ubyteArrayOf(vararg

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elements: UByte): UByteArray = elements\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin\n\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic value class
UIntArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: IntArray) : Collection<UInt>
{\n\n /** Creates a new array of the specified [size], with all elements initialized to zero. *\n public
constructor(size: Int) : this(IntArray(size))\n\n /**\n * Returns the array element at the given [index]. This
method can be called using the index operator.\n * \n * If the [index] is out of bounds of this array, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n * \n public
operator fun get(index: Int): UInt = storage[index].toInt()\n\n /**\n * Sets the element at the given [index] to
the given [value]. This method can be called using the index operator.\n * \n * If the [index] is out of
bounds of this array, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is
unspecified.\n * \n public operator fun set(index: Int, value: UInt) {\n storage[index] = value.toInt()\n
}\n\n /** Returns
the number of elements in the array. *\n public override val size: Int get() = storage.size\n\n /** Creates an
iterator over the elements of the array. *\n public override operator fun iterator(): kotlin.collections.Iterator<UInt>
= Iterator(storage)\n\n @Suppress("DEPRECATION_ERROR")\n private class Iterator(private val array:
IntArray) : UIntIterator() {\n private var index = 0\n override fun hasNext() = index < array.size\n
override fun nextUInt() = if (index < array.size)
array[index++].toInt() else throw NoSuchElementException(index.toString())\n }\n\n override fun
contains(element: UInt): Boolean {\n // TODO: Eliminate this check after KT-30016 gets fixed.\n //
Currently JS BE does not generate special bridge method for this method.\n
@Suppress("USELESS_CAST")\n if ((element as Any?) !is UInt) return false\n\n return
storage.contains(element.toInt())\n }\n\n override fun containsAll(elements: Collection<UInt>): Boolean {\n
return (elements as Collection<*>).all { it is UInt && storage.contains(it.toInt()) }\n }\n\n override fun
isEmpty(): Boolean = this.storage.size == 0\n}\n\n/**\n * Creates a new array of the specified [size], where each
element is calculated by calling the specified\n * [init] function.\n * \n * The function [init] is called for each array
element sequentially starting from the first one.\n * It should return the value for an array element given its index.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray(size: Int, init: (Int) -> UInt): UIntArray {\n return UIntArray(IntArray(size) { index ->
init(index).toInt()
})\n}\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
uintArrayOf(vararg elements: UInt): UIntArray = elements\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage
kotlin\n\nimport kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic
value class ULongArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: LongArray) :
Collection<ULong> {\n\n /** Creates a new array of the specified [size], with all elements initialized to zero. *\n
public constructor(size:
Int) : this(LongArray(size))\n\n /**\n * Returns the array element at the given [index]. This method can be
called using the index operator.\n * \n * If the [index] is out of bounds of this array, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n * \n public
operator fun get(index: Int): ULong = storage[index].toULong()\n\n /**\n * Sets the element at the given
[index] to the given [value]. This method can be called using the index operator.\n * \n * If the [index] is out of
bounds of this array, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is
unspecified.\n * \n public operator fun set(index: Int, value: ULong) {\n storage[index] = value.toLong()\n
}\n\n /** Returns
the number of elements in the array. *\n public override val size: Int get() = storage.size\n\n /** Creates an
iterator over the elements of the array. *\n

```



```

    public override operator fun iterator(): kotlin.collections.Iterator<ULong> = Iterator(storage)\n\n
@Suppress("DEPRECATION_ERROR")\n    private class Iterator(private val array: LongArray) : ULongIterator()
{\n    private var index = 0\n    override fun hasNext() = index < array.size\n    override fun nextULong() = if
(index < array.size) array[index++].toULong() else throw NoSuchElementException(index.toString())\n    }\n\n
override fun contains(element: ULong): Boolean {\n    // TODO: Eliminate this check after KT-30016 gets
fixed.\n    // Currently JS BE does not generate special bridge method for this method.\n
@Suppress("USELESS_CAST")\n    if ((element as Any?) !is ULong) return false\n\n    return
storage.contains(element.toLong())\n    }\n\n    override fun containsAll(elements: Collection<ULong>): Boolean
{\n    return (elements as Collection<*>).all { it is ULong && storage.contains(it.toLong()) }\n    }\n\n    override
fun
isEmpty(): Boolean = this.storage.size == 0\n}\n\n/**\n * Creates a new array of the specified [size], where each
element is calculated by calling the specified\n * [init] function.\n * The function [init] is called for each array
element sequentially starting from the first one.\n * It should return the value for an array element given its index.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray(size: Int, init: (Int) -> ULong): ULongArray {\n    return ULongArray(LongArray(size) { index ->
init(index).toLong()
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ulongArrayOf(vararg elements: ULong): ULongArray = elements\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file.
DO NOT EDIT!\n\npackage kotlin\n\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic value class
UShortArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: ShortArray) :
Collection<UShort> {\n\n    /** Creates a new array of the specified [size], with all elements initialized to zero. */\n
public constructor(size: Int) : this(ShortArray(size))\n\n    /**\n     * Returns the array element at the given [index].
This method can be called using the index operator.\n     * If the [index] is out of bounds of this array, throws
an [IndexOutOfBoundsException] except in Kotlin/JS\n     * where the behavior is unspecified.\n     */\n    public
operator fun get(index: Int): UShort = storage[index].toUShort()\n\n    /**\n     * Sets the element at the given
[index] to the given [value]. This method can be called using the index operator.\n     * If the [index] is out of
bounds of this array, throws an [IndexOutOfBoundsException]
except in Kotlin/JS\n     * where the behavior is unspecified.\n     */\n    public operator fun set(index: Int, value:
UShort) {\n        storage[index] = value.toShort()\n    }\n\n    /** Returns the number of elements in the array. */\n
public override val size: Int get() = storage.size\n\n    /** Creates an iterator over the elements of the array. */\n
public override operator fun iterator(): kotlin.collections.Iterator<UShort> = Iterator(storage)\n\n
@Suppress("DEPRECATION_ERROR")\n    private class Iterator(private val array: ShortArray) :
UShortIterator() {\n    private var index = 0\n    override fun hasNext() = index < array.size\n    override fun
nextUShort() = if (index < array.size) array[index++].toUShort() else throw
NoSuchElementException(index.toString())\n    }\n\n    override fun contains(element: UShort): Boolean {\n    //
TODO: Eliminate this check after KT-30016 gets fixed.\n    // Currently JS BE does not generate special
bridge method for this method.\n    @Suppress("USELESS_CAST")\n    if ((element as Any?) !is UShort)
return false\n\n    return storage.contains(element.toShort())\n    }\n\n    override fun containsAll(elements:
Collection<UShort>): Boolean {\n    return (elements as Collection<*>).all { it is UShort &&
storage.contains(it.toShort()) }\n    }\n\n    override fun isEmpty(): Boolean = this.storage.size == 0\n}\n\n/**\n *
Creates a new array of the specified [size], where each element is calculated by calling the specified\n * [init]
function.\n * The function [init] is called for each array element sequentially starting from the first one.\n * It
should return the value for an array element given its index.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray(size: Int, init: (Int) -> UShort): UShortArray {\n    return UShortArray(ShortArray(size) { index ->

```

```

init(index).toShort()
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ushortArrayOf(vararg elements: UShort): UShortArray = elements\n", /*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UArraysKt")\n@file:kotlin.jvm.JvmPacka
geName("kotlin.collections.unsigned")\n\npackage kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element* from the array.\n * \n * If the
size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UIntArray.component1(): UInt {\n    return get(0)\n}\n\n/**\n * Returns 1st *element* from the
array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n
* where the behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component1(): ULong {\n    return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n *
If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component1(): UByte {\n    return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If
the size of this array is less than 1, throws an [IndexOutOfBoundsException]
except in Kotlin/JS\n * where the behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component1(): UShort {\n    return get(0)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n *
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.component2(): UInt {\n    return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If
the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component2(): ULong {\n    return get(1)\n}\n\n/**\n * Returns 2nd *element*
from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component2(): UByte {\n    return get(1)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n *
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component2(): UShort {\n    return get(1)\n}\n\n/**\n * Returns 3rd *element* from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
operator fun UIntArray.component3(): UInt {\n    return get(2)\n}\n\n/**\n * Returns 3rd *element* from the
array.\n * \n * If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n
* where the behavior is unspecified.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun

```

UByteArray.component3(): ULong {
 return get(2)}
 Returns 3rd *element* from the array.
 If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 UByteArray.component3(): UByte {
 return get(2)}
 Returns 3rd *element* from the array.
 If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public
 inline operator fun
 UShortArray.component3(): UShort {
 return get(2)}
 Returns 4th *element* from the array.
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 UIntArray.component4(): UInt {
 return get(3)}
 Returns 4th *element* from the array.
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public
 inline operator fun
 ULongArray.component4(): ULong {
 return get(3)}
 Returns 4th *element* from the array.
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 UByteArray.component4(): UByte {
 return get(3)}
 Returns 4th *element* from the array.
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 UShortArray.component4(): UShort {
 return get(3)}
 Returns 5th *element* from the array.
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 UIntArray.component5(): UInt {
 return get(4)}
 Returns 5th *element* from the array.
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 ULongArray.component5(): ULong {
 return get(4)}
 Returns 5th *element* from the array.
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public inline operator fun
 UByteArray.component5(): UByte {
 return get(4)}
 Returns 5th *element* from the array.
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 @kotlin.internal.InlineOnly
 public
 inline operator fun
 UShortArray.component5(): UShort {
 return get(4)}
 Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 @sample samples.collections.Collections.Elements.elementAt

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 public expect fun
 UIntArray.elementAt(index: Int):
 UInt
 Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 @sample samples.collections.Collections.Elements.elementAt

@SinceKotlin("1.3")
 @ExperimentalUnsignedTypes
 public expect fun
 ULongArray.elementAt(index: Int):
 ULong
 Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 @sample samples.collections.Collections.Elements.elementAt

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect
fun UByteArray.elementAt(index: Int): UByte\n\n/**\n * Returns an element at the given [index] or throws an
[IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UShortArray.elementAt(index: Int):
UShort\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue] function if the
[index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UInt): UInt {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> ULong): ULong {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UByte): UByte {\n    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result
of calling the [defaultValue] function if the [index] is out of bounds of this
array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UShort): UShort {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or
`null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.elementAtOrNull(index: Int): UInt? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an element
at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.elementAtOrNull(index: Int): ULong? {\n    return this.getOrNull(index)\n}\n\n/**\n *
Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrNull(index: Int): UByte? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.elementAtOrNull(index: Int): UShort? {\n    return this.getOrNull(index)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.find(predicate: (UInt) -> Boolean): UInt? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.find(predicate: (ULong) -> Boolean): ULong? {\n    return firstOrNull(predicate)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.find(predicate: (UByte) -> Boolean): UByte? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns
the first element matching
the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.find(predicate: (UShort) -> Boolean): UShort? {\n    return firstOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.findLast(predicate: (UInt) -> Boolean): UInt? {\n    return lastOrNull(predicate)\n}\n\n/**\n * Returns the
last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.findLast(predicate:
(ULong) -> Boolean): ULong? {\n    return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching
the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.findLast(predicate: (UByte) -> Boolean): UByte? {\n    return lastOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.findLast(predicate: (UShort) -> Boolean): UShort? {\n    return lastOrNull(predicate)\n}\n\n/**\n *
Returns first element.\n * @throws [NoSuchElementException] if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.first(): UInt {\n    return storage.first().toUInt()\n}\n\n/**\n * Returns first element.\n *
@throws [NoSuchElementException] if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.first(): ULong {\n    return storage.first().toULong()\n}\n\n/**\n * Returns first element.\n * @throws
[NoSuchElementException] if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.first(): UByte {\n    return storage.first().toUByte()\n}\n\n/**\n * Returns first element.\n * @throws
[NoSuchElementException] if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.first(): UShort {\n    return storage.first().toUShort()\n}\n\n/**\n * Returns the first element matching
the given [predicate].\n * @throws [NoSuchElementException] if no
such element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.first(predicate: (UInt) -> Boolean): UInt {\n    for (element in this) if (predicate(element)) return
element\n    throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n *
Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

ULongArray.first(predicate: (ULong) -> Boolean): ULong {\n  for (element in this) if (predicate(element)) return
element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.first(predicate: (UByte) -> Boolean): UByte {\n  for (element in this) if
(predicate(element)) return element\n  throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.first(predicate: (UShort) -> Boolean): UShort {\n  for (element in this) if (predicate(element)) return
element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.firstOrNull(): UInt? {\n  return
if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.firstOrNull(): ULong? {\n  return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first
element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.firstOrNull(): UByte? {\n  return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first
element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.firstOrNull(): UShort? {\n  return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first
element matching the given [predicate], or `null` if element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.firstOrNull(predicate: (UInt) -> Boolean): UInt? {\n  for (element in this) if (predicate(element)) return
element\n  return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.firstOrNull(predicate: (ULong) -> Boolean): ULong? {\n  for (element in this) if (predicate(element))
return element\n  return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if
element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.firstOrNull(predicate: (UByte) -> Boolean): UByte? {\n  for (element in this) if (predicate(element))
return element\n  return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if
element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.firstOrNull(predicate: (UShort) -> Boolean): UShort? {\n  for (element in this) if (predicate(element))
return
element\n  return null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.getOrNull(index: Int, defaultValue: (Int) -> UInt): UInt? {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.getOrNull(index: Int, defaultValue: (Int) -> ULong): ULong? {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this

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array.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.getOrNull(index: Int, defaultValue: (Int) -> UByte): UByte {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.getOrNull(index: Int, defaultValue: (Int) -> UShort): UShort {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.getOrNull(index: Int): UInt? {\n
return if (index
>= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if
the [index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.getOrNull(index: Int):
ULong? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at
the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.getOrNull(index: Int): UByte?
{\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the
given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.getOrNull(index: Int): UShort? {\n    return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOf(element: UInt): Int {\n    return storage.indexOf(element.toInt())\n}\n\n/**\n * Returns first
index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOf(element: ULong): Int {\n    return storage.indexOf(element.toLong())\n}\n\n/**\n * Returns
first index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOf(element: UByte): Int {\n    return storage.indexOf(element.toByte())\n}\n\n/**\n *
Returns first index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOf(element: UShort): Int {\n    return storage.indexOf(element.toShort())\n}\n\n/**\n * Returns
index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOfFirst(predicate: (UInt) -> Boolean): Int {\n    return storage.indexOfFirst { predicate(it.toUInt())
}\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain
such element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.indexOfFirst(predicate: (ULong) -> Boolean): Int {\n    return storage.indexOfFirst {
predicate(it.toULong()) }\n}\n\n/**\n *
Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfFirst(predicate: (UByte) -> Boolean): Int {\n    return storage.indexOfFirst {
predicate(it.toUByte()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfFirst(predicate: (UShort) -> Boolean): Int {\n    return storage.indexOfFirst {

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    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if (predicate(element)) return
element\n    }\n    throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.last(predicate: (UShort) -> Boolean): UShort {\n    for (index in this.indices.reversed()) {\n        val
element = this[index]\n        if (predicate(element)) return element\n    }\n    throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns last index
of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.lastIndexOf(element: UInt): Int {\n    return storage.lastIndexOf(element.toInt())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastIndexOf(element: ULong): Int {\n    return storage.lastIndexOf(element.toLong())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastIndexOf(element: UByte): Int {\n    return storage.lastIndexOf(element.toByte())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.lastIndexOf(element: UShort): Int {\n    return storage.lastIndexOf(element.toShort())\n}\n\n/**\n *
Returns
the last element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.lastOrNull(): UInt? {\n    return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.lastOrNull(): ULong? {\n    return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.lastOrNull(): UByte? {\n    return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.lastOrNull(): UShort? {\n    return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the
last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.lastOrNull(predicate: (UInt) -> Boolean): UInt? {\n    for (index in this.indices.reversed()) {\n        val
element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastOrNull(predicate: (ULong) -> Boolean): ULong? {\n    for (index in this.indices.reversed())
{\n        val element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastOrNull(predicate: (UByte) -> Boolean): UByte? {\n    for (index in this.indices.reversed()) {\n

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val element = this[index]\n    if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.lastOrNull(predicate: (UShort) -> Boolean): UShort? {\n    for (index in this.indices.reversed())\n    {\n        val element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.random(): UInt {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.random(): ULong {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.random(): UByte {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.random(): UShort {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.random(random: Random): UInt {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.random(random: Random): ULong {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.random(random: Random): UByte {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.random(random: Random): UShort {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.randomOrNull(): UInt? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.randomOrNull(): ULong? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.randomOrNull(): UByte? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.randomOrNull(): UShort?

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    { \n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified
source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun UIntArray.randomOrNull(random: Random): UInt? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun ULongArray.randomOrNull(random: Random): ULong? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun UByteArray.randomOrNull(random: Random): UByte? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun UShortArray.randomOrNull(random: Random): UShort? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or
has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.single(): UInt {\n    return storage.single().toUInt()\n}\n\n/**\n * Returns the single element, or throws an
exception if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.single(): ULong {\n    return storage.single().toULong()\n}\n\n/**\n * Returns the single
element, or throws an exception if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.single(): UByte {\n    return storage.single().toUByte()\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.single(): UShort {\n    return storage.single().toUShort()\n}\n\n/**\n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.single(predicate: (UInt) -> Boolean): UInt {\n
    var single: UInt? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if
(found) throw IllegalArgumentException("Array contains more than one matching element.")\n            single =
element\n            found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as UInt\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one
matching element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.single(predicate: (ULong) -> Boolean): ULong {\n    var single: ULong? = null\n    var found = false\n
for (element in this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException("Array
contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Array
contains no element matching the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as
ULong\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or
more than one matching element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

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ByteArray.single(predicate: (Byte) -> Boolean): Byte {
    var single: Byte? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array
contains more than one matching element.")
            single = element
            found = true
        }
        if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
    }
    @Suppress("UNCHECKED_CAST") return single as Byte
}

* Returns the single element matching the given [predicate], or throws exception if there is no or more than one
matching element.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UShortArray.single(predicate: (UShort) -> Boolean): UShort {
    var single: UShort? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array
contains more than one matching element.")
            single = element
            found = true
        }
        if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
    }
    @Suppress("UNCHECKED_CAST") return single as UShort
}

* Returns single element, or `null` if
the array is empty or has more than one element.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun UIntArray.singleOrNull(): UInt? {
    return if (size == 1) this[0]
    else null
}

* Returns single element, or `null` if the array is empty or has more than one element.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun ULongArray.singleOrNull(): ULong? {
    return if (size == 1) this[0] else null
}

* Returns single element, or `null` if the array is empty or has more
than one element.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun
ByteArray.singleOrNull(): Byte? {
    return if (size == 1) this[0] else null
}

* Returns single element,
or `null` if the array is empty or has more than one element.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun UShortArray.singleOrNull(): UShort? {
    return if (size == 1) this[0] else null
}

* Returns the single element matching the given [predicate], or
`null` if element was not found or more than one element was found.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public
inline fun UIntArray.singleOrNull(predicate: (UInt) -> Boolean): UInt? {
    var single: UInt? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single =
element
            found = true
        }
        if (!found) return null
    }
    return single
}

* Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline
fun ULongArray.singleOrNull(predicate: (ULong) -> Boolean): ULong? {
    var single: ULong? = null
    var
found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single
= element
            found = true
        }
        if (!found) return null
    }
    return single
}

* Returns the
single element matching the given
[predicate], or `null` if element was not found or more than one element was found.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ByteArray.singleOrNull(predicate: (Byte) -> Boolean): Byte? {
    var single: Byte? = null
    var found =
false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single =
element
            found = true
        }
        if (!found) return null
    }
    return single
}

* Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline
fun UShortArray.singleOrNull(predicate: (UShort) -> Boolean): UShort? {
    var single: UShort? = null
    var
found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) return null
            single
= element
            found = true
        }
        if (!found) return null
    }
    return single
}

* Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.

Returns a list containing all elements except first [n] elements.
* @throws IllegalArgumentException if [n] is
negative.
* @sample samples.collections.Collections.Transformations.drop

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun UIntArray.drop(n: Int): List<UInt> {

```

```

require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.drop(n: Int): List<ULong> {\n
  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n]
is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.drop(n: Int): List<UByte> {\n
  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n]
is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.drop(n: Int): List<UShort> {\n
  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException
if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.dropLast(n: Int): List<UInt> {\n
  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException
if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.dropLast(n: Int):
List<ULong> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException
if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic
fun UByteArray.dropLast(n: Int): List<UByte> {\n  require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n  return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
[n] elements.\n * \n * @throws
IllegalArgumentException
if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.dropLast(n: Int):
List<UShort> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.dropLastWhile(predicate: (UInt) -> Boolean):
List<UInt> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return take(index
+ 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements
that satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.dropLastWhile(predicate: (ULong) -> Boolean): List<ULong> {\n  for (index in lastIndex downTo 0)
{\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n

```

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.dropLastWhile(predicate:
(UByte) -> Boolean): List<UByte> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n
return take(index + 1)\n } \n } \n return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.dropLastWhile(predicate: (UShort) -> Boolean): List<UShort> {\n for (index in lastIndex downTo
0) {\n if (!predicate(this[index])) {\n return take(index + 1)\n } \n } \n return
emptyList()\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.dropWhile(predicate: (UInt) -> Boolean): List<UInt> {\n var yielding = false\n val list =
ArrayList<UInt>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n
list.add(item)\n yielding = true\n } \n return list}\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.dropWhile(predicate: (ULong) -> Boolean): List<ULong> {\n var yielding = false\n val list =
ArrayList<ULong>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item))
{\n list.add(item)\n yielding = true\n } \n return list}\n}\n\n/**\n * Returns a list containing all
elements except
first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.dropWhile(predicate: (UByte) -> Boolean): List<UByte> {\n var yielding = false\n val list =
ArrayList<UByte>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item))
{\n list.add(item)\n yielding = true\n } \n return list}\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.dropWhile(predicate: (UShort) -> Boolean): List<UShort> {\n var yielding = false\n val list =
ArrayList<UShort>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item))
{\n list.add(item)\n yielding = true\n } \n return list}\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filter(predicate: (UInt) -> Boolean): List<UInt> {\n return filterTo(ArrayList<UInt>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filter(predicate: (ULong) -> Boolean): List<ULong> {\n return filterTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n *
*\n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filter(predicate: (UByte) -> Boolean): List<UByte> {\n return filterTo(ArrayList<UByte>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n

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*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UShortArray.filter(predicate: (UShort) -> Boolean): List<UShort> {n return filterTo(ArrayList<UShort>(),
predicate)n}n/n/**n * Returns a list containing only elements matching the given [predicate].n * @param
[predicate] function that takes the index of an element and the element itselfn * and returns the result of predicate
evaluation on the element.n * n * @sample samples.collections.Collections.Filtering.filterIndexedn
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic
inline fun UIntArray.filterIndexed(predicate: (index: Int, UInt) -> Boolean): List<UInt> {n return
filterIndexedTo(ArrayList<UInt>(), predicate)n}n/n/**n * Returns a list containing only elements matching the
given [predicate].n * @param [predicate] function that takes the index of an element and the element itselfn * and
returns the result of predicate evaluation on the element.n * n * @sample
samples.collections.Collections.Filtering.filterIndexedn
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
ULongArray.filterIndexed(predicate: (index: Int, ULong) -> Boolean): List<ULong> {n return
filterIndexedTo(ArrayList<ULong>(), predicate)n}n/n/**n * Returns a list containing only elements matching the
given [predicate].n * @param [predicate] function that takes the index of an element and the element itselfn * and
returns the result of predicate evaluation
on the element.n * n * @sample samples.collections.Collections.Filtering.filterIndexedn
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UByteArray.filterIndexed(predicate: (index: Int, UByte) -> Boolean): List<UByte> {n return
filterIndexedTo(ArrayList<UByte>(), predicate)n}n/n/**n * Returns a list containing only elements matching the
given [predicate].n * @param [predicate] function that takes the index of an element and the element itselfn * and
returns the result of predicate evaluation on the element.n * n * @sample
samples.collections.Collections.Filtering.filterIndexedn
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UShortArray.filterIndexed(predicate: (index: Int, UShort) -> Boolean): List<UShort> {n return
filterIndexedTo(ArrayList<UShort>(), predicate)n}n/n/**n * Appends all elements matching the given [predicate]
to the given [destination].n
* @param [predicate] function that takes the index of an element and the element itselfn * and returns the result of
predicate evaluation on the element.n * n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterIndexedTo(destination: C, predicate: (index: Int, UInt) -> Boolean): C {
n forEachIndexed { index, element ->n if (predicate(index, element)) destination.add(element)n }n
return destinationn}n/n/**n * Appends all elements matching the given [predicate] to the given [destination].n *
@param [predicate] function that takes the index of an element and the element itselfn * and returns the result of
predicate evaluation on the element.n * n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic
inline fun <C : MutableCollection<in ULong>> ULongArray.filterIndexedTo(destination: C, predicate: (index: Int,
ULong) -> Boolean): C {n forEachIndexed { index, element ->n if (predicate(index, element))
destination.add(element)n }n return destinationn}n/n/**n * Appends all elements matching the given
[predicate] to the given [destination].n * @param [predicate] function that takes the index of an element and the
element itselfn * and returns the result of predicate evaluation on the element.n * n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterIndexedTo(destination: C, predicate: (index: Int, UByte) ->
Boolean): C {n forEachIndexed { index, element ->n if (predicate(index, element))
destination.add(element)n }n return destinationn}n/n/**n * Appends all
elements matching the given [predicate] to the given [destination].n * @param [predicate] function that takes the
index of an element and the element itselfn * and returns the result of predicate evaluation on the element.n * n *

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@sample samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterIndexedTo(destination: C, predicate: (index: Int, UShort) ->
Boolean): C {\n  forEachIndexed { index, element ->\n    if (predicate(index, element))
destination.add(element)\n  }\n  return destination\n}\n\n/**\n * Returns a list containing all elements not
matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filterNot(predicate: (UInt) -> Boolean): List<UInt> {\n  return
filterNotTo(ArrayList<UInt>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filterNot(predicate: (ULong) -> Boolean): List<ULong> {\n  return filterNotTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filterNot(predicate: (UByte) -> Boolean): List<UByte> {\n  return filterNotTo(ArrayList<UByte>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.filterNot(predicate: (UShort) -> Boolean): List<UShort> {\n  return
filterNotTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements not matching the given [predicate]
to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterNotTo(destination: C, predicate: (UInt) -> Boolean): C {\n  for
(element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all
elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterNotTo(destination:
C, predicate: (ULong) -> Boolean): C {\n  for (element in this) if (!predicate(element)) destination.add(element)\n
return destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given
[destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterNotTo(destination: C, predicate: (UByte) -> Boolean): C {\n  for
(element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all
elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterNotTo(destination: C, predicate: (UShort) -> Boolean):
C {\n  for (element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n *
Appends all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterTo(destination: C, predicate: (UInt) -> Boolean): C {\n  for (element
in this) if (predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :

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MutableCollection<in ULong>> ULongArray.filterTo(destination: C, predicate: (ULong) -> Boolean): C {\n for
(element in this) if (predicate(element))
destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements matching the given [predicate]
to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterTo(destination: C, predicate: (UByte) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterTo(destination: C, predicate: (UShort) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n
* Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: IntRange):
List<UInt> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.slice(indices: IntRange):
List<ULong> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: IntRange):
List<UByte> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.slice(indices: IntRange):
List<UShort> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: Iterable<Int>):
List<UInt> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UInt>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.slice(indices: Iterable<Int>):
List<ULong> {\n val size = indices.collectionSizeOrDefault(10)\n if (size ==
0) return emptyList()\n val list = ArrayList<ULong>(size)\n for (index in indices) {\n list.add(get(index))\n
}\n return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: Iterable<Int>):
List<UByte> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UByte>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.slice(indices: Iterable<Int>):
List<UShort> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UShort>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n *
Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sliceArray(indices:
Collection<Int>): UIntArray {\n return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sliceArray(indices:
Collection<Int>): ULongArray {\n return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array

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containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sliceArray(indices:
Collection<Int>): UByteArray {\n    return UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sliceArray(indices:
Collection<Int>): UShortArray {\n
    return UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in
the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.sliceArray(indices: IntRange): UIntArray {\n    return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sliceArray(indices: IntRange):
ULongArray {\n    return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing
elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sliceArray(indices: IntRange):
UByteArray {\n    return UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing
elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.sliceArray(indices: IntRange): UShortArray {\n    return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.take(n: Int): List<UInt> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<UInt>(n)\n    for
(item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns
a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.take(n: Int): List<ULong> {\n    require(n >= 0) { "Requested element count $n is less than
zero." }\n    if (n == 0) return emptyList()\n    if (n >= size) return toList()\n    if (n == 1) return listOf(this[0])\n
var count = 0\n    val list = ArrayList<ULong>(n)\n    for (item in this) {\n        list.add(item)\n        if (++count ==
n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.take(n: Int): List<UByte> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<UByte>(n)\n
for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.take(n: Int): List<UShort> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n    if (n == 0) return emptyList()\n    if (n >=
size) return toList()\n    if (n == 1) return listOf(this[0])\n    var count = 0\n    val list = ArrayList<UShort>(n)\n
for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list\n}\n\n/**\n * Returns
a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic

```

```

fun UIntArray.takeLast(n: Int): List<UInt> {
    require(n >= 0) { "Requested element count $n is less than zero." }
    if (n == 0) return emptyList()
    val size = size
    if (n >= size) return toList()
    if (n == 1) return listOf(this[size - 1])
    val list = ArrayList<UInt>(n)
    for (index in size - n until size)
        list.add(this[index])
    return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun ULongArray.takeLast(n: Int): List<ULong>
{
    require(n >= 0) { "Requested element count $n is less than zero." }
    if (n == 0) return emptyList()
    val size = size
    if (n >= size) return toList()
    if (n == 1) return listOf(this[size - 1])
    val list = ArrayList<ULong>(n)
    for (index in size - n until size)
        list.add(this[index])
    return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun UByteArray.takeLast(n: Int): List<UByte>
{
    require(n >= 0) { "Requested element count $n is less than zero." }
    if (n == 0) return emptyList()
    val size = size
    if (n >= size) return toList()
    if (n == 1) return listOf(this[size - 1])
    val list = ArrayList<UByte>(n)
    for (index in size - n until size)
        list.add(this[index])
    return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun UShortArray.takeLast(n: Int): List<UShort>
{
    require(n >= 0) { "Requested element count $n is less than zero." }
    if (n == 0) return emptyList()
    val size = size
    if (n >= size) return toList()
    if (n == 1) return listOf(this[size - 1])
    val list = ArrayList<UShort>(n)
    for (index in size - n until size)
        list.add(this[index])
    return list
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UIntArray.takeLastWhile(predicate: (UInt) -> Boolean): List<UInt> {
    for (index in lastIndex downTo 0) {
        if (!predicate(this[index]))
            return drop(index + 1)
    }
    return toList()
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic
inline fun ULongArray.takeLastWhile(predicate: (ULong) -> Boolean): List<ULong> {
    for (index in lastIndex downTo 0) {
        if (!predicate(this[index]))
            return drop(index + 1)
    }
    return toList()
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UByteArray.takeLastWhile(predicate: (UByte) -> Boolean): List<UByte> {
    for (index in lastIndex downTo 0) {
        if (!predicate(this[index]))
            return drop(index + 1)
    }
    return toList()
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic
inline fun UShortArray.takeLastWhile(predicate: (UShort) -> Boolean): List<UShort> {
    for (index in lastIndex downTo 0) {
        if (!predicate(this[index]))
            return drop(index + 1)
    }
    return toList()
}
// Returns a list containing first elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UIntArray.takeWhile(predicate: (UInt) -> Boolean): List<UInt> {
    val list = ArrayList<UInt>()
    for (item in this) {
        if (!predicate(item))
            break
        list.add(item)
    }
    return list
}
// Returns a list

```

```

containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.takeWhile(predicate: (ULong) -> Boolean): List<ULong> {\n val list =
ArrayList<ULong>()\n for (item in this) {\n if (!predicate(item))\n break\n list.add(item)\n }\n
return list\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.takeWhile(predicate: (UByte) -> Boolean): List<UByte> {\n val list = ArrayList<UByte>()\n for
(item in this) {\n if (!predicate(item))\n break\n list.add(item)\n }\n return list\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.takeWhile(predicate: (UShort) -> Boolean): List<UShort> {\n val list =
ArrayList<UShort>()\n for (item in this) {\n if (!predicate(item))\n break\n list.add(item)\n }\n
return list\n}\n\n/**\n * Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reverse(): Unit {\n storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reverse(): Unit {\n storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reverse(): Unit {\n storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.reverse(): Unit {\n storage.reverse()\n}\n\n/**\n * Reverses elements of the array in the
specified range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param
toIndex the end of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Reverses elements
of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to
reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n    storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Returns a list with elements in reversed order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.reversed(): List<UInt> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n
list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.reversed(): List<ULong> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n
list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.reversed(): List<UByte> {\n
if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns
a list with elements in reversed order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.reversed(): List<UShort> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n
list.reverse()\n    return list\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reversedArray(): UIntArray {\n    return UIntArray(storage.reversedArray())\n}\n\n/**\n * Returns an
array
with elements of this array in reversed order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reversedArray(): ULongArray {\n    return ULongArray(storage.reversedArray())\n}\n\n/**\n *
Returns an array with elements of this array in reversed order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reversedArray(): UByteArray {\n    return UByteArray(storage.reversedArray())\n}\n\n/**\n * Returns
an array with elements of this array in reversed order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reversedArray(): UShortArray {\n    return UShortArray(storage.reversedArray())\n}\n\n/**\n *
Randomly shuffles elements in this array in-place.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.shuffle(): Unit {\n
shuffle(Random)\n}\n\n/**\n * Randomly shuffles
elements in this array in-place.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-
place.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.shuffle(): Unit {\n
shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.shuffle(): Unit {\n
shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random]
instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.shuffle(random: Random): Unit
{\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] =
this[j]\n        this[j]
= copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance
as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.shuffle(random: Random):
Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] =
this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.shuffle(random: Random):

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Unit {
    for (i in lastIndex downTo 1) {
        val j = random.nextInt(i + 1)
        val copy = this[i]
        this[i] =
        this[j]
        this[j] = copy
    }
}

Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness. See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UShortArray.shuffle(random: Random):
Unit {
    for (i in lastIndex downTo 1) {
        val j = random.nextInt(i + 1)
        val copy = this[i]
        this[i] =
        this[j]
        this[j] = copy
    }
}

Sorts elements in the array in-place descending according to their
natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UIntArray.sortDescending(): Unit {
    if (size > 1) {
        sort()
        reverse()
    }
}

Sorts elements
in the array in-place descending according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun ULongArray.sortDescending(): Unit {
    if
(size > 1)
{
        sort()
        reverse()
    }
}

Sorts elements in the array in-place descending according to their
natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UByteArray.sortDescending(): Unit {
    if (size > 1) {
        sort()
        reverse()
    }
}

Sorts
elements in the array in-place descending according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UShortArray.sortDescending(): Unit {
    if
(size > 1) {
        sort()
        reverse()
    }
}

Returns a list of all elements sorted according to their
natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UIntArray.sorted():
List<UInt> {
    return copyOf().apply { sort() }.asList()
}

Returns a list of all elements sorted
according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
ULongArray.sorted():
List<ULong> {
    return copyOf().apply { sort() }.asList()
}

Returns a list of all elements sorted
according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UByteArray.sorted(): List<UByte> {
    return copyOf().apply { sort() }.asList()
}

Returns a list of all
elements sorted according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UShortArray.sorted(): List<UShort> {
    return copyOf().apply { sort() }.asList()
}

Returns an array with all elements of this array sorted
according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UIntArray.sortedArray(): UIntArray {
    if (isEmpty()) return this
    return this.copyOf().apply { sort()
}
}

Returns an array with all elements of this array sorted according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public
fun ULongArray.sortedArray(): ULongArray {
    if (isEmpty()) return this
    return this.copyOf().apply { sort()
}
}

Returns an array with all elements of this array sorted according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UByteArray.sortedArray(): UByteArray {
    if (isEmpty()) return this
    return this.copyOf().apply { sort() }
}

Returns an array with all elements
of this array sorted according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UShortArray.sortedArray(): UShortArray
{
    if (isEmpty()) return this
    return this.copyOf().apply { sort() }
}

Returns an array with all
elements of this array sorted descending according to their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UIntArray.sortedArrayDescending():
UIntArray {
    if (isEmpty()) return this
    return this.copyOf().apply
{
        sortDescending()
    }
}

Returns an array with all elements of this array sorted descending according to
their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
ULongArray.sortedArrayDescending(): ULongArray {
    if (isEmpty()) return this
    return this.copyOf().apply {
        sortDescending()
    }
}

Returns an array with all elements of this array sorted descending according to
their natural sort order.

@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun

```

UByteArray.sortedArrayDescending(): UByteArray { \n if (isEmpty()) return this\n return this.copyOf().apply {
 sortDescending() } \n } \n \n /** \n * Returns an array with all elements of this array sorted descending according to
 their natural sort order. \n * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public fun
 UShortArray.sortedArrayDescending(): UShortArray { \n if (isEmpty()) return this\n return this.copyOf().apply {
 sortDescending() } \n } \n \n /** \n
 * Returns a list of all elements sorted descending according to their natural sort order. \n * \n * The sort is `_stable_`.
 It means that equal elements preserve their order relative to each other after sorting. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public fun UIntArray.sortedDescending(): List<UInt>
 { \n return copyOf().apply { sort() }.reversed() \n } \n \n /** \n * Returns a list of all elements sorted descending
 according to their natural sort order. \n * \n * The sort is `_stable_`. It means that equal elements preserve their order
 relative to each other after sorting. \n * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public fun
 ULongArray.sortedDescending(): List<ULong> { \n return copyOf().apply { sort() }.reversed() \n } \n \n /** \n *
 Returns a list of all elements sorted descending according to their natural sort order. \n * \n * The sort is `_stable_`. It
 means that equal elements preserve their order relative to each other after sorting. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public
 fun UByteArray.sortedDescending(): List<UByte> { \n return copyOf().apply { sort() }.reversed() \n } \n \n /** \n *
 Returns a list of all elements sorted descending according to their natural sort order. \n * \n * The sort is `_stable_`. It
 means that equal elements preserve their order relative to each other after sorting. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public fun UShortArray.sortedDescending():
 List<UShort> { \n return copyOf().apply { sort() }.reversed() \n } \n \n /** \n * Returns an array of type [ByteArray],
 which is a view of this array where each element is a signed reinterpretation \n * of the corresponding element of this
 array. \n * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n @kotlin.internal.InlineOnly \n public inline fun
 UByteArray.asByteArray(): ByteArray { \n return storage \n } \n \n /** \n * Returns an array of type [IntArray], which
 is a view of this array where each element is a signed reinterpretation \n
 * of the corresponding element of this array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n @kotlin.internal.InlineOnly \n public inline fun
 UIntArray.asIntArray(): IntArray { \n return storage \n } \n \n /** \n * Returns a [List] that wraps the original array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public expect fun UIntArray.asList():
 List<UInt> \n \n /** \n * Returns a [List] that wraps the original array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public expect fun ULongArray.asList():
 List<ULong> \n \n /** \n * Returns a [List] that wraps the original array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public expect fun UByteArray.asList():
 List<UByte> \n \n /** \n * Returns a [List] that wraps the original array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n public expect fun UShortArray.asList():
 List<UShort> \n \n /** \n * Returns an array of type [LongArray], which is a view of this array where each element is
 a signed reinterpretation \n
 * of the corresponding element of this array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n @kotlin.internal.InlineOnly \n public inline fun
 ULongArray.asLongArray(): LongArray { \n return storage \n } \n \n /** \n * Returns an array of type [ShortArray],
 which is a view of this array where each element is a signed reinterpretation \n * of the corresponding element of this
 array. \n * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n @kotlin.internal.InlineOnly \n public inline fun
 UShortArray.asShortArray(): ShortArray { \n return storage \n } \n \n /** \n * Returns an array of type [UByteArray],
 which is a view of this array where each element is an unsigned reinterpretation \n * of the corresponding element of
 this array. \n * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n @kotlin.internal.InlineOnly \n public inline
 fun ByteArray.asUByteArray(): UByteArray { \n return UByteArray(this) \n } \n \n /** \n * Returns an array of type
 [UIntArray], which is a view of this array where
 each element is an unsigned reinterpretation \n * of the corresponding element of this array. \n
 * \n @SinceKotlin("1.3") \n @ExperimentalUnsignedTypes \n @kotlin.internal.InlineOnly \n public inline fun

```

IntArray.asUIntArray(): UIntArray {
    return UIntArray(this)
}

/**
 * Returns an array of type [UIntArray], which is a view of this array where each element is an unsigned reinterpretation of the corresponding element of this array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
LongArray.asULongArray(): ULongArray {
    return ULongArray(this)
}

/**
 * Returns an array of type [ULongArray], which is a view of this array where each element is an unsigned reinterpretation of the corresponding element of this array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ShortArray.asUShortArray(): UShortArray {
    return UShortArray(this)
}

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 * @SinceKotlin("1.3")
 * @DeprecatedSinceKotlin(hiddenSince = "1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun UIntArray.contentEquals(other: UIntArray): Boolean {
 *     return this.contentEquals(other)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 * @SinceKotlin("1.3")
 * @DeprecatedSinceKotlin(hiddenSince = "1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun ULongArray.contentEquals(other: ULongArray): Boolean {
 *     return this.contentEquals(other)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 * @SinceKotlin("1.3")
 * @DeprecatedSinceKotlin(hiddenSince = "1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun UByteArray.contentEquals(other: UByteArray): Boolean {
 *     return this.contentEquals(other)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 * @SinceKotlin("1.3")
 * @DeprecatedSinceKotlin(hiddenSince = "1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun UShortArray.contentEquals(other: UShortArray): Boolean {
 *     return this.contentEquals(other)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @SinceKotlin("1.4")
 * @ExperimentalUnsignedTypes
 * public
 * infix fun UIntArray?.contentEquals(other: UIntArray?): Boolean {
 *     return
 *     this?.storage.contentEquals(other?.storage)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @SinceKotlin("1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun
 * ULongArray?.contentEquals(other: ULongArray?): Boolean {
 *     return this?.storage.contentEquals(other?.storage)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @SinceKotlin("1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun
 * UByteArray?.contentEquals(other: UByteArray?): Boolean {
 *     return
 *     this?.storage.contentEquals(other?.storage)
 * }

/**
 * Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.
 *
 * @SinceKotlin("1.4")
 * @ExperimentalUnsignedTypes
 * public infix fun
 * UShortArray?.contentEquals(other: UShortArray?): Boolean {
 *     return
 *     this?.storage.contentEquals(other?.storage)
 * }

/**
 * Returns a hash code based on the contents of this array as if it is [List].
 *
 * @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")
 * @SinceKotlin("1.3")
 * @DeprecatedSinceKotlin(hiddenSince = "1.4")
 * @ExperimentalUnsignedTypes
 * public fun UIntArray.contentHashCode(): Int {
 *     return
 *     this.contentHashCode()
 * }

/**
 * Returns a hash code based on the contents of this array as if it is [List].
 */

```



```

    {
        return this?.joinToString(", ", "[", "]") ?: "null"
    }
}

Returns a string representation of the contents of the specified array as if it is [List].

@sample
samples.collections.Arrays.ContentOperations.contentToString

@SinceKotlin("1.4")@ExperimentalUnsignedTypes
public fun UByteArray?.contentToString(): String {
    return this?.joinToString(", ", "[", "]") ?: "null"
}

Returns a string representation of the contents of the specified array as if it is [List].

@sample
samples.collections.Arrays.ContentOperations.contentToString

@SinceKotlin("1.4")@ExperimentalUnsignedTypes
public fun UShortArray?.contentToString(): String {
    return this?.joinToString(", ", "[", "]") ?: "null"
}

Copies this array or its subrange into the [destination] array and returns that array. It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.

@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.

@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.

@return the [destination] array.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun UIntArray.copyInto(
    destination: UIntArray,
    destinationOffset: Int = 0,
    startIndex: Int = 0,
    endIndex: Int = size): UIntArray {
    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)
    return destination
}

Copies this array or its subrange into the [destination] array and returns that array. It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.

@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.

@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.

@return the [destination] array.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun ULongArray.copyInto(
    destination: ULongArray,
    destinationOffset: Int = 0,
    startIndex: Int = 0,
    endIndex: Int = size): ULongArray {
    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)
    return destination
}

Copies this array or its subrange into the [destination] array and returns that array. It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.

@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.

@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.

@return the [destination] array.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun UByteArray.copyInto(
    destination: UByteArray,
    destinationOffset: Int = 0,
    startIndex: Int = 0,
    endIndex: Int = size): UByteArray {
    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)
    return destination
}

Copies this array or its subrange into the [destination] array and returns that array.

```

It's allowed to pass the same array in the [destination] and even

specify the subrange so that it overlaps with the destination range.
@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.
@return the [destination] array.

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.copyInto(destination: UShortArray, destinationOffset:
```

```
Int = 0, startIndex: Int = 0, endIndex: Int = size): UShortArray {\n    storage.copyInto(destination.storage,  
destinationOffset, startIndex, endIndex)\n    return destination\n}\n/**\n * Returns new array which is a copy of  
the original array.\n * @sample samples.collections.Arrays.CopyOfOperations.copyOf
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.copyOf(): UIntArray {\n    return UIntArray(storage.copyOf())\n}\n/**\n * Returns new array which is  
a copy of the original array.\n * @sample samples.collections.Arrays.CopyOfOperations.copyOf
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.copyOf(): ULongArray {\n    return ULongArray(storage.copyOf())\n}\n/**\n * Returns new array  
which is a copy of the original array.\n * @sample samples.collections.Arrays.CopyOfOperations.copyOf
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  
inline fun UByteArray.copyOf(): UByteArray {\n    return UByteArray(storage.copyOf())\n}\n/**\n * Returns  
new array which is a copy of the original array.\n * @sample  
samples.collections.Arrays.CopyOfOperations.copyOf
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.copyOfOf(): UShortArray {\n    return UShortArray(storage.copyOfOf())\n}\n/**\n * Returns new array  
which is a copy of the original array, resized to the given [newSize].  
The copy is either truncated or padded at  
the end with zero values if necessary.  
- If [newSize] is less than the size of the original array, the copy array  
is truncated to the [newSize].  
- If [newSize] is greater than the size of the original array, the extra elements in the  
copy array are filled with zero values.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.copyOfOf(newSize:
```

```
Int): UIntArray {\n    return UIntArray(storage.copyOfOf(newSize))\n}\n/**\n * Returns new array which is a copy  
of the original array, resized to the given [newSize].  
The copy is either truncated or padded at the end with zero  
values if necessary.  
- If [newSize] is less than the size of the original array, the copy array is truncated to the  
[newSize].  
- If [newSize] is greater than the size of the original array, the extra elements in the copy array are  
filled with zero values.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.copyOfOf(newSize: Int): ULongArray {\n    return ULongArray(storage.copyOfOf(newSize))\n}\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].  
The copy is either  
truncated or padded at the end with zero values if necessary.  
- If [newSize] is less than the size of the  
original array, the copy array is truncated
```

```
to the [newSize].  
- If [newSize] is greater than the size of the original array, the extra elements in the copy array  
are filled with zero values.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.copyOfOf(newSize: Int): UByteArray {\n    return UByteArray(storage.copyOfOf(newSize))\n}\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].  
The copy is either  
truncated or padded at the end with zero values if necessary.  
- If [newSize] is less than the size of the
```

original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.copyOf(newSize: Int): UShortArray {\n    return UShortArray(storage.copyOf(newSize))\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.copyOfRange(fromIndex: Int, toIndex: Int): UIntArray {\n    return  
UIntArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.copyOfRange(fromIndex: Int, toIndex: Int): ULongArray {\n    return  
ULongArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws  
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.copyOfRange(fromIndex: Int, toIndex: Int): UByteArray {\n    return  
UByteArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws  
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.copyOfRange(fromIndex: Int, toIndex: Int): UShortArray {\n    return  
UShortArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws  
IndexOutOfBoundsException if [fromIndex] is less than zero  
or [toIndex] is greater than the size of this array.\n * @throws  
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.fill(element: UInt, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toInt(), fromIndex, toIndex)\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws  
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws  
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.fill(element: ULong, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toLong(), fromIndex, toIndex)\n}\n\n/**\n
```

```
 * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws  
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
```

than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.fill(element: UByte,
fromIndex: Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toByte(), fromIndex, toIndex)\n}\n\n/**\n *
Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.fill(element: UShort, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toShort(),
fromIndex, toIndex)\n}\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UIntArray.indices: IntRange\n    get()
= storage.indices\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val ULongArray.indices: IntRange\n
    get() = storage.indices\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UByteArray.indices: IntRange\n
    get() = storage.indices\n\n/**\n * Returns the range of valid indices for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UShortArray.indices: IntRange\n
    get() = storage.indices\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UIntArray.lastIndex: Int\n    get() =
storage.lastIndex\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val ULongArray.lastIndex: Int\n    get() =
storage.lastIndex\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UByteArray.lastIndex: Int\n    get() =
storage.lastIndex\n\n/**\n * Returns the last valid index for the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UShortArray.lastIndex: Int\n    get() =
storage.lastIndex\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UIntArray.plus(element: UInt): UIntArray {\n    return UIntArray(storage +
element.toInt())\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
operator fun ULongArray.plus(element: ULong): ULongArray {\n    return ULongArray(storage +
element.toLong())\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
operator fun UByteArray.plus(element: UByte): UByteArray {\n    return UByteArray(storage +
element.toByte())\n}\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UShortArray.plus(element: UShort): UShortArray {\n    return UShortArray(storage +
element.toShort())\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] collection.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator
fun UIntArray.plus(elements: Collection<UInt>): UIntArray {\n    var index = size\n    val result =
storage.copyOfOf(size + elements.size)\n    for (element in elements) result[index++] = element.toInt()\n    return
UIntArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] collection.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator
fun ULongArray.plus(elements: Collection<ULong>): ULongArray {\n    var index = size\n    val result =
storage.copyOfOf(size + elements.size)\n    for (element in elements) result[index++] = element.toLong()\n
return ULongArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then
all elements of the given [elements] collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator fun UByteArray.plus(elements:

```

```

Collection<UByte>): UByteArray {
    var index = size
    val result = storage.copyOf(size + elements.size)
    for (element in elements) result[index++] = element.toByte()
    return UByteArray(result)
}

/**
 * Returns an array containing all elements of the original array and then all elements of the given [elements] collection.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public operator fun UShortArray.plus(elements: Collection<UShort>): UShortArray {
    var index = size
    val result = storage.copyOf(size + elements.size)
    for (element in elements) result[index++] = element.toShort()
    return UShortArray(result)
}

/**
 * Returns an array containing all elements of the original array and then all elements of the given [elements] array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun UIntArray.plus(elements: UIntArray): UIntArray {
    return UIntArray(storage + elements.storage)
}

/**
 * Returns an array containing all elements of the original array and then all elements of the given [elements] array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun ULongArray.plus(elements: ULongArray): ULongArray {
    return ULongArray(storage + elements.storage)
}

/**
 * Returns an array containing all elements of the original array and then all elements of the given [elements] array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun UByteArray.plus(elements: UByteArray): UByteArray {
    return UByteArray(storage + elements.storage)
}

/**
 * Returns an array containing all elements of the original array and then all elements of the given [elements] array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun UShortArray.plus(elements: UShortArray): UShortArray {
    return UShortArray(storage + elements.storage)
}

/**
 * Sorts the array in-place.
 * @sample samples.collections.Arrays.Sorting.sortArray
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UIntArray.sort(): Unit {
    if (size > 1) sortArray(this, 0, size)
}

/**
 * Sorts the array in-place.
 * @sample samples.collections.Arrays.Sorting.sortArray
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun ULongArray.sort(): Unit {
    if (size > 1) sortArray(this, 0, size)
}

/**
 * Sorts the array in-place.
 * @sample samples.collections.Arrays.Sorting.sortArray
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UByteArray.sort(): Unit {
    if (size > 1) sortArray(this, 0, size)
}

/**
 * Sorts the array in-place.
 * @sample samples.collections.Arrays.Sorting.sortArray
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UShortArray.sort(): Unit {
    if (size > 1) sortArray(this, 0, size)
}

/**
 * Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UIntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    sortArray(this, fromIndex, toIndex)
}

/**
 * Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun ULongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
    sortArray(this, fromIndex, toIndex)
}

/**
 * Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array
 */

```

by default.\n * \n * @throws IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the
range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array
by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    sortArray(this, fromIndex, toIndex)\n}\n\n/**\n *
Sorts elements of the array in the specified range in-place.\n * The elements are sorted descending according to their
natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end
of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
[toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex,
toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements
are sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the range
(inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
(exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size
of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
(exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex, toIndex)\n}\n\n/**\n * Returns
an array of type [ByteArray], which is a copy of this array where each element is a signed reinterpretation\n * of the
corresponding element of this array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.toByteArray(): ByteArray {\n    return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[IntArray], which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding
element of this array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.toIntArray(): IntArray {\n    return storage.copyOf()\n}\n\n/**\n * Returns an array of type [LongArray],
```

which is a copy of this array where each element is a signed reinterpretation of the corresponding element of this array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly public inline fun
UByteArray.toByteArray(): ByteArray {
    return storage.copyOf()
}

```

Returns an array of type [ByteArray], which is a copy of this array where each element is a signed reinterpretation of the corresponding element of this array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly public inline fun
UShortArray.toShortArray(): ShortArray {
    return storage.copyOf()
}

```

Returns a typed object array containing all of the elements of this primitive array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun UIntArray.toArray(): Array<UInt> {
    return Array(size) { index -> this[index] }
}

```

Returns a typed object array containing all of the elements of this primitive array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun
UByteArray.toArray(): Array<UByte> {
    return Array(size) { index -> this[index] }
}

```

Returns a typed object array containing all of the elements of this primitive array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun UShortArray.toArray():
Array<UShort> {
    return Array(size) { index -> this[index] }
}

```

Returns an array of UByte containing all of the elements of this generic array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun
Array<out UByte>.toByteArray(): UByteArray {
    return UByteArray(size) { index -> this[index] }
}

```

Returns an array of type [UByteArray], which is a copy of this array where each element is an unsigned reinterpretation of the corresponding element of this array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly public inline fun
ByteArray.toByteArray(): UByteArray {
    return UByteArray(this.copyOf())
}

```

Returns an array of UInt containing all of the elements of this generic array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun Array<out
UInt>.toUIntArray(): UIntArray {
    return UIntArray(size) { index -> this[index] }
}

```

Returns an array of type [UIntArray], which is a copy of this array where each element is an unsigned reinterpretation of the corresponding element of this array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly public inline fun
IntArray.toUIntArray(): UIntArray {
    return UIntArray(this.copyOf())
}

```

Returns an array of ULong containing all of the elements of this generic array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun Array<out ULong>.toULongArray():
ULongArray {
    return ULongArray(size) { index -> this[index] }
}

```

Returns an array of type [ULongArray], which is a copy of this array where each element is an unsigned reinterpretation of the corresponding element of this array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly public inline fun
LongArray.toULongArray(): ULongArray {
    return ULongArray(this.copyOf())
}

```

Returns an array of UShort containing all of the elements of this generic array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes public fun Array<out UShort>.toUShortArray():
UShortArray {
    return UShortArray(size) { index -> this[index] }
}

```

Returns an array of type [UShortArray], which is a copy of this array where each element is an unsigned reinterpretation of the corresponding element of this array.

```

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly public inline fun
ShortArray.toUShortArray(): UShortArray {
    return UShortArray(this.copyOf())
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element. If any two elements are equal, the last one gets added to the map. The returned map preserves the entry iteration order of the original array.


```

\n * @sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UIntArray.associateWith(valueSelector: (UInt) -> V): Map<UInt, V> {\n    val result = LinkedHashMap<UInt,
V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a
[Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function
applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The
returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
ULongArray.associateWith(valueSelector: (ULong) -> V): Map<ULong, V> {\n    val result =
LinkedHashMap<ULong, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one
gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UByteArray.associateWith(valueSelector: (UByte) -> V): Map<UByte, V> {\n    val result =
LinkedHashMap<UByte, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one
gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UShortArray.associateWith(valueSelector: (UShort) -> V): Map<UShort, V> {\n    val result =
LinkedHashMap<UShort, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function
applied to that key.\n * \n * If any
two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M :
MutableMap<in UInt, in V>> UIntArray.associateWithTo(destination: M, valueSelector: (UInt) -> V): M {\n    for
(element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n *
where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If
any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <V, M : MutableMap<in ULong, in V>> ULongArray.associateWithTo(destination: M, valueSelector: (ULong)
-> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element
of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied
to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
@sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M :
MutableMap<in UByte, in V>> UByteArray.associateWithTo(destination: M, valueSelector: (UByte) -> V): M {\n    for
(element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return
destination\n}\n\n/**\n * Populates

```

and returns the [destination] mutable map with key-value pairs for each element of the given array, \n * where key is the element itself and value is provided by the [valueSelector] function applied to that key. \n * \n * If any two elements are equal, the last one overwrites the former value in the map. \n * \n * @sample samples.collections.Collections.Transformations.associateWithTo

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in UShort, in V>> UShortArray.associateWithTo(destination: M, valueSelector: (UShort) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMap
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.flatMap(transform: (UInt) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMap
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.flatMap(transform: (ULong) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMap
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.flatMap(transform: (UByte) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element of original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMap
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.flatMap(transform: (UShort) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element \n * and its index in the original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.flatMapIndexed(transform: (index: Int, UInt) -> Iterable<R>): List<R> {\n    return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element \n * and its index in the original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.flatMapIndexed(transform: (index: Int, ULong) -> Iterable<R>): List<R> {\n    return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element \n * and its index in the original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.flatMapIndexed(transform: (index: Int, UByte) -> Iterable<R>): List<R> {\n    return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being invoked on each element \n * and its index in the original array. \n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed
```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.flatMapIndexed(transform: (index: Int, UShort) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its
index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapIndexedTo(destination: C, transform: (index: Int, UInt) ->
Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++, element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapIndexedTo(destination:
C, transform: (index: Int, ULong) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(index++, element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapIndexedTo(destination: C, transform: (index: Int, UByte) ->
Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++, element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each
element\n * and its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.flatMapIndexedTo(destination: C, transform: (index: Int, UShort) ->
Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++, element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapTo(destination: C, transform: (UInt) -> Iterable<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapTo(destination: C, transform: (ULong) -> Iterable<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapTo(destination: C, transform: (UByte) -> Iterable<R>): C {\n    for
(element in this) {\n        val list =
transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements
yielded from results of [transform] function being invoked on each element of original array, to the given

```

```

[destination].\n * \n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public
inline fun <R, C : MutableCollection<in R>> UShortArray.flatMapTo(destination: C, transform: (UShort) ->
Iterable<R>): C {\n   for (element in this) {\n     val list = transform(element)\n     destination.addAll(list)\n   }\n   return destination\n }\n\n /**\n  * Groups elements of the original array by the key returned by the given
[keySelector] function\n  * applied to each element and returns a map where each group key is associated with a list
of corresponding elements.\n  * \n  * The returned map preserves the entry iteration order of the keys produced from
the original array.\n  * \n  * @sample samples.collections.Collections.Transformations.groupBy\n
*\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun <K>
UIntArray.groupBy(keySelector: (UInt) -> K): Map<K, List<UInt>> {\n   return groupByTo(LinkedHashMap<K,
MutableList<UInt>>(), keySelector)\n }\n\n /**\n  * Groups elements of the original array by the key returned by the
given [keySelector] function\n  * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n  * \n  * The returned map preserves the entry iteration order of the keys produced
from the original array.\n  * \n  * @sample samples.collections.Collections.Transformations.groupBy\n
*\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun <K>
ULongArray.groupBy(keySelector: (ULong) -> K): Map<K, List<ULong>> {\n   return
groupByTo(LinkedHashMap<K, MutableList<ULong>>(), keySelector)\n }\n\n /**\n  * Groups elements of the
original array by the key returned by the given [keySelector]
function\n  * applied to each element and returns a map where each group key is associated with a list of
corresponding elements.\n  * \n  * The returned map preserves the entry iteration order of the keys produced from the
original array.\n  * \n  * @sample samples.collections.Collections.Transformations.groupBy\n
*\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun <K>
UByteArray.groupBy(keySelector: (UByte) -> K): Map<K, List<UByte>> {\n   return
groupByTo(LinkedHashMap<K, MutableList<UByte>>(), keySelector)\n }\n\n /**\n  * Groups elements of the
original array by the key returned by the given [keySelector] function\n  * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n  * \n  * The returned map preserves the
entry iteration order of the keys produced from the original array.\n  * \n  * @sample
samples.collections.Collections.Transformations.groupBy\n
*\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public
inline fun <K> UShortArray.groupBy(keySelector: (UShort) -> K): Map<K, List<UShort>> {\n   return
groupByTo(LinkedHashMap<K, MutableList<UShort>>(), keySelector)\n }\n\n /**\n  * Groups values returned by
the [valueTransform] function applied to each element of the original array\n  * by the key returned by the given
[keySelector] function applied to the element\n  * and returns a map where each group key is associated with a list of
corresponding values.\n  * \n  * The returned map preserves the entry iteration order of the keys produced from the
original array.\n  * \n  * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun <K, V>
UIntArray.groupBy(keySelector: (UInt) -> K, valueTransform: (UInt) -> V): Map<K, List<V>> {\n   return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n }\n\n /**\n  * Groups values
returned by the [valueTransform] function applied to each element of the original array\n  * by the
key returned by the given [keySelector] function applied to the element\n  * and returns a map where each group key
is associated with a list of corresponding values.\n  * \n  * The returned map preserves the entry iteration order of the
keys produced from the original array.\n  * \n  * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\n @SinceKotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun <K, V>
ULongArray.groupBy(keySelector: (ULong) -> K, valueTransform: (ULong) -> V): Map<K, List<V>> {\n   return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n }\n\n /**\n  * Groups values
returned by the [valueTransform] function applied to each element of the original array\n  * by the key returned by
the given [keySelector] function applied to the element\n  * and returns

```

a map where each group key is associated with a list of corresponding values. The returned map preserves the entry iteration order of the keys produced from the original array.

```

@sample
samples.collections.Collections.Transformations.groupByKeysAndValues
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <K, V>
UByteArray.groupBy(keySelector: (UByte) -> K, valueTransform: (UByte) -> V): Map<K, List<V>> {n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)n}n/n/**n * Groups values
returned by the [valueTransform] function applied to each element of the original arrayn * by the key returned by
the given [keySelector] function applied to the elementn * and returns a map where each group key is associated
with a list of corresponding values.n * n * The returned map preserves the entry iteration order of the keys
produced from the original array.n * n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <K, V>
UShortArray.groupBy(keySelector: (UShort) -> K, valueTransform: (UShort) -> V): Map<K, List<V>> {n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)n}n/n/**n * Groups elements
of the original array by the key returned by the given [keySelector] functionn * applied to each element and puts to
the [destination] map each group key associated with a list of corresponding elements.n * n * @return The
[destination] map.n * n * @sample samples.collections.Collections.Transformations.groupBy
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <K, M :
MutableMap<in K, MutableList<UInt>>> UIntArray.groupByTo(destination: M, keySelector: (UInt) -> K): M {n
for (element in this) {n val key = keySelector(element)n val
list = destination.getOrPut(key) { ArrayList<UInt>() }n list.add(element)n }n return
destinationn}n/n/**n * Groups elements of the original array by the key returned by the given [keySelector]
functionn * applied to each element and puts to the [destination] map each group key associated with a list of
corresponding elements.n * n * @return The [destination] map.n * n * @sample
samples.collections.Collections.Transformations.groupBy
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <K, M :
MutableMap<in K, MutableList<ULong>>> ULongArray.groupByTo(destination: M, keySelector: (ULong) -> K):
M {n for (element in this) {n val key = keySelector(element)n val list = destination.getOrPut(key) {
ArrayList<ULong>() }n list.add(element)n }n return destinationn}n/n/**n * Groups elements of the
original array by the key returned by the given [keySelector] functionn * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.n * n *
@return The [destination] map.n * n * @sample samples.collections.Collections.Transformations.groupBy
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <K, M :
MutableMap<in K, MutableList<UByte>>> UByteArray.groupByTo(destination: M, keySelector: (UByte) -> K):
M {n for (element in this) {n val key = keySelector(element)n val list = destination.getOrPut(key) {
ArrayList<UByte>() }n list.add(element)n }n return destinationn}n/n/**n * Groups elements of the
original array by the key returned by the given [keySelector] functionn * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.n * n * @return The
[destination] map.n * n * @sample samples.collections.Collections.Transformations.groupBy
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic
inline fun <K, M : MutableMap<in K, MutableList<UShort>>> UShortArray.groupByTo(destination: M,
keySelector: (UShort) -> K): M {n for (element in this) {n val key = keySelector(element)n val list =
destination.getOrPut(key) { ArrayList<UShort>() }n list.add(element)n }n return destinationn}n/n/**n
* Groups values returned by the [valueTransform] function applied to each element of the original arrayn * by the
key returned by the given [keySelector] function applied to the elementn * and puts to the [destination] map each
group key associated with a list of corresponding values.n * n * @return The [destination] map.n * n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues
*/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun <K, V,

```

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M : MutableMap<in K, MutableList<V>>> UIntArray.groupByTo(destination:
M, keySelector: (UInt) -> K, valueTransform: (UInt) -> V): M {\n  for (element in this) {\n    val key =
keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Groups values returned by the
[valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a
list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V,
M : MutableMap<in K, MutableList<V>>> ULongArray.groupByTo(destination: M, keySelector: (ULong) -> K,
valueTransform: (ULong) -> V): M {\n  for (element in this) {\n    val
key = keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Groups values returned by the
[valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a
list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V,
M : MutableMap<in K, MutableList<V>>> UByteArray.groupByTo(destination: M, keySelector: (UByte) -> K,
valueTransform: (UByte) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list
= destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n
  }\n  return destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each
element of the original array\n * by the key returned by the given [keySelector] function applied to the element\n *
and puts to the [destination] map each group key associated with a list of corresponding values.\n * \n * @return
The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V,
M : MutableMap<in K, MutableList<V>>> UShortArray.groupByTo(destination: M, keySelector: (UShort) -> K,
valueTransform: (UShort) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list
= destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return
destination\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.map(transform: (UInt) -> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.map(transform: (ULong) -> R): List<R> {\n  return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UByteArray.map(transform: (UByte) -> R): List<R> {\n  return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.map(transform: (UShort) -> R): List<R> {\n  return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each

```

element and its index in the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of the transform applied to the element.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
```

```
fun <R> UIntArray.mapIndexed(transform: (index: Int, UInt) -> R): List<R> {\n    return\n    mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the\n * given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function\n * that takes the index of an element and the element itself\n * and returns the result of the transform applied to the\n * element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun <R> ULongArray.mapIndexed(transform: (index: Int, ULong) -> R): List<R> {\n    return\n    mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the\n * given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function\n * that takes the index of an element and the element itself\n * and returns the result of the transform applied to the\n * element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun <R> UByteArray.mapIndexed(transform: (index: Int, UByte) -> R): List<R> {\n    return\n    mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the\n * given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function\n * that takes the index of an element and the element itself\n * and returns the result of the transform applied to the\n * element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun <R> UShortArray.mapIndexed(transform: (index: Int, UShort) -> R): List<R> {\n    return\n    mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Applies the given [transform] function to each\n * element and its index in the original array\n * and appends the results to the given [destination].\n * @param\n * [transform] function that takes the index of an element and\n * the element itself\n * and returns the result of the transform applied to the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C : MutableCollection<in R>> UIntArray.mapIndexedTo(destination: C, transform: (index: Int, UInt) -> R): C {\n    var\n    index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an element and the element\n * itself\n * and returns the result of the transform applied to the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C : MutableCollection<in R>> ULongArray.mapIndexedTo(destination: C, transform: (index: Int, ULong) -> R): C {\n    var\n    index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n * Applies the given [transform]\n * function to each element and its index in the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an element and the element itself\n * and returns the result of\n * the transform applied to the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C : MutableCollection<in R>> UByteArray.mapIndexedTo(destination: C, transform: (index: Int, UByte) -> R): C {\n    var\n    index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return\n    destination\n}\n\n/**\n * Applies the given [transform] function\n * to each element and its index in the original array\n * and appends the results to the given [destination].\n * @param [transform] function that takes the index of an\n * element and the element itself\n * and returns\n * the result of the transform applied to the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C : MutableCollection<in R>> UShortArray.mapIndexedTo(destination: C, transform: (index: Int, UShort) -> R): C {\n    var\n    index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return\n    destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and\n * appends the results to the given [destination].\n
```

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.mapTo(destination: C, transform: (UInt) -> R): C {\n  for (item in this)\n  destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R, C : MutableCollection<in R>> ULongArray.mapTo(destination: C, transform: (ULong) -> R): C {\n
for (item in this)\n  destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given
[transform] function to each element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.mapTo(destination: C, transform: (UByte) -> R): C {\n  for (item in this)\n
destination.add(transform(item))\n  return destination\n}\n\n/**\n * Applies the given [transform] function to
each element of the original array\n * and appends the results to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.mapTo(destination:
C, transform: (UShort) -> R): C {\n  for (item in this)\n  destination.add(transform(item))\n  return
destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an
[IndexValue] containing the index of that element and the element itself.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.withIndex():
Iterable<IndexedValue<UInt>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.withIndex():
Iterable<IndexedValue<ULong>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.withIndex():
Iterable<IndexedValue<UByte>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the
element itself.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.withIndex():
Iterable<IndexedValue<UShort>> {\n  return IndexingIterable { iterator() }\n}\n\n/**\n * Returns `true` if all
elements match the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.all(predicate: (UInt) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.all(predicate: (ULong) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.all(predicate: (UByte) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.all(predicate: (UShort) -> Boolean): Boolean {\n  for (element in this) if (!predicate(element))
return false\n  return true\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.any(): Boolean {\n  return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one element.\n

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* \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one
element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one
element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if at least one element matches
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.any(predicate: (UInt) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return true\n
return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.any(predicate: (ULong) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns
`true` if at least one element matches the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.any(predicate: (UByte) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.any(predicate: (UShort) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
true\n    return false\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.count(predicate: (UInt)
-> Boolean): Int {\n    var count = 0\n    for (element in this) if (predicate(element)) ++count\n    return
count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.count(predicate: (ULong) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.count(predicate: (UByte) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.count(predicate: (UShort)
-> Boolean): Int {\n    var count = 0\n    for (element in this) if (predicate(element)) ++count\n    return
count\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n *
to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n
* @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.fold(initial: R, operation: (acc: R, UInt) -> R): R {\n    var accumulator = initial\n    for (element in this)
accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting
with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *
\n * Returns the specified [initial] value if the array is empty.\n

```

* \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.fold(initial: R, operation: (acc: R, ULong) -> R): R {\n  var accumulator = initial\n  for (element in
this) accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n\npublic inline fun <R>
UByteArray.fold(initial: R, operation: (acc: R, UByte) -> R): R {\n  var accumulator = initial\n
for (element in this) accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from left to right\n * to current accumulator
value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R> UShortArray.fold(initial: R, operation: (acc: R, UShort) -> R): R {\n  var accumulator = initial\n
for (element in this) accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and
each element with its index in the original array.\n * \n * Returns the specified [initial]
value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value\n * and the element itself, and calculates the next accumulator value.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): R {\n  var index = 0\n  var
accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator, element)\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ULongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): R {\n  var index
= 0\n  var accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator, element)\n
return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left
to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): R {\n  var index = 0\n  var
accumulator = initial\n
for (element in this) accumulator = operation(index++, accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from left to right\n * to current
accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value
if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): R {\n  var index = 0\n  var
accumulator = initial\n  for (element in this) accumulator = operation(index++, accumulator, element)\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n
*/\n

```

* to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.foldRight(initial: R, operation: (UInt, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator =
initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the
next accumulator value.\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ULongArray.foldRight(initial: R, operation: (ULong, acc: R) -> R): R {\n    var index = lastIndex\n
var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right
to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array
is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the
next accumulator value.\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.foldRight(initial: R, operation: (UByte, acc: R) -> R): R {\n    var index = lastIndex\n    var
accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n
    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if
the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and
calculates the next accumulator value.\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.foldRight(initial: R, operation: (UShort, acc: R) -> R): R {\n    var index = lastIndex\n    var
accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right
to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the
array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself\n * and
current accumulator value, and calculates the next accumulator value.\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.foldRightIndexed(initial: R, operation: (index: Int, UInt, acc: R) -> R): R {\n    var index = lastIndex\n
var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n
        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n
* \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself\n * and current accumulator value, and calculates the next accumulator
value.\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> ULongArray.foldRightIndexed(initial: R, operation: (index: Int, ULong, acc: R) -> R): R {\n    var index =
lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index),
accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation] from right to left\n * to each element with its index in the original array and current
accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself\n * and current accumulator value, and calculates the
next accumulator value.\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>

```

```

ByteArray.foldRightIndexed(initial: R, operation:
(index: Int, UByte, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun <R>
UShortArray.foldRightIndexed(initial: R, operation: (index: Int, UShort, acc: R) -> R): R {
    var index =
lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index),
accumulator)
        --index
    }
    return accumulator
}

```

Performs the given [action] on each element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public inline fun UIntArray.forEach(action: (UInt) -> Unit): Unit {
    for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ULongArray.forEach(action: (ULong) -> Unit): Unit {
    for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UByteArray.forEach(action: (UByte) -> Unit): Unit {
    for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline
fun UShortArray.forEach(action: (UShort) -> Unit): Unit {
    for (element in this) action(element)
}

```

Performs the given [action] on each element, providing sequential index with the element. @param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UIIntArray.forEachIndexed(action: (index: Int, UInt) -> Unit): Unit {
    var index = 0
    for (item in this)
action(index++, item)
}

```

Performs the given [action] on each element, providing sequential index with the element. @param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ULongArray.forEachIndexed(action: (index: Int, ULong) -> Unit): Unit {
    var index
= 0
    for (item in this) action(index++, item)
}

```

Performs the given [action] on each element, providing sequential index with the element. @param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UByteArray.forEachIndexed(action: (index: Int, UByte) -> Unit): Unit {
    var index = 0
    for (item in this)
action(index++, item)
}

```

Performs the given [action] on each element, providing sequential index with the element. @param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UShortArray.forEachIndexed(action: (index: Int, UShort) -> Unit): Unit {
    var index = 0
    for (item in this)
action(index++, item)
}

```

Use `maxOrNull` instead. ReplaceWith("this.maxOrNull()") @DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun UIntArray.max(): UInt? {
    return maxOrNull()
}

```

Use `maxOrNull` instead. ReplaceWith("this.maxOrNull()") @DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5", hiddenSince = "1.6")

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes
public fun ULongArray.max(): ULong? {
    return maxOrNull()
}

```

```

ReplaceWith("this.maxOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.max():
UByte? {\n    return maxOrNull()\n}\n\n@Deprecated("Use maxOrNull instead."),
ReplaceWith("this.maxOrNull()")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.max(): UShort? {\n    return maxOrNull()\n}\n\n@Deprecated("Use maxByOrNull instead.",
ReplaceWith("this.maxByOrNull(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> UIntArray.maxBy(selector: (UInt) -> R): UInt? {\n    return
maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead."),
ReplaceWith("this.maxByOrNull(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> ULongArray.maxBy(selector: (ULong) -> R): ULong? {\n    return
maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead."),
ReplaceWith("this.maxByOrNull(selector)")\n@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> UByteArray.maxBy(selector: (UByte) -> R): UByte? {\n    return
maxByOrNull(selector)\n}\n\n@Deprecated("Use maxByOrNull instead."),
ReplaceWith("this.maxByOrNull(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> UShortArray.maxBy(selector: (UShort) -> R): UShort? {\n    return
maxByOrNull(selector)\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UIntArray.maxByOrNull(selector: (UInt) -> R): UInt? {\n    if (isEmpty()) return
null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var
maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if
(maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.maxByOrNull(selector: (ULong) -> R): ULong? {\n    if (isEmpty()) return null\n
var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue =
selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem
= e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.maxByOrNull(selector: (UByte) -> R): UByte? {\n    if (isEmpty()) return null\n
var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue =
selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem
= e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first

```

```

element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.maxByOrNull(selector: (UShort) -> R): UShort? {\n if (isEmpty()) return null\n
var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)
{\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the largest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if
the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOf(selector: (UInt) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.maxOf(selector: (ULong) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOf(selector: (UByte) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue
= maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOf(selector: (UShort) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOf(selector: (UInt) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]

```

```

function is `NaN`, the returned result is `NaN`. \n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOf(selector: (ULong) -> Float): Float {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`. \n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOf(selector: (UByte) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var
maxValue = selector(this[0])\n
    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`. \n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOf(selector: (UShort) -> Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector]
function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UIntArray.maxOf(selector: (UInt) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> ULongArray.maxOf(selector: (ULong) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.maxOf(selector: (UByte) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (maxValue < v) {\n
            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.maxOf(selector: (UShort) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOfOrNull(selector: (UInt) -> Double): Double? {\n  if (isEmpty()) return null\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n
  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.maxOfOrNull(selector:
(ULong) -> Double): Double? {\n  if (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in
1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n  }\n  return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOfOrNull(selector: (UByte) -> Double): Double? {\n  if (isEmpty()) return null\n  var maxValue
= selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue,
v)\n  }\n  return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOfOrNull(selector: (UShort) -> Double): Double? {\n  if (isEmpty()) return null\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue =
maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.maxOfOrNull(selector: (UInt) -> Float): Float? {\n  if (isEmpty()) return null\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    maxValue =
maxOf(maxValue, v)\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.maxOfOrNull(selector: (ULong) -> Float): Float? {\n  if (isEmpty()) return

```



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null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values\n * produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\n\nByteArray.maxOfOrNull(selector: (UByte) -> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue =\n    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by\n [selector] function is `NaN`, the returned result is `NaN`.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\n\nUShortArray.maxOfOrNull(selector: (UShort) -> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue =\n    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n\ninline fun <R : Comparable<R>> UIntArray.maxOfOrNull(selector: (UInt) -> R): R? {\n    if (isEmpty()) return\n    null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n        (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value\n * among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no\n * elements.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :\n\nComparable<R>> ULongArray.maxOfOrNull(selector: (ULong) -> R): R? {\n    if (isEmpty()) return null\n    var\n    maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n           \n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the\n * array or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :\n\nComparable<R>> UByteArray.maxOfOrNull(selector: (UByte) -> R): R? {\n    if (isEmpty()) return null\n    var\n    maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n           \n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values\n * produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n\ninline fun <R : Comparable<R>> UShortArray.maxOfOrNull(selector: (UShort) -> R): R? {\n    if (isEmpty())\n    return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n        (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value\n * according to the provided [comparator]\n * among all values produced by [selector] function applied to each\n * element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n\nUIntArray.maxOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v

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= selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n        maxValue = v\n    }\n }\n
return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws\n NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n ULongArray.maxOfWith(comparator: Comparator<in R>, selector: (ULong) -> R): R {\n    if (isEmpty()) throw\n NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return\n maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws\n NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UByteArray.maxOfWith(comparator: Comparator<in R>, selector: (UByte) -> R): R {\n    if (isEmpty()) throw\n NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return\n maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n * @throws\n NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n inline fun <R> UShortArray.maxOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n    if\n (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return\n maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UIntArray.maxOfWithOrNull(comparator: Comparator<in R>, selector:\n (UInt) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return\n maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n ULongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n    if (isEmpty())\n return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return\n maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {\n    if (isEmpty())\n return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if\n (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return\n maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]\n function applied to each element in the array or `null` if there are no elements.\n

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n
if (isEmpty()) return null\n var max = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(max, v) < 0) {\n max = v\n }\n }\n return
max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxOrNull(): UInt? {\n if
(isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max
= e\n }\n return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.maxOrNull(): ULong? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns the largest
element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.maxOrNull(): UByte? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns the largest element or `null`
if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.maxOrNull(): UShort? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex)
{\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n@Deprecated("Use maxWithOrNull
instead.", ReplaceWith("this.maxWithOrNull(comparator)"))\n@DeprecatedSinceKotlin(warningSince
= "1.4", errorSince = "1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxWith(comparator:
Comparator<in UInt>): UInt? {\n return maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull
instead.", ReplaceWith("this.maxWithOrNull(comparator)"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.maxWith(comparator: Comparator<in ULong>): ULong? {\n return
maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull instead.",
ReplaceWith("this.maxWithOrNull(comparator)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.maxWith(comparator: Comparator<in UByte>): UByte? {\n return
maxWithOrNull(comparator)\n}\n\n@Deprecated("Use maxWithOrNull
instead.", ReplaceWith("this.maxWithOrNull(comparator)"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.maxWith(comparator: Comparator<in UShort>): UShort? {\n return
maxWithOrNull(comparator)\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxWithOrNull(comparator:
Comparator<in UInt>): UInt? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.maxWithOrNull(comparator: Comparator<in ULong>): ULong? {\n if (isEmpty()) return null\n
var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max =
e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.maxWithOrNull(comparator:
Comparator<in UByte>): UByte? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.maxWithOrNull(comparator:
Comparator<in UShort>): UShort?
    {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n@Deprecated("Use minOrNull instead.\",
ReplaceWith("this.minOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.min(): UInt?
{\n    return minOrNull()\n}\n\n@Deprecated("Use minOrNull instead.\",
ReplaceWith("this.minOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.min():
ULong? {\n    return minOrNull()\n}\n\n@Deprecated("Use minOrNull instead.\",
ReplaceWith("this.minOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
    UByteArray.min(): UByte? {\n    return minOrNull()\n}\n\n@Deprecated("Use minOrNull instead.\",
ReplaceWith("this.minOrNull()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.5",
hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.min():
UShort? {\n    return minOrNull()\n}\n\n@Deprecated("Use minByOrNull instead.\",
ReplaceWith("this.minByOrNull(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> UIntArray.minBy(selector: (UInt) -> R): UInt? {\n    return
minByOrNull(selector)\n}\n\n@Deprecated("Use minByOrNull instead.\",
ReplaceWith("this.minByOrNull(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
    inline fun <R : Comparable<R>> ULongArray.minBy(selector: (ULong) -> R): ULong? {\n    return
minByOrNull(selector)\n}\n\n@Deprecated("Use minByOrNull instead.\",
ReplaceWith("this.minByOrNull(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> UByteArray.minBy(selector: (UByte) -> R): UByte? {\n    return
minByOrNull(selector)\n}\n\n@Deprecated("Use minByOrNull instead.\",
ReplaceWith("this.minByOrNull(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5", hiddenSince =
"1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
<R : Comparable<R>> UShortArray.minBy(selector: (UShort) -> R): UShort? {\n    return
minByOrNull(selector)\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or
`null`
if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UIntArray.minByOrNull(selector: (UInt) -> R): UInt? {\n    if (isEmpty()) return null\n    var
minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return minElem\n    var minValue =
selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (minValue > v)
{\n            minElem = e\n            minValue = v\n        }\n    }\n    return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.minByOrNull(selector:

```

```

(ULong) -> R): ULong? {\n  if (isEmpty()) return null\n  var minElem = this[0]\n  val lastIndex =
this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue = selector(minElem)\n  for (i in
1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n      minElem = e\n
minValue = v\n    }\n  }\n  return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value
of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.minByOrNull(selector: (UByte) -> R): UByte? {\n  if (isEmpty()) return null\n
var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue =
selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v) {\n
minElem = e\n    minValue = v\n    }\n  }\n  return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function
or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.minByOrNull(selector: (UShort) -> R): UShort? {\n  if (isEmpty()) return null\n
var minElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return minElem\n  var minValue =
selector(minElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (minValue > v)
{\n      minElem = e\n      minValue = v\n    }\n  }\n  return minElem\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector]
function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`,
the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.minOf(selector: (UInt) -> Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =
minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.minOf(selector: (ULong) -> Double): Double {\n  if (isEmpty()) throw
NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.minOf(selector: (UByte)
-> Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n
for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.minOf(selector: (UShort) -> Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =

```



```

array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.minOf(selector: (UByte)
-> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n
return minValue\n}\n\n**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.minOf(selector: (UShort) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n**\n *
Returns
the smallest value among all values produced by [selector] function\n * applied to each element in the array or
`null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result
is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.minOfOrNull(selector: (UInt) -> Double): Double? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n
}\n return minValue\n}\n\n**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.minOfOrNull(selector: (ULong) -> Double): Double? {\n if (isEmpty()) return null\n
var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.minOfOrNull(selector: (UByte) -> Double): Double? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n *
\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.minOfOrNull(selector: (UShort) -> Double): Double? {\n if (isEmpty()) return null\n var minValue
= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n
}\n return minValue\n}\n\n**\n * Returns the smallest value among all values produced by [selector]
function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.minOfOrNull(selector: (UInt) -> Float): Float? {\n if (isEmpty()) return null\n var minValue =

```

```
selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]\n function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun ULongArray.minOfOrNull(selector: (ULong) -> Float): Float? {\n if (isEmpty()) return null\n var\n minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =\n minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of\n values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
UByteArray.minOfOrNull(selector: (UByte) -> Float): Float? {\n if (isEmpty()) return null\n var minValue =\n selector(this[0])\n for
```

```
(i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```
UShortArray.minOfOrNull(selector: (UShort) -> Float): Float? {\n if (isEmpty()) return null\n var minValue =\n selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * \n * applied to each element in the array or `null`\n
```

```
if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
```

```
Comparable<R>> UIntArray.minOfOrNull(selector: (UInt) -> R): R? {\n if (isEmpty()) return null\n var\n minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     if (minValue > v) {\n         minValue = v\n     }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values\n produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
```

```
Comparable<R>> ULongArray.minOfOrNull(selector: (ULong) -> R): R? {\n if (isEmpty())\n return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     if\n (minValue > v) {\n         minValue = v\n     }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value\n among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no\n elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
```

```
Comparable<R>> UByteArray.minOfOrNull(selector: (UByte) -> R): R? {\n if (isEmpty()) return null\n var\n minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     if (minValue > v) {\n         minValue = v\n     }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values\n produced by [selector] function\n * applied to each element\n
```

```
in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
```



```

Comparable<R>> UShortArray.minOfOrNull(selector: (UShort) -> R): R? {\n  if (isEmpty()) return null\n  var\n  minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (minValue > v) {\n      minValue = v\n    }\n  }\n  return minValue}\n\n/**\n * Returns the smallest value according to the\n provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n *\n * @throws NoSuchElementException if the array is empty.\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\n <R> UIntArray.minOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\n  if (isEmpty()) throw\n  NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n    selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values\n produced by [selector] function applied to each element in the array.\n *\n * @throws NoSuchElementException if\n the array is empty.\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n ULongArray.minOfWith(comparator: Comparator<in R>, selector: (ULong) -> R): R {\n  if (isEmpty()) throw\n  NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among\n all values produced by [selector] function applied to each element in the array.\n *\n * @throws\n NoSuchElementException if the array is empty.\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UByteArray.minOfWith(comparator: Comparator<in R>, selector: (UByte) -> R): R {\n  if (isEmpty()) throw\n  NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n    selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue}\n\n/**\n * Returns the smallest value according to the\n provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n *\n * @throws\n NoSuchElementException if the array is empty.\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n UShortArray.minOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n  if (isEmpty()) throw\n  NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n    selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values\n produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n inline fun <R> UIntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UInt) -> R): R? {\n  if\n  (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n    selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values\n produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\n ULongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n  if\n  (isEmpty()) return null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n    selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n      minValue = v\n    }\n  }\n  return\n  minValue}\n
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minValue}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.minOrNull(): UInt? {\n if
(isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.minOrNull(): ULong? {\n if
(isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min =
e\n }\n return min}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.minOrNull(): UByte? {\n if
(isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min =
e\n }\n return min}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.minOrNull(): UShort? {\n if
(isEmpty()) return
null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return
min}\n\n@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.minWith(comparator: Comparator<in UInt>): UInt? {\n return
minWithOrNull(comparator)\n}\n\n@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.minWith(comparator: Comparator<in ULong>): ULong? {\n return
minWithOrNull(comparator)\n}\n\n@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.minWith(comparator: Comparator<in UByte>): UByte? {\n return
minWithOrNull(comparator)\n}\n\n@Deprecated("Use minWithOrNull instead.")
ReplaceWith("this.minWithOrNull(comparator)")\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince
= "1.5", hiddenSince = "1.6")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.minWith(comparator: Comparator<in UShort>): UShort? {\n return
minWithOrNull(comparator)\n}\n\n/**\n * Returns the first element having the smallest value according to the
provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.minWithOrNull(comparator:
Comparator<in UInt>): UInt? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n

```

```

val e = this[i]\n    if (comparator.compare(min, e) > 0) min = e\n
    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.minWithOrNull(comparator:
Comparator<in ULong>): ULong? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n
    val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the
first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.minWithOrNull(comparator:
Comparator<in UByte>): UByte? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n
    val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the
first element having
the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.minWithOrNull(comparator:
Comparator<in UShort>): UShort? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n
    val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns
`true` if the array has no elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n *
@sample samples.collections.Collections.Aggregates.none\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns
`true` if the array has no elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n *
@sample samples.collections.Collections.Aggregates.none\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.none(): Boolean {\n    return isEmpty()\n}\n\n/**\n * Returns `true` if no elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.none(predicate: (UInt) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n
* \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.none(predicate: (ULong) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.none(predicate: (UByte) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return
false\n    return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.none(predicate:
(UShort) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return false\n    return
true\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.onEach(action: (UInt) -> Unit): UIntArray {\n    return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

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ULongArray.onEach(action: (ULong) -> Unit): ULongArray {
    return apply { for (element in this)
    action(element) }
}

/**
 * Performs the given [action] on each element and returns the array itself
 afterwards.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UByteArray.onEach(action: (UByte) -> Unit): UByteArray
 {
    return apply { for (element in this) action(element) }
}

/**
 * Performs the given [action] on each
 element and returns the array itself afterwards.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.onEach(action: (UShort) -> Unit): UShortArray {
    return apply { for (element in this)
    action(element) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the
 element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element
 and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.onEachIndexed(action: (index: Int, UInt) -> Unit): UIntArray {
    return apply {
    forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index
 with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the
 element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.onEachIndexed(action: (index: Int, ULong) -> Unit): ULongArray {
    return apply {
    forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index
 with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an
 element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UByteArray.onEachIndexed(action: (index: Int, UByte) -> Unit): UByteArray {
    return apply {
    forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index
 with the
 element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element
 and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.onEachIndexed(action: (index: Int, UShort) -> Unit): UShortArray {
    return apply {
    forEachIndexed(action) }
}

/**
 * Accumulates value starting with the first element and applying [operation]
 from left to right
 * to current accumulator value and each element.
 * Throws an exception if this array is
 empty. If the array can be empty in an expected way,
 please use [reduceOrNull] instead. It returns `null` when its
 receiver is empty.
 * @param [operation] function that takes current accumulator value and an element,
 * and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun UIntArray.reduce(operation: (acc: UInt, UInt) -> UInt): UInt {
    if (isEmpty())
        throw
UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in
    1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

/**
 * Accumulates value starting with the first element and applying [operation] from left to right
 * to current
 accumulator value and each element.
 * Throws an exception if this array is empty. If the array can be empty
 in an expected way,
 * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function that takes current accumulator value and an element,
 * and calculates the next
 accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun ULongArray.reduce(operation: (acc: ULong, ULong) -> ULong): ULong {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for
(index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return

```

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accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UByteArray.reduce(operation: (acc: UByte, UByte) -> UByte): UByte {\n    if (isEmpty())\n        throw
UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in
1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with the first element and applying [operation] from left to right\n * to current
accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty
in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n *
@param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduce(operation:
(acc: UShort, UShort) -> UShort): UShort {\n    if (isEmpty())\n        throw
UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in
1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with the first element and applying [operation] from left to right\n * to current
accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.reduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt {\n    if (isEmpty())\n
throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for
(index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull]
instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduce\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong {\n    if (isEmpty())\n
throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for
(index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull]
instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value and the element itself,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte {\n    if (isEmpty())\n
throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for

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(index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element,

current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and
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calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceIndexedOrNull(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.reduceIndexedOrNull(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceIndexedOrNull(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceIndexedOrNull(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first
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element and applying [operation] from left to right to current accumulator value and each element. Returns null if the array is empty. @param [operation] function that takes current accumulator value and an element and calculates the next accumulator value. @sample

```

samples.collections.Collections.Aggregates.reduceOrNull
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceOrNull(operation: (acc: UInt, UInt) -> UInt): UInt? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.\n * Returns null if the array is empty.\n * @param [operation] function that takes current accumulator value and an element and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.reduceOrNull
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.reduceOrNull(operation: (acc: ULong, ULong) -> ULong): ULong? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.\n * Returns null if the array is empty.\n * @param [operation] function that takes current accumulator value and an element and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.reduceOrNull
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceOrNull(operation: (acc: UByte, UByte) -> UByte): UByte? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.\n * Returns null if the array is empty.\n * @param [operation] function that takes current accumulator value and an element and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.reduceOrNull
*/\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceOrNull(operation: (acc: UShort, UShort) -> UShort): UShort? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.\n * Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns null when its receiver is empty.\n * @param [operation] function that takes an element and current accumulator value and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.reduceRight
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceRight(operation: (UInt, acc: UInt) -> UInt): UInt {\n    var index = lastIndex\n    if (index < 0)\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.\n * Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns null when its receiver is empty.\n * @param [operation] function that takes an element and current accumulator value and calculates the next

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accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceRight(operation: (UByte, acc: UByte) -> UByte): UByte {\n  var index = lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceRight(operation: (UShort, acc: UShort) -> UShort): UShort {\n  var index = lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--), accumulator)\n  }\n  return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the index
of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n *
\n * @sample samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRightIndexed(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt {\n  var index = lastIndex\n
if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator =
get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index), accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull]
instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceRightIndexed(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong {\n  var index =
lastIndex\n  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n  var
accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(index, get(index),
accumulator)\n    --index\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last

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element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value. @sample samples.collections.Collections.Aggregates.reduceRight

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*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UByteArray.reduceRightIndexed(operation: (index: Int, UByte, acc: UByte) -> UByte): UByte {n  var index =
lastIndexn  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")n  var
accumulator = get(index--n  while (index >= 0) {n    accumulator = operation(index, get(index),
accumulator)n    --indexn  }n  return accumulatorn}n/n/**n * Accumulates value starting with the last
element and applying [operation]
from right to left to each element with its index in the original array and current accumulator value.
Throws an exception if this array is empty. If the array can be empty in an expected way, please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty. @param [operation]
function that takes the index of an element, the element itself and current accumulator value, and calculates the
next accumulator value. @sample samples.collections.Collections.Aggregates.reduceRightn
*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UShortArray.reduceRightIndexed(operation: (index: Int, UShort, acc: UShort) -> UShort): UShort {n  var index =
lastIndexn  if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")n  var
accumulator = get(index--n  while (index >= 0) {n    accumulator = operation(index, get(index),
accumulator)n
--indexn  }n  return accumulatorn}n/n/**n * Accumulates value starting with the last element and applying
[operation] from right to left to each element with its index in the original array and current accumulator value.
Returns `null` if the array is empty. @param [operation] function that takes the index of an element,
the element itself and current accumulator value, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.reduceRightOrNulln
*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UIntArray.reduceRightIndexedOrNull(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt? {n  var index =
lastIndexn  if (index < 0) return nulln  var accumulator = get(index--n  while (index >= 0) {n
accumulator = operation(index, get(index), accumulator)n    --indexn  }n  return accumulatorn}n/n/**n *
Accumulates value starting
with the last element and applying [operation] from right to left to each element with its index in the original
array and current accumulator value. Returns `null` if the array is empty. @param [operation]
function that takes the index of an element, the element itself and current accumulator value, and calculates the
next accumulator value. @sample samples.collections.Collections.Aggregates.reduceRightOrNulln
*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
ULongArray.reduceRightIndexedOrNull(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong? {n  var
index = lastIndexn  if (index < 0) return nulln  var accumulator = get(index--n  while (index >= 0) {n
accumulator = operation(index, get(index), accumulator)n    --indexn  }n  return accumulatorn}n/n/**n *
Accumulates value starting with the last element and applying [operation] from right to left
to each element with its index in the original array and current accumulator value. Returns `null` if the
array is empty. @param [operation] function that takes the index of an element, the element itself and
current accumulator value, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.reduceRightOrNulln
*\/n@SinceKotlin("1.4")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun
UByteArray.reduceRightIndexedOrNull(operation: (index: Int, UByte, acc: UByte) -> UByte): UByte? {n  var
index = lastIndexn  if (index < 0) return nulln  var accumulator = get(index--n  while (index >= 0) {n

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accumulator = operation(index, get(index), accumulator)\n    --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceRightIndexedOrNull(operation: (index: Int, UShort, acc: UShort) -> UShort): UShort? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceRightOrNull(operation: (UInt, acc: UInt) -> UInt): UInt? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.reduceRightOrNull(operation: (ULong, acc: ULong) -> ULong): ULong? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceRightOrNull(operation: (UByte, acc: UByte) -> UByte): UByte? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceRightOrNull(operation: (UShort, acc: UShort) -> UShort): UShort? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param

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[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.runningFold(initial: R, operation: (acc: R, UInt) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n
    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n
        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n    return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.runningFold(initial: R, operation: (acc: R, ULong) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n
for (element in this) {\n        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n
return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and an
element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.runningFold(initial: R, operation: (acc: R,
UByte) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply {
add(initial) }\n    var accumulator = initial\n    for (element in this) {\n        accumulator = operation(accumulator,
element)\n        result.add(accumulator)\n    }\n    return result\n}\n\n**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.runningFold(initial:
R, operation: (acc: R, UShort) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n    val result =
ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for (element in this) {\n
        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n    return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n *
Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UIntArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): List<R> {\n
if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator
= initial\n    for (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n
        result.add(accumulator)\n    }\n    return result\n}\n\n**\n * Returns a list containing successive accumulation

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduce(operation: (acc: ULong, ULong) -> ULong): List<ULong> {\n  if (isEmpty()) return
emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<ULong>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.runningReduce\n */\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduce(operation: (acc: UByte, UByte) -> UByte): List<UByte> {\n  if (isEmpty()) return
emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UByte>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.runningReduce\n */\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduce(operation: (acc: UShort, UShort) -> UShort): List<UShort> {\n  if (isEmpty()) return
emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UShort>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.runningReduce\n */\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.runningReduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): List<UInt> {\n  if (isEmpty())
return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UInt>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * @sample samples.collections.Collections.Aggregates.runningReduce\n */\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): List<ULong> {\n  if (isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<ULong>(size).apply { add(accumulator) }\n  for (index in 1 until size) {\n    accumulator =

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operation(index, accumulator, this[index])\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n *
to each element, its index in the original array and current accumulator value that starts with the first element of this
array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): List<UByte> {\n    if
(isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<UByte>(size).apply {
add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n
        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n
* @param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): List<UShort> {\n    if
(isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<UShort>(size).apply {
add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n
        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.scan(initial: R, operation: (acc: R, UInt) -> R):
List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator
value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.scan(initial: R, operation: (acc: R, ULong) -> R):
List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator
value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic

```

```

inline fun <R> UByteArray.scan(initial: R, operation: (acc: R, UByte) -> R): List<R> {
    return runningFold(initial, operation)
}

/**
 * Returns a list containing successive accumulation values generated by
 * applying [operation] from left to right to each element and current accumulator value that starts with [initial]
 * value.
 * Note that `acc` value passed to [operation] function should not be mutated; otherwise it would
 * affect the previous value in resulting list.
 * @param [operation] function that takes current accumulator value
 * and an element, and calculates the next accumulator value.
 * @sample
 * samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UShortArray.scan(initial: R, operation: (acc: R,
    UShort) -> R): List<R> {
    return runningFold(initial, operation)
}

/**
 * Returns a list containing
 * successive accumulation values generated by applying [operation] from left to right to each element, its index in
 * the original array and current accumulator value that starts with [initial] value.
 * Note that `acc` value passed
 * to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the element
 * itself, and calculates the next accumulator value.
 * @sample
 * samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UIntArray.scanIndexed(initial: R, operation: (index: Int, acc: R,
    UInt) -> R): List<R> {
    return runningFoldIndexed(initial, operation)
}

/**
 * Returns a list containing successive accumulation values generated by applying [operation] from left to right
 * to each element, its index in the original array and current accumulator value that starts with [initial] value.
 * Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the
 * previous value in resulting list.
 * @param [operation] function that takes the index of an element, current
 * accumulator value
 * and the element itself, and calculates the next accumulator value.
 * @sample
 * samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> ULongArray.scanIndexed(initial: R, operation: (index: Int, acc:
    R, ULong) -> R): List<R> {
    return runningFoldIndexed(initial, operation)
}

/**
 * Returns a list
 * containing successive accumulation values generated
 * by applying [operation] from left to right to each element, its index in the original array and current accumulator
 * value that starts with [initial] value.
 * Note that `acc` value passed to [operation] function should not be
 * mutated; otherwise it would affect the previous value in resulting list.
 * @param [operation] function that
 * takes the index of an element, current accumulator value
 * and the element itself, and calculates the next
 * accumulator value.
 * @sample
 * samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UByteArray.scanIndexed(initial: R, operation: (index: Int, acc:
    R, UByte) -> R): List<R> {
    return runningFoldIndexed(initial, operation)
}

/**
 * Returns a list containing
 * successive accumulation values generated by applying [operation] from left to right to each element, its index
 * in the original array and current accumulator value that starts with [initial] value.
 * Note that `acc` value
 * passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting
 * list.
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the
 * element itself, and calculates the next accumulator value.
 * @sample
 * samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UShortArray.scanIndexed(initial: R, operation: (index: Int, acc:
    R, UShort) -> R): List<R> {
    return runningFoldIndexed(initial, operation)
}

/**
 * Returns the sum of all
 * values produced by [selector] function applied to each element in the array.
 * @Deprecated("Use sumOf
 * instead.", ReplaceWith("this.sumOf(selector)"))
 * @DeprecatedSinceKotlin(warningSince

```

```

= \"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.sumBy(selector: (UInt) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince =
\"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.sumBy(selector: (ULong) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum
+= selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.sumBy(selector: (UByte) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum
+= selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince =
\"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sumBy(selector: (UShort) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.sumByDouble(selector: (UInt) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince =
\"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.sumByDouble(selector: (ULong) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.sumByDouble(selector: (UByte) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince =
\"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sumByDouble(selector: (UShort) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated(\"Use sumOf instead.\",
ReplaceWith(\"this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince =
\"1.5\")\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.sumOf(selector: (UInt) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n */\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfDouble\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.sumOf(selector: (UInt) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n */\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfDouble\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:

```



```

(ULong) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:
(UByte) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:
(UShort) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector: (UInt) -
> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.sumOf(selector: (ULong) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this)
{\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:
(UByte) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.sumOf(selector: (UShort) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this)
{\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector: (UInt)
-> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")

```

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\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:
(ULong) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")
\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:
(UByte) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element
in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")
\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:
(UShort) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic
inline fun UIntArray.sumOf(selector: (UInt) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic inline fun ULongArray.sumOf(selector: (ULong) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n
for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all
values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic
inline fun UByteArray.sumOf(selector: (UByte) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic inline fun UShortArray.sumOf(selector: (UShort) -> UInt): UInt {\n    var sum: UInt =
0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the
sum of all values produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic inline fun UIntArray.sumOf(selector: (UInt) -> ULong): ULong {\n    var sum: ULong =
0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns
the sum of all values produced by [selector] function applied to each element in the array.\n

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*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic
inline fun ULongArray.sumOf(selector: (ULong) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic inline fun UByteArray.sumOf(selector: (UByte) -> ULong): ULong {\n    var sum: ULong =
0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns
the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong\
")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inli
neOnly\npublic inline fun UShortArray.sumOf(selector: (UShort) -> ULong): ULong {\n    var sum: ULong =
0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns a
list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UIntArray.zip(other: Array<out
R>): List<Pair<UInt, R>> {\n    return zip(other) { t1, t2 ->
t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the
same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:
Array<out R>): List<Pair<ULong, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other: Array<out
R>): List<Pair<UByte, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n
* The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:
Array<out R>): List<Pair<UShort, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and the [other] array with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n
*\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UIntArray.zip(other: Array<out R>, transform: (a: UInt, b: R) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>

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ULongArray.zip(other: Array<out R>, transform: (a: ULong, b: R) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n
 * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UByteArray.zip(other: Array<out R>, transform: (a: UByte, b: R) -> V): List<V> {\n  val size = minOf(size,
other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n    list.add(transform(this[i], other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n
 * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UShortArray.zip(other: Array<out R>, transform: (a: UShort, b: R) -> V): List<V> {\n
  val size = minOf(size, other.size)\n  val list = ArrayList<V>(size)\n  for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n  }\n  return list\n}\n\n/**\n * Returns a list of pairs built from the elements
of `this` collection and [other] array with the same index.\n * The returned list has length of the shortest collection.\n
 * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UIntArray.zip(other:
Iterable<R>): List<Pair<UInt, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n
 * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:
Iterable<R>): List<Pair<ULong, R>> {\n
  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this`
collection and [other] array with the same index.\n * The returned list has length of the shortest collection.\n
 * \n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other:
Iterable<R>): List<Pair<UByte, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n
 * \n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:
Iterable<R>): List<Pair<UShort, R>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and
the [other] collection with the same index\n * using the provided [transform] function applied to each pair of
elements.\n * The returned list has length of the shortest collection.\n
 * \n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UIntArray.zip(other: Iterable<R>, transform: (a: UInt, b: R) -> V): List<V> {\n  val arraySize = size\n  val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n
if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n
 * \n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
ULongArray.zip(other: Iterable<R>, transform: (a: ULong, b: R) -> V): List<V> {\n  val arraySize = size\n  val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other)

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{\n    if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the\n * shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>\n    UByteArray.zip(other: Iterable<R>,\n        transform: (a: UByte, b: R) -> V): List<V> {\n    val arraySize = size\n    val list =\n        ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n        if (i >= arraySize) break\n            list.add(transform(this[i++], element))\n        }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n * using the\n * provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest\n * collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>\n    UShortArray.zip(other: Iterable<R>, transform: (a: UShort, b: R) -> V): List<V> {\n    val arraySize = size\n    val\n    list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in\n        other) {\n            if (i >= arraySize) break\n                list.add(transform(this[i++], element))\n            }\n    return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The\n * returned list has length of the shortest collection.\n * \n * @sample\n * samples.collections.Iterables.Operations.zipIterable\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UIntArray.zip(other: UIntArray):\n    List<Pair<UInt, UInt>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from\n * the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest\n * collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun ULongArray.zip(other: ULongArray):\n    List<Pair<ULong, ULong>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns\n * a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list\n * has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UByteArray.zip(other: UByteArray):\n    List<Pair<UByte, UByte>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built\n * from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the\n * shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UShortArray.zip(other: UShortArray):\n    List<Pair<UShort, UShort>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built\n * from the elements of `this` array and the [other] array with the same index\n * using the provided [transform]\n * function applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample\n * samples.collections.Iterables.Operations.zipIterableWithTransform\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>\n    UIntArray.zip(other: UIntArray, transform: (a: UInt, b: UInt) -> V): List<V> {\n    val size = minOf(size,\n        other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array\n * with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned\n * list has length of the shortest array.\n * \n * @sample\n * samples.collections.Iterables.Operations.zipIterableWithTransform\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>\n    ULongArray.zip(other: ULongArray, transform: (a: ULong, b: ULong) -> V): List<V> {\n    val size = minOf(size,\n        other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array\n * with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned

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list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UByteArray.zip(other: UByteArray, transform: (a: UByte, b: UByte) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list
of values built from the elements of `this` array and the [other] array with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n *
@sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UShortArray.zip(other: UShortArray, transform: (a: UShort, b: UShort) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedT
ypes::class)\npublic fun Array<out UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum
+= element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Array<out ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this)
{\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Array<out UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Array<out UShort>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all
elements in the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.sum(): UInt {\n    return storage.sum().toUInt()\n}\n\n/**\n * Returns the sum of all elements in the
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.sum(): ULong {\n    return storage.sum().toULong()\n}\n\n/**\n * Returns the sum of all elements in
the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UByteArray.sum(): UInt {\n    return sumOf { it.toUInt() }\n}\n\n/**\n * Returns the sum of all elements in the
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sum(): UInt {\n    return sumOf { it.toUInt() }\n}\n\n"/**\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UCollectionsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns an array of UByte containing all of the
elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Collection<UByte>.toUByteArray(): UByteArray {\n    val result = UByteArray(size)\n    var index = 0\n    for
(element in this)\n        result[index++] = element\n    return result\n}\n\n/**\n * Returns an array of UInt containing
all of the elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Collection<UInt>.toUIntArray(): UIntArray {\n    val result = UIntArray(size)\n
var index = 0\n    for (element in this)\n        result[index++] = element\n    return result\n}\n\n/**\n * Returns an
array of ULong containing all of the elements of this collection.\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<ULong>.toULongArray():
ULongArray {\n    val result = ULongArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] =
element\n    return result\n}\n\n/**\n * Returns an array of UShort containing all of the elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UShort>.toUShortArray():
UShortArray {\n    val result = UShortArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] =
element\n    return result\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedT
ypes::class)\npublic fun Iterable<UInt>.sum():
    UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n *
Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Iterable<ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this) {\n
        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Iterable<UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Iterable<UShort>.sum(): UInt {\n
    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UComparisonsKt")\n\npackage
kotlin.comparisons\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
\a href="https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib">https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the
greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UInt, b:
UInt): UInt {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: ULong,
b: ULong): ULong {\n    return
if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UByte,
b: UByte): UByte {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UShort,
b: UShort): UShort {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: UInt, b: UInt, c: UInt): UInt {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns
the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: ULong, b: ULong, c: ULong): ULong {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n *
Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: UByte, b: UByte, c: UByte): UByte {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n *
Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: UShort, b: UShort, c: UShort): UShort {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n *
Returns the greater of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
maxOf(a: UInt, vararg other: UInt): UInt {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return
max\n}\n\n/**\n * Returns the greater of the given values.\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: ULong, vararg other: ULong):
ULong {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the greater
of the
given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UByte, vararg
other: UByte): UByte {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n *
Returns the greater of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
maxOf(a: UShort, vararg other: UShort): UShort {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n
return max\n}\n\n/**\n * Returns the smaller of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UInt, b:
UInt): UInt {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: ULong,
b: ULong): ULong {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun minOf(a: UByte, b: UByte): UByte {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two
values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
minOf(a: UShort, b: UShort): UShort {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of three
values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun minOf(a: UInt, b: UInt, c: UInt): UInt {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns
the smaller of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun minOf(a: ULong, b: ULong, c: ULong): ULong {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n *
Returns the smaller of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun minOf(a: UByte, b: UByte,
c: UByte): UByte {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun minOf(a: UShort, b: UShort, c: UShort): UShort {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n *
Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
minOf(a: UInt, vararg other: UInt): UInt {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: ULong, vararg other: ULong):
ULong {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n/**\n * Returns the smaller
of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: UByte,
vararg other: UByte): UByte {\n    var min = a\n    for (e
in other) min = minOf(min, e)\n    return min\n}\n\n/**\n * Returns the smaller of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: UShort, vararg other: UShort):
UShort {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n", /*\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("URangesKt")\n\npackage
kotlin.ranges\n\n/\n\n NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n\n See:
\n\nhttps://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n\nimport kotlin.random.*\n\n/**\n * Returns a
random element from this range.\n * \n * @throws IllegalArgumentException if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public
inline fun UIntRange.random(): UInt {\n    return random(Random)\n}\n\n/**\n * Returns a random element from
this range.\n * \n * @throws IllegalArgumentException if this range is empty.\n

```



```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange.random(): ULong {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this range using the specified source of randomness.\n * \n * @throws IllegalArgumentException if this range is empty.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun UIntRange.random(random: Random): UInt {\n    try {\n        return random.nextUInt(this)\n    } catch(e: IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a random element from this range using the specified source of randomness.\n * \n * @throws IllegalArgumentException if this range is empty.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun ULongRange.random(random: Random): ULong {\n    try {\n        return random.nextULong(this)\n    } catch(e: IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a random element from this range, or `null` if this range is empty.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntRange.randomOrNull(): UInt? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range, or `null` if this range is empty.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange.randomOrNull(): ULong? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range using the specified source of randomness, or `null` if this range is empty.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\npublic fun UIntRange.randomOrNull(random: Random): UInt? {\n    if (isEmpty())\n        return null\n    return random.nextUInt(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of randomness, or `null` if this range is empty.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\npublic fun ULongRange.randomOrNull(random: Random): ULong? {\n    if (isEmpty())\n        return null\n    return random.nextULong(this)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline operator fun UIntRange.contains(element: UInt?): Boolean {\n    return element != null && contains(element)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline operator fun ULongRange.contains(element: ULong?): Boolean {\n    return element != null && contains(element)\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun UIntRange.contains(value: UByte): Boolean {\n    return contains(value.toUInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun ULongRange.contains(value: UByte): Boolean {\n    return contains(value.toULong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun ULongRange.contains(value: UInt): Boolean {\n    return contains(value.toULong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun UIntRange.contains(value: ULong): Boolean {\n    return (value shr UInt.SIZE_BITS) == 0uL && contains(value.toUInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n */\n*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun

```

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UIntRange.contains(value: UShort): Boolean {\n  return contains(value.toUInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun ULongRange.contains(value: UShort): Boolean {\n  return contains(value.toULong())\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UByte.downTo(to: UByte): UIntProgression {\n  return UIntProgression.fromClosedRange(this.toUInt(), to.toUInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UInt.downTo(to: UInt): UIntProgression {\n  return UIntProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun ULong.downTo(to: ULong): ULongProgression {\n  return ULongProgression.fromClosedRange(this, to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UShort.downTo(to: UShort): UIntProgression {\n  return UIntProgression.fromClosedRange(this.toUInt(), to.toUInt(), -1)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the same step.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun UIntProgression.reversed(): UIntProgression {\n  return UIntProgression.fromClosedRange(last, first, -step)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the same step.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun ULongProgression.reversed(): ULongProgression {\n  return ULongProgression.fromClosedRange(last, first, -step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UIntProgression.step(step: Int): UIntProgression {\n  checkStepIsPositive(step > 0, step)\n  return UIntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun ULongProgression.step(step: Long): ULongProgression {\n  checkStepIsPositive(step > 0, step)\n  return ULongProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UByte.until(to: UByte): UIntRange {\n  if (to <= UByte.MIN_VALUE) return UIntRange.EMPTY\n  return this.toUInt() .. (to - 1u).toUInt()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UInt.until(to: UInt): UIntRange {\n  if (to <= UInt.MIN_VALUE) return UIntRange.EMPTY\n  return this .. (to - 1u).toUInt()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned

```

```

range is empty.\n *^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
infix fun ULong.until(to: ULong): ULongRange {\n    if (to <= ULong.MIN_VALUE) return
ULongRange.EMPTY\n    return this .. (to - 1u).toULong()\n}\n\n/**\n * Returns a range from this value up to but
excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned
range is empty.\n *^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
infix fun UShort.until(to: UShort): UIntRange {\n    if (to <= UShort.MIN_VALUE) return UIntRange.EMPTY\n
return this.toUInt() .. (to - 1u).toUInt()\n}\n\n/**\n * Ensures that this value is not less than the specified
[minimumValue].\n
 * \n * @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n *
\n * @sample samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceAtLeast(minimumValue: UInt): UInt {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtLeast(minimumValue: ULong): ULong {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or
equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UByte.coerceAtLeast(minimumValue: UByte): UByte {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtLeast(minimumValue: UShort): UShort {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue]
otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceAtMost(maximumValue: UInt): UInt {\n    return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtMost(maximumValue: ULong): ULong {\n    return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UByte.coerceAtMost(maximumValue: UByte): UByte {\n    return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*^n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtMost(maximumValue: UShort): UShort {\n    return if (this > maximumValue) maximumValue

```

```

else this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n
 * @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
 [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
 samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
 UInt.coerceIn(minimumValue: UInt, maximumValue: UInt): UInt {\n if (minimumValue > maximumValue)
 throw IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
 minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n if (this > maximumValue)
 return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified range
 [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
 is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
 samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
 ULong.coerceIn(minimumValue: ULong, maximumValue: ULong): ULong {\n if (minimumValue
 > maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
 $maximumValue is less than minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n
 if (this > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the
 specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or
 [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
 [maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
 UByte.coerceIn(minimumValue: UByte, maximumValue: UByte): UByte {\n if (minimumValue >
 maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
 $maximumValue is less than minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n
 if (this
 > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified
 range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this
 value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n *
 @sample samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
 UShort.coerceIn(minimumValue: UShort, maximumValue: UShort): UShort {\n if (minimumValue >
 maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
 $maximumValue is less than minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n
 if (this > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the
 specified [range].\n * \n * @return this value if it's in the [range], or `range.start` if this value is
 less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.\n * \n * @sample
 samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
 UInt.coerceIn(range: ClosedRange<UInt>): UInt {\n if (range is ClosedFloatingPointRange) {\n return
 this.coerceIn<UInt>(range)\n } \n if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to
 an empty range: $range.")\n return when {\n this < range.start -> range.start\n this > range.endInclusive -
 > range.endInclusive\n else -> this\n }\n}\n\n/**\n * Ensures that this value lies in the specified [range].\n * \n
 * @return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or
 `range.endInclusive` if this value is greater than `range.endInclusive`.\n * \n * @sample
 samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
 fun ULong.coerceIn(range: ClosedRange<ULong>): ULong {\n if (range is ClosedFloatingPointRange) {\n
 return this.coerceIn<ULong>(range)\n } \n if (range.isEmpty()) throw IllegalArgumentException("Cannot

```

coerce value to an empty range: \$range.)\n return when {\n this < range.start -> range.start\n this > range.endInclusive -> range.endInclusive\n else -> this\n }\n}\n\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("USequencesKt")\n\npackage
```

```
kotlin.sequences\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
```

```
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n
```

```
* Returns the sum of all elements in the sequence.\n * The operation is _terminal_.
```

```
\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<UInt>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/*\n * Returns the sum of all elements in the sequence.\n * The operation is _terminal_.
```

```
\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<ULong>.sum(): ULong {\n var sum: ULong = 0uL\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/*\n * Returns the sum of all elements in the sequence.\n * The operation is _terminal_.
```

```
\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<UByte>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/*\n * Returns the sum of all elements in the sequence.\n * The operation is _terminal_.
```

```
\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Sequence<UShort>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```
\n\npackage kotlin\n\npublic expect open class Error : Throwable {\n constructor()\n constructor(message: String?)\n constructor(message: String?, cause: Throwable?)\n
```

```
constructor(cause: Throwable?)\n}\n\npublic expect open class Exception : Throwable {\n constructor()\n constructor(message: String?)\n constructor(message: String?,
```

```
cause: Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open class RuntimeException :
```

```
Exception {\n constructor()\n constructor(message: String?)\n constructor(message: String?, cause:
```

```
Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open class IllegalArgumentException :
```

```
RuntimeException {\n constructor()\n constructor(message: String?)\n constructor(message: String?, cause:
```

```
Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open class IllegalStateException :
```

```
RuntimeException {\n constructor()\n constructor(message: String?)\n constructor(message: String?, cause:
```

```
Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open class IndexOutOfBoundsException :
```

```
RuntimeException {\n constructor()\n constructor(message: String?)\n}\n\npublic expect open class
```

```
ConcurrentModificationException : RuntimeException {\n constructor()\n constructor(message: String?)\n
```

```
@Deprecated("The constructor
```

```
is not supported on all platforms and will be removed from kotlin-stdlib-common soon.", level =
```

```
DeprecationLevel.ERROR)\n constructor(message: String?, cause: Throwable?)\n @Deprecated("The
```

```
constructor is not supported on all platforms and will be removed from kotlin-stdlib-common soon.", level =
```

```
DeprecationLevel.ERROR)\n constructor(cause: Throwable?)\n}\n\npublic expect open class
```

```
UnsupportedOperationException : RuntimeException {\n constructor()\n constructor(message: String?)\n
```

```
constructor(message: String?, cause: Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open
```

```
class NumberFormatException : IllegalArgumentException {\n constructor()\n constructor(message:
```

```
String?)\n}\n\npublic expect open class NullPointerException : RuntimeException {\n constructor()\n
```

```
constructor(message: String?)\n}\n\npublic expect open class ClassCastException : RuntimeException {\n
```

```
constructor()\n constructor(message: String?)\n}\n\npublic
```

```

expect open class AssertionError : Error {
    constructor()
    constructor(message: Any?)
}

public expect open class NoSuchElementException : RuntimeException {
    constructor()
    constructor(message: String?)
}

@SinceKotlin("1.3")
public expect open class ArithmeticException : RuntimeException {
    constructor()
    constructor(message: String?)
}

@Deprecated("This exception type is not supposed to be thrown or caught in common code and will be removed from kotlin-stdlib-common soon.", level = DeprecationLevel.ERROR)
public expect open class NoWhenBranchMatchedException : RuntimeException {
    constructor()
    constructor(message: String?)
    constructor(message: String?, cause: Throwable?)
    constructor(cause: Throwable?)
}

@Deprecated("This exception type is not supposed to be thrown or caught in common code and will be removed from kotlin-stdlib-common soon.", level = DeprecationLevel.ERROR)
public expect class UninitializedPropertyAccessException : RuntimeException {
    constructor()
    constructor(message: String?)
    constructor(message: String?, cause: Throwable?)
    constructor(cause: Throwable?)
}

/**
 * Thrown after invocation of a function or property that was expected to return `Nothing`, but returned something instead.
 */
@SinceKotlin("1.4")
@PublishedApi
internal class KotlinNothingValueException : RuntimeException {
    constructor() : super()
    constructor(message: String?) : super(message)
    constructor(message: String?, cause: Throwable?) : super(message, cause)
    constructor(cause: Throwable?) : super(cause)
}

/**
 * Returns the detailed description of this throwable with its stack trace.
 *
 * The detailed description includes:
 *
 * - the short description (see [Throwable.toString]) of this throwable;
 *
 * - the complete stack trace;
 *
 * - detailed descriptions of the exceptions that were [suppressed][suppressedExceptions] in order to deliver this exception;
 *
 * - the detailed description of each throwable in the [Throwable.cause] chain.
 */
@SinceKotlin("1.4")
public expect fun Throwable.stackTraceToString(): String

/**
 * Prints the [detailed description][Throwable.stackTraceToString] of this throwable to the standard output or standard error output.
 */
@SinceKotlin("1.4")
@Suppress("EXTENSION_SHADOWED_BY_MEMBER")
public expect fun Throwable.printStackTrace(): Unit

/**
 * When supported by the platform, adds the specified exception to the list of exceptions that were
 * suppressed in order to deliver this exception.
 */
@SinceKotlin("1.4")
@Suppress("EXTENSION_SHADOWED_BY_MEMBER")
public expect fun Throwable.addSuppressed(exception: Throwable)

/**
 * Returns a list of all exceptions that were suppressed in order to deliver this exception.
 *
 * The list can be empty:
 *
 * - if no exceptions were suppressed;
 *
 * - if the platform doesn't support suppressed exceptions;
 *
 * - if this [Throwable] instance has disabled the suppression.
 */
@SinceKotlin("1.4")
public expect val Throwable.suppressedExceptions: List<Throwable>

/*
 * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.js
import kotlin.annotation.AnnotationTarget

/**
 * Gives a declaration (a function, a property or a class) specific name in JavaScript.
 */
@Target(CLASS, FUNCTION, PROPERTY, CONSTRUCTOR, PROPERTY_GETTER, PROPERTY_SETTER)
@OptionalExpectation
public expect annotation class JsName(val name: String)

/**
 * Marks experimental JS export annotations.
 *
 * Note that behavior of these annotations will likely be changed in the future.
 *
 * Usages of such annotations will be reported as warnings unless an explicit opt-in with
 * the [OptIn] annotation, e.g.
 *
 * @OptIn(ExperimentalJsExport::class),
 * or with the -opt-in=kotlin.js.ExperimentalJsExport
 * compiler option is given.
 */
@RequiresOptIn(level = RequiresOptIn.Level.WARNING)
@MustBeDocumented
@Retention(AnnotationRetention.BINARY)
@SinceKotlin("1.4")
public annotation class ExperimentalJsExport

/**
 * Exports top-level declaration on JS platform.
 *
 * Compiled module exposes declarations that are marked with this annotation without name mangling.
 *
 * This annotation can be applied to either files or top-level declarations.
 *
 * It is currently prohibited to export the following kinds of declarations:
 *
 * * `expect` declarations
 *
 * * inline functions with reified type parameters
 *
 * * suspend functions
 *
 * * secondary constructors without `@JsName`
 *
 * * extension properties
 *
 * * enum classes
 *
 * * annotation classes
 *
 * Signatures of exported declarations must only contain "exportable" types:
 *
 * * `dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`,

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`Double`\n * * `BooleanArray`,
`ByteArray`, `ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`\n * * `Array<exportable-type>`\n * *
Function types with exportable parameters and return types\n * * `external` or `@JsExport` classes and interfaces\n
* * Nullable counterparts of types above\n * * Unit return type. Must not be nullable\n *\n * This annotation is
experimental, meaning that restrictions mentioned above are subject to change.\n
*/\n\n@ExperimentalJsExport\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY,
FUNCTION, FILE)\n@SinceKotlin("1.4")\n@OptionalExpectation\npublic expect annotation class
JsExport()"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.io\n\n/** Prints the line separator to the standard output stream. */\n\npublic expect fun
println()\n\n/** Prints the given [message]
and the line separator to the standard output stream. */\n\npublic expect fun println(message: Any?)\n\n/** Prints the
given [message] to the standard output stream. */\n\npublic expect fun print(message: Any?)\n\n/**\n * Reads a line
of input from the standard input stream and returns it,\n * or throws a [RuntimeException] if EOF has already been
reached when [readln] is called.\n *\n * LF or CRLF is treated as the line terminator. Line terminator is not included
in the returned string.\n *\n * Currently this function is not supported in Kotlin/JS and throws
[UnsupportedOperationException].\n */\n\n@SinceKotlin("1.6")\n\npublic expect fun readln(): String\n\n/**\n *
Reads a line of input from the standard input stream and returns it,\n * or return `null` if EOF has already been
reached when [readlnOrNull] is called.\n *\n * LF or CRLF is treated as the line terminator. Line terminator is not
included in the returned string.\n *\n * Currently this function is not supported in Kotlin/JS and throws
[UnsupportedOperationException].\n */\n\n@SinceKotlin("1.6")\n\npublic expect fun readlnOrNull():
String?\n\ninternal class ReadAfterEOFException(message: String?) : RuntimeException(message)\n\n\ninternal
expect interface Serializable\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\nimport kotlin.internal.PlatformDependent\n\n/**\n *
Classes that inherit from this interface can be represented as a sequence of elements that can\n * be iterated over.\n
*\n * @param T the type of element being iterated over. The iterator is covariant in its element type.\n */\n\npublic interface
Iterable<out T> {\n    /**\n     * Returns an iterator over the elements of this object.\n     */\n    public operator fun
iterator(): Iterator<T>\n}\n\n/**\n * Classes that inherit from this interface can be represented
as a sequence of elements that can\n * be iterated over and that supports removing elements during iteration.\n *\n
* @param T the type of element being iterated over. The mutable iterator is invariant in its element type.\n */\n\npublic
interface MutableIterable<out T> : Iterable<T> {\n    /**\n     * Returns an iterator over the elements of this
sequence that supports removing elements during iteration.\n     */\n    override fun iterator():
MutableIterator<T>\n}\n\n/**\n * A generic collection of elements. Methods in this interface support only read-only
access to the collection;\n * read/write access is supported through the [MutableCollection] interface.\n * @param E
the type of elements contained in the collection. The collection is covariant in its element type.\n */\n\npublic interface
Collection<out E> : Iterable<E> {\n    // Query Operations\n    /**\n     * Returns the size of the collection.\n     */\n    public val size: Int\n    /**\n     * Returns `true` if the collection is
empty (contains no elements), `false` otherwise.\n     */\n    public fun isEmpty(): Boolean\n\n    /**\n     * Checks if
the specified element is contained in this collection.\n     */\n    public operator fun contains(element:
@UnsafeVariance E): Boolean\n\n    override fun iterator(): Iterator<E>\n\n    // Bulk Operations\n    /**\n     *
Checks if all elements in the specified collection are contained in this collection.\n     */\n    public fun
containsAll(elements: Collection<@UnsafeVariance E>): Boolean\n}\n\n/**\n * A generic collection of elements
that supports adding and removing elements.\n *\n * @param E the type of elements contained in the collection. The
mutable collection is invariant in its element type.\n */\n\npublic interface MutableCollection<E> : Collection<E>,
MutableIterable<E> {\n    // Query Operations\n    override fun iterator(): MutableIterator<E>\n\n    // Modification
Operations\n    /**\n     * Adds the specified element to the collection.\n     */\n

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operator fun set(index: Int, element: E): E\n\n /**\n * Inserts an element into the list at the specified [index].\n *\n public fun add(index: Int, element: E): Unit\n\n /**\n * Removes an element at the specified [index] from\n the list.\n *\n * @return the element that has been removed.\n *\n public fun removeAt(index: Int): E\n\n // List Iterators\n override fun listIterator(): MutableListIterator<E>\n\n override fun listIterator(index: Int):\n MutableListIterator<E>\n\n // View\n override fun subList(fromIndex: Int, toIndex: Int):\n MutableList<E>\n}\n\n/**\n * A generic\n unordered collection of elements that does not support duplicate elements.\n * Methods in this interface support\n only read-only access to the set;\n * read/write access is supported through the [MutableSet] interface.\n * @param\n E the type of elements contained in the set. The set is covariant in its element type.\n *\n public interface Set<out E>\n : Collection<E> {\n // Query Operations\n\n override val size: Int\n\n override fun isEmpty(): Boolean\n\n override fun contains(element: @UnsafeVariance E): Boolean\n\n override fun iterator(): Iterator<E>\n\n // Bulk\n Operations\n\n override fun containsAll(elements: Collection<@UnsafeVariance E>): Boolean\n}\n\n/**\n * A\n generic unordered collection of elements that does not support duplicate elements, and supports\n * adding and\n removing elements.\n * @param E the type of elements contained in the set. The mutable set is invariant in its\n element type.\n *\n public interface MutableSet<E> : Set<E>, MutableCollection<E> {\n\n // Query Operations\n\n override fun iterator(): MutableIterator<E>\n\n // Modification Operations\n\n /**\n * Adds the specified element to the set.\n *\n * @return `true` if the element has been added, `false` if the\n element is already contained in the set.\n *\n override fun add(element: E): Boolean\n\n override fun\n remove(element: E): Boolean\n\n // Bulk Modification Operations\n\n override fun addAll(elements:\n Collection<E>): Boolean\n\n override fun removeAll(elements: Collection<E>): Boolean\n\n override fun\n retainAll(elements: Collection<E>): Boolean\n\n override fun clear(): Unit\n}\n\n/**\n * A collection that holds\n pairs of objects (keys and values) and supports efficiently retrieving\n * the value corresponding to each key. Map\n keys are unique; the map holds only one value for each key.\n * Methods in this interface support only read-only\n access to the map; read-write access is supported through\n * the [MutableMap] interface.\n * @param\n K the type of map keys. The map is invariant in its key type, as it\n * can accept key as a parameter (of\n [containsKey] for example) and return it in [keys] set.\n * @param V the type of map values. The map is covariant\n in its value type.\n *\n public interface Map<K, out V> {\n // Query Operations\n\n /**\n * Returns the number\n of key/value pairs in the map.\n *\n public val size: Int\n\n /**\n * Returns `true` if the map is empty\n (contains no elements), `false` otherwise.\n *\n public fun isEmpty(): Boolean\n\n /**\n * Returns `true` if\n the map contains the specified [key].\n *\n public fun containsKey(key: K): Boolean\n\n /**\n * Returns\n `true` if the map maps one or more keys to the specified [value].\n *\n public fun containsValue(value:\n @UnsafeVariance V): Boolean\n\n /**\n * Returns the value corresponding to the given [key], or `null` if such\n a key is not present in the map.\n *\n public operator\n fun get(key: K): V?\n\n /**\n * Returns the value corresponding to the given [key], or [defaultValue] if such a\n key is not present in the map.\n *\n * @since JDK 1.8\n *\n @SinceKotlin("1.1")\n\n @PlatformDependent\n\n public fun getOrDefault(key: K, defaultValue: @UnsafeVariance V): V {\n // See\n default implementation in JDK sources\n\n throw NotImplementedError()\n }\n\n // Views\n\n /**\n * Returns a read-only [Set] of all keys in this map.\n *\n public val keys: Set<K>\n\n /**\n * Returns a read-\n only [Collection] of all values in this map. Note that this collection may contain duplicate values.\n *\n public\n val values: Collection<V>\n\n /**\n * Returns a read-only [Set] of all key/value pairs in this map.\n *\n public\n val entries: Set<Map.Entry<K, V>>\n\n /**\n * Represents a key/value pair held by a [Map].\n *\n public\n interface Entry<out K, out V> {\n\n /**\n * Returns the key of this key/value pair.\n *\n public val key: K\n\n /**\n * Returns the value of\n this key/value pair.\n *\n public val value: V\n }\n}\n\n/**\n * A modifiable collection that holds pairs\n of objects (keys and values) and supports efficiently retrieving\n * the value corresponding to each key. Map\n keys are unique; the map holds only one value for each key.\n * @param K the type of map keys. The map is invariant in\n its key type.\n * @param V the type of map values. The mutable map is invariant in its value type.\n *\n public\n interface MutableMap<K, V> : Map<K, V> {\n // Modification Operations\n\n /**\n * Associates the specified

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[value] with the specified [key] in the map.\n * \n * @return the previous value associated with the key, or
`null` if the key was not present in the map.\n * \n public fun put(key: K, value: V): V?\n\n /** \n *
Removes the specified key and its corresponding value from
this map.\n * \n * @return the previous value associated with the key, or `null` if the key was not present in the
map.\n * \n public fun remove(key: K): V?\n\n /** \n * Removes the entry for the specified key only if it is
mapped to the specified value.\n * \n * @return true if entry was removed\n * \n @SinceKotlin("1.1")\n
@PlatformDependent\n public fun remove(key: K, value: V): Boolean {\n // See default implementation in
JDK sources\n return true\n }\n\n // Bulk Modification Operations\n /** \n * Updates this map with
key/value pairs from the specified map [from].\n * \n public fun putAll(from: Map<out K, V>): Unit\n\n /** \n
* Removes all elements from this map.\n * \n public fun clear(): Unit\n\n // Views\n /** \n * Returns a
[MutableSet] of all keys in this map.\n * \n override val keys: MutableSet<K>\n\n /** \n * Returns a
[MutableCollection] of all values in this map.

Note that this collection may contain duplicate values.\n * \n override val values: MutableCollection<V>\n\n
/** \n * Returns a [MutableSet] of all key/value pairs in this map.\n * \n override val entries:
MutableSet<MutableMap.MutableEntry<K, V>>\n\n /** \n * Represents a key/value pair held by a
[MutableMap].\n * \n public interface MutableEntry<K, V> : Map.Entry<K, V> {\n /** \n * Changes
the value associated with the key of this entry.\n * \n * @return the previous value corresponding to the
key.\n * \n public fun setValue(newValue: V): V\n }\n\n\n"/* \n * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n * \n\n// Auto-generated file. DO NOT EDIT!\n\npackage
kotlin.collections\n\n/** An iterator over a sequence of values of type `Byte`. */\npublic abstract
class ByteIterator : Iterator<Byte> {\n override final fun next() = nextByte()\n\n /** Returns the next value in
the sequence without boxing. */\n public abstract fun nextByte(): Byte\n}\n\n/** An iterator over a sequence of
values of type `Char`. */\npublic abstract class CharIterator : Iterator<Char> {\n override final fun next() =
nextChar()\n\n /** Returns the next value in the sequence without boxing. */\n public abstract fun nextChar():
Char\n}\n\n/** An iterator over a sequence of values of type `Short`. */\npublic abstract class ShortIterator :
Iterator<Short> {\n override final fun next() = nextShort()\n\n /** Returns the next value in the sequence without
boxing. */\n public abstract fun nextShort(): Short\n}\n\n/** An iterator over a sequence of values of type `Int`.
*/\npublic abstract class IntIterator : Iterator<Int> {\n override final fun next() = nextInt()\n\n /** Returns the
next value in the sequence without boxing. */\n public
abstract fun nextInt(): Int\n}\n\n/** An iterator over a sequence of values of type `Long`. */\npublic abstract class
LongIterator : Iterator<Long> {\n override final fun next() = nextLong()\n\n /** Returns the next value in the
sequence without boxing. */\n public abstract fun nextLong(): Long\n}\n\n/** An iterator over a sequence of
values of type `Float`. */\npublic abstract class FloatIterator : Iterator<Float> {\n override final fun next() =
nextFloat()\n\n /** Returns the next value in the sequence without boxing. */\n public abstract fun nextFloat():
Float\n}\n\n/** An iterator over a sequence of values of type `Double`. */\npublic abstract class DoubleIterator :
Iterator<Double> {\n override final fun next() = nextDouble()\n\n /** Returns the next value in the sequence
without boxing. */\n public abstract fun nextDouble(): Double\n}\n\n/** An iterator over a sequence of values of
type `Boolean`. */\npublic abstract class BooleanIterator : Iterator<Boolean>
{\n override final fun next() = nextBoolean()\n\n /** Returns the next value in the sequence without boxing. */\n
public abstract fun nextBoolean(): Boolean\n}\n\n\n"/* \n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n\n// Auto-generated file. DO NOT EDIT!\n\npackage
kotlin.ranges\n\n/** \n * An iterator over a progression of values of type `Char`. \n * @property step the number by
which the value is incremented on each step.\n * \ninternal class CharProgressionIterator(first: Char, last: Char, val
step: Int) : CharIterator() {\n private val finalElement: Int = last.code\n private var hasNext: Boolean = if (step >
0) first <= last else first >= last\n private var next: Int = if (hasNext) first.code else finalElement\n\n override fun
hasNext(): Boolean = hasNext\n\n override fun nextChar(): Char {\n

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        val value = next\n        if (value == finalElement) {\n            if (!hasNext) throw
kotlin.NoSuchElementException()\n            hasNext = false\n        }\n        else {\n            next += step\n        }\n    return value.toChar()\n    }\n}\n\n/**\n * An iterator over a progression of values of type `Int`.\n * @property step
the number by which the value is incremented on each step.\n */\ninternal class IntProgressionIterator(first: Int, last:
Int, val step: Int) : IntIterator() {\n    private val finalElement: Int = last\n    private var hasNext: Boolean = if (step >
0) first <= last else first >= last\n    private var next: Int = if (hasNext) first else finalElement\n\n    override fun
hasNext(): Boolean = hasNext\n\n    override fun nextInt(): Int {\n        val value = next\n        if (value ==
finalElement) {\n            if (!hasNext) throw kotlin.NoSuchElementException()\n            hasNext = false\n        }\n        else {\n            next += step\n        }\n    }\n    return value\n    }\n}\n\n/**\n * An iterator over a progression of values of type `Long`.\n * @property
step the number by which the value is incremented on each step.\n */\ninternal class LongProgressionIterator(first:
Long, last: Long, val step: Long) : LongIterator() {\n    private val finalElement: Long = last\n    private var
hasNext: Boolean = if (step > 0) first <= last else first >= last\n    private var next: Long = if (hasNext) first else
finalElement\n\n    override fun hasNext(): Boolean = hasNext\n\n    override fun nextLong(): Long {\n        val
value = next\n        if (value == finalElement) {\n            if (!hasNext) throw kotlin.NoSuchElementException()\n           
hasNext = false\n        }\n        else {\n            next += step\n        }\n        return value\n    }\n}\n}\n\n","/**\n *
Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found
in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin.ranges\n\nimport
kotlin.internal.getProgressionLastElement\n\n/**\n * A progression of values of type `Char`.\n */\npublic open class
CharProgression\n    internal constructor\n        (\n            start: Char,\n            endInclusive: Char,\n            step: Int\n        ) : Iterable<Char> {\n    init {\n        if (step == 0) throw kotlin.IllegalArgumentException("\u0027Step must be non-
zero.\u0027")\n        if (step == Int.MIN_VALUE) throw kotlin.IllegalArgumentException("\u0027Step must be greater than
Int.MIN_VALUE to avoid overflow on negation.\u0027")\n    }\n\n    /**\n     * The first element in the progression.\n     */\n    public val first: Char = start\n\n    /**\n     * The last element in the progression.\n     */\n    public val last:
Char = getProgressionLastElement(start.code, endInclusive.code, step).toChar()\n\n    /**\n     * The step of the
progression.\n     */\n    public val step: Int
= step\n\n    override fun iterator(): CharIterator = CharProgressionIterator(first, last, step)\n\n    /**\n     * Checks if
the progression is empty.\n     */\n    * Progression with a positive step is empty if its first element is greater than the
last element.\n     * Progression with a negative step is empty if its first element is less than the last element.\n     */\n    public open fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun equals(other:
Any?): Boolean =\n        other is CharProgression && (isEmpty() && other.isEmpty()) ||\n        first == other.first
&& last == other.last && step == other.step\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 *
(31 * first.code + last.code) + step)\n\n    override fun toString(): String = if (step > 0) \"\$first..\$last step \$step\" else
\"\$first downTo \$last step \${-step}\"\n\n    companion object {\n        /**\n         * Creates CharProgression within
the specified bounds
of a closed range.\n         */\n        * The progression starts with the [rangeStart] value and goes toward the
[rangeEnd] value not excluding it, with the specified [step].\n         * In order to go backwards the [step] must be
negative.\n         */\n        * [step] must be greater than `Int.MIN_VALUE` and not equal to zero.\n         */\n        public fun fromClosedRange(rangeStart: Char, rangeEnd: Char, step: Int): CharProgression =
CharProgression(rangeStart, rangeEnd, step)\n    }\n}\n\n/**\n * A progression of values of type `Int`.\n */\npublic
open class IntProgression\n    internal constructor\n        (\n            start: Int,\n            endInclusive: Int,\n            step:
Int\n        ) : Iterable<Int> {\n    init {\n        if (step == 0) throw kotlin.IllegalArgumentException("\u0027Step must be non-
zero.\u0027")\n        if (step == Int.MIN_VALUE) throw kotlin.IllegalArgumentException("\u0027Step must be greater than
Int.MIN_VALUE to avoid overflow on negation.\u0027")\n    }\n\n    /**\n     * The first element in the progression.\n     */\n    public val first: Int = start\n\n    /**\n     * The last element in
the progression.\n     */\n    public val last: Int = getProgressionLastElement(start, endInclusive, step)\n\n    /**\n     *
The step of the progression.\n     */\n    public val step: Int = step\n\n    override fun iterator(): IntIterator =

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IntProgressionIterator(first, last, step)\n\n /**\n * Checks if the progression is empty.\n *\n * Progression
with a positive step is empty if its first element is greater than the last element.\n * Progression with a negative
step is empty if its first element is less than the last element.\n */\n public open fun isEmpty(): Boolean = if
(step > 0) first > last else first < last\n\n override fun equals(other: Any?): Boolean =\n other is IntProgression
&& (isEmpty() && other.isEmpty()) ||\n first == other.first && last == other.last && step == other.step)\n\n
override fun hashCode():
Int =\n if (isEmpty()) -1 else (31 * (31 * first + last) + step)\n\n override fun toString(): String = if (step > 0)
\"$first..$last step $step\" else \"$first downTo $last step ${-step}\"
companion object {\n /**\n *
Creates IntProgression within the specified bounds of a closed range.\n *\n * The progression starts with
the [rangeStart] value and goes toward the [rangeEnd] value not excluding it, with the specified [step].\n *\n * In
order to go backwards the [step] must be negative.\n *\n * [step] must be greater than `Int.MIN_VALUE`
and not equal to zero.\n */\n public fun fromClosedRange(rangeStart: Int, rangeEnd: Int, step: Int):
IntProgression = IntProgression(rangeStart, rangeEnd, step)\n }\n}\n\n/**\n * A progression of values of type
`Long`.\n */\npublic open class LongProgression\n internal constructor\n (\n start: Long,\n
endInclusive: Long,\n
step: Long\n ): Iterable<Long> {\n init {\n if (step == 0L) throw kotlin.IllegalArgumentException(\"Step
must be non-zero.\")\n if (step == Long.MIN_VALUE) throw kotlin.IllegalArgumentException(\"Step must be
greater than Long.MIN_VALUE to avoid overflow on negation.\")\n }\n\n /**\n * The first element in the
progression.\n */\n public val first: Long = start\n\n /**\n * The last element in the progression.\n */\n
public val last: Long = getProgressionLastElement(start, endInclusive, step)\n\n /**\n * The step of the
progression.\n */\n public val step: Long = step\n\n override fun iterator(): LongIterator =
LongProgressionIterator(first, last, step)\n\n /**\n * Checks if the progression is empty.\n *\n *
Progression with a positive step is empty if its first element is greater than the last element.\n * Progression with a
negative step is empty if its first element is less than the last element.\n
*/\n public open fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n override fun
equals(other: Any?): Boolean =\n other is LongProgression && (isEmpty() && other.isEmpty()) ||\n first ==
other.first && last == other.last && step == other.step)\n\n override fun hashCode(): Int =\n if (isEmpty()) -1
else (31 * (31 * (first xor (first ushr 32)) + (last xor (last ushr 32))) + (step xor (step ushr 32))).toInt()\n\n
override fun toString(): String = if (step > 0) \"$first..$last step $step\" else \"$first downTo $last step ${-step}\"
companion object {\n /**\n * Creates LongProgression within the specified bounds of a closed range.\n
*\n * The progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it,
with the specified [step].\n *\n * In order to go backwards the [step] must be negative.\n *\n * [step] must
be greater than `Long.MIN_VALUE`
and not equal to zero.\n */\n public fun fromClosedRange(rangeStart: Long, rangeEnd: Long, step: Long):
LongProgression = LongProgression(rangeStart, rangeEnd, step)\n }\n}\n\n"/\n\n * Copyright 2010-2019
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.ranges\n\n/**\n *
Represents a range of values (for example, numbers or characters).\n * See the [Kotlin language
documentation](https://kotlinlang.org/docs/reference/ranges.html) for more information.\n */\npublic interface
ClosedRange<T: Comparable<T>> {\n /**\n * The minimum value in the range.\n */\n public val start:
T\n\n /**\n * The maximum value in the range (inclusive).\n */\n public val endInclusive: T\n\n /**\n *
Checks whether the specified [value] belongs to the range.\n */\n public operator fun contains(value:
T): Boolean = value >= start && value <= endInclusive\n\n /**\n * Checks whether the range is empty.\n *\n *
The range is empty if its start value is greater than the end value.\n */\n public fun isEmpty(): Boolean =
start > endInclusive\n }\n\n"/\n\n * Copyright 2010-2015 JetBrains s.r.o.\n *\n * Licensed under the Apache License,
Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by
applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"

```

BASIS, \n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language governing permissions and \n * limitations under the License. \n */ \n \n package kotlin \n \n /** \n * The type with only one value: the `Unit` object. This type corresponds to the `void` type in Java. \n */ \n public object Unit { \n override fun toString() = "kotlin.Unit" \n } \n \n * Copyright 2010-2015 JetBrains s.r.o. \n * Licensed under the Apache License, Version 2.0 (the "License"); \n * you may not use this file except in compliance with the License. \n * You may obtain a copy of the License at \n * http://www.apache.org/licenses/LICENSE-2.0 \n * Unless required by applicable law or agreed to in writing, software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language governing permissions and \n * limitations under the License. \n */ \n \n package kotlin.annotation \n \n import kotlin.annotation.AnnotationTarget.* \n \n /** \n * Contains the list of code elements which are the possible annotation targets \n */ \n public enum class AnnotationTarget { \n /** Class, interface or object, annotation class is also included \n */ \n CLASS, \n /** Annotation class only \n */ \n ANNOTATION_CLASS, \n /** Generic type parameter \n */ \n TYPE_PARAMETER, \n /** Property \n */ \n PROPERTY, \n /** Field, including property's backing field \n */ \n FIELD, \n /** Local variable \n */ \n LOCAL_VARIABLE, \n /** Value parameter of a function or a constructor \n */ \n VALUE_PARAMETER, \n /** Constructor only (primary or secondary) \n */ \n CONSTRUCTOR, \n /** Function (constructors are not included) \n */ \n FUNCTION, \n /** Property getter only \n */ \n PROPERTY_GETTER, \n /** Property setter only \n */ \n PROPERTY_SETTER, \n /** Type usage \n */ \n TYPE, \n /** Any expression \n */ \n EXPRESSION, \n /** File \n */ \n FILE, \n /** Type alias \n */ \n TYPEALIAS \n } \n \n /** \n * Contains the list of possible annotation's retentions. \n * Determines how an annotation is stored in binary output. \n */ \n public enum class AnnotationRetention { \n /** Annotation isn't stored in binary output \n */ \n SOURCE, \n /** Annotation is stored in binary output, but invisible for reflection \n */ \n BINARY, \n /** Annotation is stored in binary output and visible for reflection (default retention) \n */ \n RUNTIME \n } \n \n /** \n * This meta-annotation indicates the kinds of code elements which are possible targets of an annotation. \n * If the target meta-annotation is not present on an annotation declaration, the annotation is applicable to the following elements: \n * [CLASS], [PROPERTY], [FIELD], [LOCAL_VARIABLE], [VALUE_PARAMETER], [CONSTRUCTOR], [FUNCTION], [PROPERTY_GETTER], [PROPERTY_SETTER]. \n * @property allowedTargets list of allowed annotation targets \n */ \n @Target(AnnotationTarget.ANNOTATION_CLASS) \n @MustBeDocumented \n public annotation class Target(vararg val allowedTargets: AnnotationTarget) \n \n /** \n * This meta-annotation determines whether an annotation is stored in binary output and visible for reflection. By default, both are true. \n * @property value necessary annotation retention (RUNTIME, BINARY or SOURCE) \n */ \n @Target(AnnotationTarget.ANNOTATION_CLASS) \n public annotation class Retention(val value: AnnotationRetention = AnnotationRetention.RUNTIME) \n \n /** \n * This meta-annotation determines that an annotation is applicable twice or more on a single code element \n */ \n @Target(AnnotationTarget.ANNOTATION_CLASS) \n public annotation class Repeatable \n \n /** \n * This meta-annotation determines that an annotation is a part of public API and therefore should be included in the generated \n * documentation for the element to which the annotation is applied. \n */ \n @Target(AnnotationTarget.ANNOTATION_CLASS) \n public annotation class MustBeDocumented \n \n * Copyright 2010-2016 JetBrains s.r.o. \n * Licensed under the Apache License, Version 2.0 (the "License"); \n * you may not use this file except in compliance with the License. \n * You may obtain a copy of the License at \n * http://www.apache.org/licenses/LICENSE-2.0 \n * Unless required by applicable law or agreed to in writing, software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language governing permissions and \n * limitations under the License. \n */ \n \n package kotlin.internal \n \n /** \n * Specifies that the corresponding type parameter is not used for

unsafe operations such as casts or 'is' checks\n * That means it's completely safe to use generic types as argument for such parameter.\n

```
*\n@Target(AnnotationTarget.TYPE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class PureReifiable\n\n/**\n * Specifies that the corresponding built-in method exists depending on platform.\n * Current implementation for JVM looks whether method with same JVM descriptor exists in the module JDK.\n * For example MutableMap.remove(K, V) available only if corresponding\n * method 'java/util/Map.remove(Ljava/lang/Object;Ljava/lang/Object;)Z' is defined in JDK (i.e. for major versions >= 8)\n
```

```
*\n@Target(AnnotationTarget.FUNCTION)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class PlatformDependent\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.internal\n\n// a mod b (in arithmetical sense)\nprivate fun mod(a: Int, b: Int): Int {\n    val mod = a % b\n    return if (mod >= 0) mod else mod + b\n}\n\nprivate fun mod(a: Long, b: Long): Long {\n    val mod = a % b\n    return if (mod >= 0) mod else mod + b\n}\n\n// (a - b) mod c\nprivate fun differenceModulo(a: Int, b: Int, c: Int): Int {\n    return mod(mod(a, c) - mod(b, c), c)\n}\n\nprivate fun differenceModulo(a: Long, b: Long, c: Long): Long {\n    return mod(mod(a, c) - mod(b, c), c)\n}\n\n/**\n * Calculates the final element of a bounded
```

```
arithmetic progression, i.e. the last element of the progression which is in the range\n * from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n * No validation on passed parameters is performed. The given parameters should satisfy the condition:\n * - either `step > 0` and `start <= end`,\n * - or `step < 0` and `start >= end`.\n * @param start first element of the progression\n * @param end ending bound for the progression\n * @param step increment, or difference of successive elements in the progression\n * @return the final element of the progression\n * @suppress\n */\n@PublishedApi\ninternal fun getProgressionLastElement(start: Int, end: Int, step: Int): Int = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end, start, step)\n    step < 0 -> if (start <= end) end else end + differenceModulo(start, end, -step)\n    else -> throw kotlin.IllegalArgumentException("Step is zero.")\n}\n
```

```
* Calculates the final element of a bounded arithmetic progression, i.e. the last element of the progression which is in the range\n * from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n * No validation on passed parameters is performed. The given parameters should satisfy the condition:\n * - either `step > 0` and `start <= end`,\n * - or `step < 0` and `start >= end`.\n * @param start first element of the progression\n * @param end ending bound for the progression\n * @param step increment, or difference of successive elements in the progression\n * @return the final element of the progression\n * @suppress\n */\n@PublishedApi\ninternal fun getProgressionLastElement(start: Long, end: Long, step: Long): Long = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end, start, step)\n    step < 0 -> if (start <= end) end else end + differenceModulo(start, end, -step)\n    else -> throw
```

```
kotlin.IllegalArgumentException("Step is zero.")\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@JsName("arrayIterator")\ninternal fun arrayIterator(array: dynamic, type: String?) = when (type) {\n    null -> {\n        val arr: Array<dynamic> = array\n        object : Iterator<dynamic> {\n            var index = 0\n            override fun hasNext() = index < arr.size\n            override fun next() = if (index < arr.size) arr[index++] else throw NoSuchElementException("$index")\n        }\n    }\n    "BooleanArray" -> booleanArrayIterator(array)\n    "ByteArray" -> byteArrayIterator(array)\n    "ShortArray" -> shortArrayIterator(array)\n    "CharArray" -> charArrayIterator(array)\n    "IntArray" -> intArrayIterator(array)\n    "LongArray" -> longArrayIterator(array)\n    "FloatArray" -> floatArrayIterator(array)\n
```

```
\n    "DoubleArray" -> doubleArrayIterator(array)\n    else -> throw IllegalStateException("Unsupported type argument for arrayIterator: $type")\n}\n\n@JsName("booleanArrayIterator")\ninternal fun booleanArrayIterator(array: BooleanArray) = object : BooleanIterator() {\n    var index = 0\n    override fun
```

```

hasNext() = index < array.size\n  override fun nextBoolean() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("byteArrayIterator")\ninternal fun byteArrayIterator(array:
ByteArray) = object : ByteIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override
fun nextByte() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("shortArrayIterator")\ninternal fun
shortArrayIterator(array: ShortArray) = object : ShortIterator() {\n  var index = 0\n  override fun hasNext() =
index < array.size\n  override fun nextShort()
= if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("charArrayIterator")\ninternal fun charArrayIterator(array:
CharArray) = object : CharIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override
fun nextChar() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("intArrayIterator")\ninternal fun intArrayIterator(array:
IntArray) = object : IntIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n  override fun
nextInt() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("floatArrayIterator")\ninternal fun
floatArrayIterator(array: FloatArray) = object : FloatIterator() {\n  var index = 0\n  override fun hasNext() = index
< array.size\n  override fun nextFloat() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("doubleArrayIterator")\ninternal
fun doubleArrayIterator(array: DoubleArray) = object : DoubleIterator() {\n  var index = 0\n  override fun
hasNext() = index < array.size\n  override fun nextDouble() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("longArrayIterator")\ninternal fun longArrayIterator(array:
LongArray) = object : LongIterator() {\n  var index = 0\n  override fun hasNext() = index < array.size\n
override fun nextLong() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("PropertyMetadata")\ninternal class
PropertyMetadata(@JsName("callableName") val name:
String)\n\n@JsName("noWhenBranchMatched")\ninternal fun noWhenBranchMatched(): Nothing = throw
NoWhenBranchMatchedException()\n\n@JsName("subSequence")\ninternal fun subSequence(c: CharSequence,
startIndex: Int, endIndex: Int): CharSequence {\n  if (c is String) {\n    return c.substring(startIndex,
endIndex)\n  } else {\n    return c.asDynamic().`subSequence_vux9f0$`(startIndex, endIndex)\n
}\n}\n\n@JsName("captureStack")\ninternal fun captureStack(@Suppress("UNUSED_PARAMETER")
baseClass: JsClass<in Throwable>, instance: Throwable) {\n  if (js("Error").captureStackTrace) {\n    // Using
uncropped stack traces due to KT-37563.\n    // Precise stack traces are implemented in JS IR compiler and
stdlib\n    js("Error").captureStackTrace(instance);\n  } else {\n    instance.asDynamic().stack = js("new
Error()").stack;\n  }\n}\n\n@JsName("newThrowable")\ninternal fun newThrowable(message: String?, cause:
Throwable?): Throwable {\n  val throwable = js("new Error()")\n  throwable.message = if (jsTypeOf(message)
== "undefined") {\n    if (cause != null) cause.toString() else null\n  } else {\n    message\n  }\n
throwable.cause = cause\n  throwable.name = "Throwable"\n  return
throwable\n}\n\n@JsName("BoxedChar")\ninternal
class BoxedChar(val c: Int) : Comparable<Int> {\n  override fun equals(other: Any?): Boolean {\n    return
other is BoxedChar && c == other.c\n  }\n\n  override fun hashCode(): Int {\n    return c\n  }\n\n  override
fun toString(): String {\n    return js("this.c").unsafeCast<Char>().toString()\n  }\n\n  override fun
compareTo(other: Int): Int {\n    return js("this.c - other").unsafeCast<Int>()\n  }\n}\n\n
@JsName("valueOf")\n  public fun valueOf(): Int {\n    return c\n
}\n}\n\n@kotlin.internal.InlineOnly\ninternal inline fun <T> concat(args: Array<T>): T {\n  val typed =
js("Array")(args.size)\n  for (i in args.indices) {\n    val arr = args[i]\n    if (arr !is Array<*>) {\n
typed[i] = js("[]").slice.call(arr)\n    } else {\n    typed[i] = arr\n    }\n  }\n  return
js("[]").concat.apply(js("[]"), typed);\n}\n\n/** Concat regular Array's and TypedArray's into an Array.\n
*/\n\n@PublishedApi\n@JsName("arrayConcat")\n@Suppress("UNUSED_PARAMETER")\ninternal

```

```

fun <T> arrayConcat(a: T, b: T): T {
    return concat(js("arguments"))
}

/** Concat primitive arrays. Main
use: prepare vararg arguments.
 * For compatibility with 1.1.0 the arguments may be a mixture of Array's and
TypedArray's.
 * If the first argument is TypedArray (Byte-, Short-, Char-, Int-, Float-, and DoubleArray)
returns a TypedArray, otherwise an Array.
 * If the first argument has the $type$ property (Boolean-, Char-, and
LongArray) copy its value to result.$type$.
 * If the first argument is a regular Array without the $type$ property
default to arrayConcat.

*/
@PublishedApi
@JsName("primitiveArrayConcat")
@Suppress("UNUSED_PARAMETER")
internal fun <T> primitiveArrayConcat(a: T, b: T): T {
    val args: Array<T> = js("arguments")
    if (a is Array<*> &&
a.asDynamic().`$type$` === undefined) {
        return concat(args)
    } else {
        var size = 0
        for (i in args.indices) {
            size += args[i].asDynamic().length as Int
        }
        val result = js("new
a.constructor(size)")
        kotlin.copyArrayType(a, result)
        size = 0
        for (i in args.indices) {
            val
arr = args[i].asDynamic()
            for (j in 0 until arr.length) {
                result[size++] = arr[j]
            }
        }
        return result
    }
}

@JsName("booleanArrayOf")
internal fun booleanArrayOf() =
withType("BooleanArray", js("[].slice.call(arguments)"))
@JsName("charArrayOf") // The arguments have
to be slice'd here because of Rhino (see KT-16974)
internal fun charArrayOf() = withType("CharArray", js("new
Uint16Array([].slice.call(arguments)"))
@JsName("longArrayOf")
internal fun longArrayOf() =
withType("LongArray",
js("[].slice.call(arguments)"))
@JsName("withType")
@kotlin.internal.InlineOnly
internal inline fun
withType(type: String, array: dynamic):
dynamic {
    array.`$type$` = type
    return array
}

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Programming Language contributors.
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found in the license/LICENSE.txt file.
 */
@npackage kotlin.js
/** Function corresponding to JavaScript's
`typeof` operator
 */
@kotlin.internal.InlineOnly
@Suppress("UNUSED_PARAMETER")
public inline fun
jsTypeOf(a: Any?): String = js("typeof a")

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found in the license/LICENSE.txt file.
 */
@file:Suppress("UNUSED_PARAMETER",
"NOTHING_TO_INLINE")
@npackage kotlin
/** Returns an empty array of the specified type [T].
 */
public inline fun <T> emptyArray(): Array<T> = js("[]")
@library
public fun <T> arrayOf(vararg
elements: T): Array<T> = definedExternally
@library
public fun
doubleArrayOf(vararg elements: Double): DoubleArray = definedExternally
@library
public fun
floatArrayOf(vararg elements: Float): FloatArray = definedExternally
@library
public fun
longArrayOf(vararg elements: Long): LongArray = definedExternally
@library
public fun
intArrayOf(vararg elements: Int):
IntArray = definedExternally
@library
public fun
charArrayOf(vararg elements: Char): CharArray =
definedExternally
@library
public fun
shortArrayOf(vararg elements: Short): ShortArray =
definedExternally
@library
public fun
byteArrayOf(vararg elements: Byte): ByteArray =
definedExternally
@library
public fun
booleanArrayOf(vararg elements: Boolean): BooleanArray =
definedExternally
/** Creates a new instance of the [Lazy] that uses the specified initialization function
[initializer].
 */
public actual fun <T> lazy(initializer: () -> T): Lazy<T> = UnsafeLazyImpl(initializer)
/** Creates a new instance of the [Lazy] that uses
the specified initialization function [initializer].
 */
public actual fun <T>
lazy(mode: LazyThreadSafetyMode, initializer: () -> T): Lazy<T> = UnsafeLazyImpl(initializer)
/** Creates
a new instance of the [Lazy] that uses the specified initialization function [initializer].
 */
public actual fun <T>
lazy(lock: Any?, initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)
internal fun fillFrom(src: dynamic, dst: dynamic): dynamic {
    val srcLen: Int =
src.length
    val dstLen: Int = dst.length
    var index: Int = 0
    while (index < srcLen && index < dstLen)
dst[index] = src[index++]
    return dst
}
internal fun arrayCopyResize(source: dynamic, newSize: Int,
defaultValue: Any?): dynamic {
    val result = source.slice(0, newSize)
    copyArrayType(source, result)
    var
index: Int = source.length
    if (newSize > index) {
        result.length = newSize
    }
}

```



```

    while (index < newSize) result[index++] = defaultValue\n    }\n    return result\n}\n\ninternal fun <T>
arrayPlusCollection(array: dynamic, collection: Collection<T>): dynamic {\n    val result = array.slice()\n
result.length += collection.size\n    copyArrayType(array, result)\n    var index: Int = array.length\n    for (element in
collection) result[index++] = element\n    return result\n}\n\ninternal fun <T> fillFromCollection(dst: dynamic,
startIndex: Int, collection: Collection<T>): dynamic {\n    var index = startIndex\n    for (element in collection)
dst[index++] = element\n    return dst\n}\n\ninternal inline fun copyArrayType(from: dynamic, to: dynamic) {\n    if
(from.`$type$` !== undefined) {\n        to.`$type$` = from.`$type$`\n    }\n}\n\ninternal inline fun jsIsType(obj:
dynamic, jsClass: dynamic) = js("Kotlin").isType(obj, jsClass)", /*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by
the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Creates
a Char with the specified [code].\n */\n * @sample samples.text.Chars.charFromCode\n
*/\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun Char(code: UShort): Char {\n    return code.toInt().toChar()\n}\n\n", /*\n * Copyright 2010-2018
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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@SinceKotlin("1.3")\n@JsName("CoroutineImpl")\n
\ninternal abstract class CoroutineImpl(private val resultContinuation: Continuation<Any?>) : Continuation<Any?>
{\n    protected var state = 0\n    protected var exceptionState = 0\n    protected var result: Any? = null\n    protected
var exception:
Throwable? = null\n    protected var finallyPath: Array<Int>? = null\n\n    public override val context:
CoroutineContext = resultContinuation.context\n\n    private var intercepted_: Continuation<Any?>? = null\n\n    public
fun intercepted(): Continuation<Any?> =\n        intercepted_\n        ?:\n    (context[ContinuationInterceptor]?.interceptContinuation(this) ?: this)\n        .also { intercepted_ = it }\n\n    override fun resumeWith(result: Result<Any?>) {\n        var current = this\n        var currentResult: Any? =
result.getOrNull()\n        var currentException: Throwable? = result.exceptionOrNull()\n        // This loop unrolls
recursion in current.resumeWith(param) to make saner and shorter stack traces on resume\n        while (true) {\n
            with(current) {\n                val completion = resultContinuation\n                // Set result and exception fields in
the current continuation\n                if (currentException == null) {\n
                    this.result = currentResult\n                } else {\n                    state = exceptionState\n                    exception =
currentException\n                }\n                try {\n                    val outcome = doResume()\n                    if (outcome
=== COROUTINE_SUSPENDED) return\n                    currentResult = outcome\n                    currentException =
null\n                } catch (exception: dynamic) { // Catch all exceptions\n                    currentResult = null\n
                    currentException = exception.unsafeCast<Throwable>()\n                }\n                releaseIntercepted() // this state
machine instance is terminating\n                if (completion is CoroutineImpl) {\n                    // unrolling recursion
via loop\n                    current = completion\n                } else {\n                    // top-level completion reached --
invoke and return\n                    currentException?.let {\n
                        completion.resumeWithException(it)\n                    } ?: completion.resume(currentResult)\n
                }\n                return\n            }\n        }\n        }\n        }\n        }\n        }\n        private fun releaseIntercepted() {\n            val intercepted =
intercepted_\n            if (intercepted != null && intercepted !== this) {\n
                context[ContinuationInterceptor]!!.releaseInterceptedContinuation(intercepted)\n            }\n            this.intercepted_ =
CompletedContinuation // just in case\n        }\n\n        protected abstract fun doResume(): Any?\n}\n\ninternal object
CompletedContinuation : Continuation<Any?> {\n    override val context: CoroutineContext\n        get() =
error("This continuation is already complete")\n\n    override fun resumeWith(result: Result<Any?>) {\n
        error("This continuation is already complete")\n    }\n\n    override fun toString(): String = "This continuation is
already complete"\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n@file:Suppress("UNCHECKED_CAST",
"RedundantVisibilityModifier")\n\npackage kotlin\n\nimport kotlin.contracts.*\nimport

```

```

kotlin.internal.InlineOnly\nimport kotlin.jvm.JvmField\nimport kotlin.jvm.JvmInline\nimport
kotlin.jvm.JvmName\n\n/**\n * A discriminated union that encapsulates a successful outcome with a value of type
[T]\n * or a failure with an arbitrary [Throwable] exception.\n *^\n@SinceKotlin("1.3")\n@JvmInline\npublic
value class Result<out T> @PublishedApi internal constructor(\n @PublishedApi\n internal val value: Any?)\n :
Serializable {\n // discovery\n\n /**\n * Returns `true` if this instance represents a successful outcome.\n *
In this case [isFailure] returns `false`.\n *^\n public val isSuccess: Boolean get() = value !is Failure\n\n /**\n
* Returns `true` if this instance represents
a failed outcome.\n * In this case [isSuccess] returns `false`.\n *^\n public val isFailure: Boolean get() =
value is Failure\n\n // value & exception retrieval\n\n /**\n * Returns the encapsulated value if this instance
represents [success][Result.isSuccess] or `null`\n * if it is [failure][Result.isFailure].\n *^\n * This function is
a shorthand for `getOrElse { null }` (see [getOrElse]) or\n * `fold(onSuccess = { it }, onFailure = { null })` (see
[fold]).\n *^\n @InlineOnly\n public inline fun getOrNull(): T? =\n when {\n isFailure -> null\n
else -> value as T\n }\n\n /**\n * Returns the encapsulated [Throwable] exception if this instance
represents [failure][isFailure] or `null`\n * if it is [success][isSuccess].\n *^\n * This function is a shorthand
for `fold(onSuccess = { null }, onFailure = { it })` (see [fold]).\n *^\n public fun exceptionOrNull(): Throwable?
=\n
when (value) {\n is Failure -> value.exception\n else -> null\n }\n\n /**\n * Returns a string
`Success(v)` if this instance represents [success][Result.isSuccess]\n * where `v` is a string representation of the
value or a string `Failure(x)` if\n * it is [failure][isFailure] where `x` is a string representation of the exception.\n
*^\n public override fun toString(): String =\n when (value) {\n is Failure -> value.toString() //
`Failure($exception)`\n else -> `Success($value)`\n }\n\n // companion with constructors\n\n /**\n
* Companion object for [Result] class that contains its constructor functions\n * [success] and [failure].\n *^\n
public companion object {\n /**\n * Returns an instance that encapsulates the given [value] as successful
value.\n *^\n @Suppress("INAPPLICABLE_JVM_NAME")\n @InlineOnly\n
@JvmName("success")\n
public inline fun <T> success(value: T): Result<T> =\n Result(value)\n\n /**\n * Returns an
instance that encapsulates the given [Throwable] [exception] as failure.\n *^\n
@Suppress("INAPPLICABLE_JVM_NAME")\n @InlineOnly\n @JvmName("failure")\n public
inline fun <T> failure(exception: Throwable): Result<T> =\n Result(createFailure(exception))\n }\n\n
internal class Failure(\n @JvmField\n val exception: Throwable\n ): Serializable {\n override fun
equals(other: Any?): Boolean = other is Failure && exception == other.exception\n override fun hashCode():
Int = exception.hashCode()\n override fun toString(): String = `Failure($exception)`\n }\n\n\n/**\n *
Creates an instance of internal marker [Result.Failure] class to\n * make sure that this class is not exposed in ABI.\n
*^\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun createFailure(exception: Throwable):
Any =\n Result.Failure(exception)\n\n/**\n * Throws exception if the result is failure. This internal function
minimizes\n * inlined bytecode for [getOrThrow] and makes sure that in the future we can\n * add some exception-
augmenting logic here (if needed).\n *^\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun
Result<*>.throwOnFailure() {\n if (value is Result.Failure) throw value.exception\n}\n\n\n/**\n * Calls the
specified function [block] and returns its encapsulated result if invocation was successful,\n * catching any
[Throwable] exception that was thrown from the [block] function execution and encapsulating it as a failure.\n
*^\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R> runCatching(block: () -> R): Result<R> {\n
return try {\n Result.success(block())\n } catch (e: Throwable) {\n Result.failure(e)\n }\n}\n\n\n/**\n *
Calls the specified function [block] with `this` value as its receiver and returns its encapsulated result if invocation
was successful,\n * catching any [Throwable] exception that was thrown from the [block] function execution and
encapsulating it as a failure.\n *^\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T, R>
T.runCatching(block: T.() -> R): Result<R> {\n return try {\n Result.success(block())\n } catch (e:
Throwable) {\n Result.failure(e)\n }\n}\n\n\n// -- extensions ---\n\n\n/**\n * Returns the encapsulated value if this
instance represents [success][Result.isSuccess] or throws the encapsulated [Throwable] exception\n * if it is

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[failure][Result.isFailure].\n *\n * This function is a shorthand for `getOrElse { throw it }` (see [getOrElse]).\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T> Result<T>.getOrThrow(): T {\n
throwOnFailure()\n    return value as T\n}\n\n/>\n *\n * Returns the encapsulated value if this instance represents
[success][Result.isSuccess] or the\n * result of [onFailure] function for the encapsulated [Throwable] exception
if it is [failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by
[onFailure] function.\n *\n * This function is a shorthand for `fold(onSuccess = { it }, onFailure = onFailure)` (see
[fold]).\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.getOrElse(onFailure:
(exception: Throwable) -> R): R {\n    contract {\n        callsInPlace(onFailure,
InvocationKind.AT_MOST_ONCE)\n    }\n    return when (val exception = exceptionOrNull()) {\n        null ->
value as T\n        else -> onFailure(exception)\n    }\n}\n\n/>\n *\n * Returns the encapsulated value if this instance
represents [success][Result.isSuccess] or the\n * [defaultValue] if it is [failure][Result.isFailure].\n *\n * This
function is a shorthand for `getOrElse { defaultValue }` (see [getOrElse]).\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.getOrDefault(defaultValue: R):
R {\n    if (isFailure) return defaultValue\n
    return value as T\n}\n\n/>\n *\n * Returns the result of [onSuccess] for the encapsulated value if this instance
represents [success][Result.isSuccess]\n * or the result of [onFailure] function for the encapsulated [Throwable]
exception if it is [failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception
thrown by [onSuccess] or by [onFailure] function.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun
<R, T> Result<T>.fold(\n    onSuccess: (value: T) -> R,\n    onFailure: (exception: Throwable) -> R\n): R {\n    contract {\n        callsInPlace(onSuccess, InvocationKind.AT_MOST_ONCE)\n        callsInPlace(onFailure,
InvocationKind.AT_MOST_ONCE)\n    }\n    return when (val exception = exceptionOrNull()) {\n        null ->
onSuccess(value as T)\n        else -> onFailure(exception)\n    }\n}\n\n/>\n *\n * Returns the
encapsulated result of the given [transform] function applied to the encapsulated value\n * if this
instance represents [success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is
[failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by
[transform] function.\n * See [mapCatching] for an alternative that encapsulates exceptions.\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T> Result<T>.map(transform: (value: T) -> R):
Result<R> {\n    contract {\n        callsInPlace(transform, InvocationKind.AT_MOST_ONCE)\n    }\n    return when
{\n        isSuccess -> Result.success(transform(value as T))\n        else -> Result(value)\n    }\n}\n\n/>\n *\n * Returns
the encapsulated result of the given [transform] function applied to the encapsulated value\n * if this instance
represents [success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is
[failure][Result.isFailure].\n *\n * This function catches any [Throwable] exception thrown by [transform] function
and encapsulates
it as a failure.\n * See [map] for an alternative that rethrows exceptions from `transform` function.\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T> Result<T>.mapCatching(transform: (value: T) -
> R): Result<R> {\n    return when {\n        isSuccess -> runCatching { transform(value as T) }\n        else ->
Result(value)\n    }\n}\n\n/>\n *\n * Returns the encapsulated result of the given [transform] function applied to the
encapsulated [Throwable] exception\n * if this instance represents [failure][Result.isFailure] or the\n * original
encapsulated value if it is [success][Result.isSuccess].\n *\n * Note, that this function rethrows any [Throwable]
exception thrown by [transform] function.\n * See [recoverCatching] for an alternative that encapsulates
exceptions.\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.recover(transform:
(exception: Throwable) -> R): Result<R> {\n    contract {\n        callsInPlace(transform,
InvocationKind.AT_MOST_ONCE)\n    }\n    return when (val exception = exceptionOrNull()) {\n        null -> this\n        else ->
Result.success(transform(exception))\n    }\n}\n\n/>\n *\n * Returns the encapsulated result of the given [transform]
function applied to the encapsulated [Throwable] exception\n * if this instance represents [failure][Result.isFailure]
or the\n * original encapsulated value if it is [success][Result.isSuccess].\n *\n * This function catches any
[Throwable] exception thrown by [transform] function and encapsulates it as a failure.\n * See [recover] for an

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alternative that rethrows exceptions.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R>
Result<T>.recoverCatching(transform: (exception: Throwable) -> R): Result<R> {\n    return when (val exception =
exceptionOrNull()) {\n        null -> this\n        else -> runCatching { transform(exception) }\n    }\n}\n\n// "peek"
onto value/exception and pipe\n\n/**\n * Performs the given [action] on the encapsulated
[Throwable] exception if this instance represents [failure][Result.isFailure].\n * Returns the original `Result`
unchanged.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T> Result<T>.onFailure(action:
(exception: Throwable) -> Unit): Result<T> {\n    contract {\n        callsInPlace(action,
InvocationKind.AT_MOST_ONCE)\n    }\n    exceptionOrNull()?.let { action(it) }\n    return this\n}\n\n/**\n * Performs the given [action] on the encapsulated value if this instance represents [success][Result.isSuccess].\n * Returns the original `Result` unchanged.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T>
Result<T>.onSuccess(action: (value: T) -> Unit): Result<T> {\n    contract {\n        callsInPlace(action,
InvocationKind.AT_MOST_ONCE)\n    }\n    if (isSuccess) action(value as T)\n    return this\n}\n\n// -----
--\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this
source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.coroutines\n\nimport kotlin.contracts.*\nimport kotlin.coroutines.intrinsics.*\nimport
kotlin.internal.InlineOnly\n\n/**\n * Interface representing a continuation after a suspension point that returns a
value of type `T`.\n *\n@SinceKotlin("1.3")\npublic interface Continuation<in T> {\n    /**\n     * The context of
the coroutine that corresponds to this continuation.\n     *\n     * public val context: CoroutineContext\n     *\n     * Resumes the execution of the corresponding coroutine passing a successful or failed [result] as the\n     * return
value of the last suspension point.\n     *\n     * public fun resumeWith(result: Result<T>)\n     *\n     * Classes and
interfaces marked with this annotation are restricted when used as receivers for extension\n     * `suspend` functions.
These `suspend` extensions can only invoke other member or extension `suspend` functions on this particular\n     * receiver and are restricted from calling arbitrary suspension functions.\n     *\n     *\n@SinceKotlin("1.3")\n@Target(AnnotationTarget.CLASS)\n@Retention(AnnotationRetention.BINARY)\npublic
annotation class RestrictsSuspension\n\n/**\n * Resumes the execution of the corresponding coroutine passing
[value] as the return value of the last suspension point.\n *\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline
fun <T> Continuation<T>.resume(value: T): Unit =\n    resumeWith(Result.success(value))\n\n/**\n * Resumes the
execution of the corresponding coroutine so that the [exception] is re-thrown right after the\n * last suspension
point.\n *\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun <T>
Continuation<T>.resumeWithException(exception: Throwable): Unit =\n    resumeWith(Result.failure(exception))\n\n/**\n * Creates a [Continuation] instance with the given [context] and
implementation of [resumeWith] method.\n *\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun <T>
Continuation(\n    context: CoroutineContext,\n    crossinline resumeWith: (Result<T>) -> Unit):
Continuation<T> =\n    object : Continuation<T> {\n        override val context: CoroutineContext\n            get() =
context\n        override fun resumeWith(result: Result<T>) =\n            resumeWith(result)\n    }\n\n/**\n * Creates
a coroutine without a receiver and with result type [T].\n * This function creates a new, fresh instance of
suspendable computation every time it is invoked.\n * To start executing the created coroutine, invoke
`resume(Unit)` on the returned [Continuation] instance.\n * The [completion] continuation is invoked when the
coroutine completes with a result or an exception.\n * Subsequent invocation of any resume function on the resulting
continuation will produce an [IllegalStateException].\n *\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <T> (suspend () ->
T).createCoroutine(\n    completion: Continuation<T>): Continuation<Unit>
=\n    SafeContinuation(createCoroutineUnintercepted(completion).intercepted(),
COROUTINE_SUSPENDED)\n\n/**\n * Creates a coroutine with receiver type [R] and result type [T].\n * This
function creates a new, fresh instance of suspendable computation every time it is invoked.\n * To start
executing the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance.\n * The
[completion] continuation is invoked when the coroutine completes with a result or an exception.\n * Subsequent

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invocation of any resume function on the resulting continuation will produce an [IllegalStateException].

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*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <R, T> (suspend R.() ->
T).createCoroutine(\n receiver: R,\n completion: Continuation<T>\n): Continuation<Unit> =\nSafeContinuation(createCoroutineUnintercepted(receiver, completion).intercepted(),
COROUTINE_SUSPENDED)\n\n/**\n * Starts a coroutine without a receiver and with result type [T].\n * This
function creates and starts a new, fresh instance of suspendable computation every time it is invoked.\n * The
[completion] continuation is invoked when the coroutine completes with a result or an exception.\n
*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <T> (suspend () ->
T).startCoroutine(\n completion: Continuation<T>\n) {\n
createCoroutineUnintercepted(completion).intercepted().resume(Unit)\n}\n\n/**\n * Starts a coroutine with receiver
type [R] and result type [T].\n * This function creates and starts a new, fresh instance of suspendable computation
every time it is invoked.\n * The [completion] continuation is invoked when the coroutine completes with a result or
an exception.\n
*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <R, T> (suspend
R.() -> T).startCoroutine(\n receiver: R,\n completion: Continuation<T>\n) {\n
createCoroutineUnintercepted(receiver, completion).intercepted().resume(Unit)\n}\n\n/**\n * Obtains
the current continuation instance inside suspend functions and suspends\n * the currently running coroutine.\n
*\n * In this function both [Continuation.resume] and [Continuation.resumeWithException] can be used either
synchronously in\n * the same stack-frame where the suspension function is run or asynchronously later in the same
thread or\n * from a different thread of execution. Subsequent invocation of any resume function will produce an
[IllegalStateException].\n
*\n@SinceKotlin("1.3")\n@InlineOnly\npublic suspend inline fun <T>
suspendCoroutine(crossinline block: (Continuation<T>) -> Unit): T {\n contract { callsInPlace(block,
InvocationKind.EXACTLY_ONCE) }\n return suspendCoroutineUninterceptedOrReturn { c: Continuation<T> -
->\n val safe = SafeContinuation(c.intercepted())\n block(safe)\n safe.getOrThrow()\n }\n}\n\n/**\n *
Returns the context of the current coroutine.\n
*\n@SinceKotlin("1.3")\n@Suppress("WRONG_MODIFIER_TARGET")\n@InlineOnly\npublic
suspend inline val coroutineContext: CoroutineContext\n get() {\n throw
NotImplementedError("Implemented as intrinsic")\n }
}"/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
*\n\npackage kotlin.coroutines.intrinsics\n\nimport
kotlin.coroutines.*\nimport kotlin.internal.InlineOnly\n\n/**\n * Starts an unintercepted coroutine without a receiver
and with result type [T] and executes it until its first suspension.\n * Returns the result of the coroutine or throws its
exception if it does not suspend or [COROUTINE_SUSPENDED] if it suspends.\n * In the latter case, the
[completion] continuation is invoked when the coroutine completes with a result or an exception.\n
*\n * The
coroutine is started directly in the invoker's thread without going through the [ContinuationInterceptor] that might\n
* be present in
the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation\n * context
is established.\n
*\n * This function is designed to be used from inside of
[suspendCoroutineUninterceptedOrReturn] to resume the execution of the suspended\n * coroutine using a reference
to the suspending function.\n
*\n@SinceKotlin("1.3")\n@InlineOnly\npublic actual inline fun <T> (suspend () ->
T).startCoroutineUninterceptedOrReturn(\n completion: Continuation<T>\n): Any? =
this.asDynamic()(completion, false)\n\n/**\n * Starts an unintercepted coroutine with receiver type [R] and result
type [T] and executes it until its first suspension.\n * Returns the result of the coroutine or throws its exception if
it does not suspend or [COROUTINE_SUSPENDED] if it suspends.\n * In the latter case, the [completion]
continuation is invoked when the coroutine completes with a result or an exception.\n
*\n * The
coroutine is started directly in the invoker's thread without
going through the [ContinuationInterceptor] that might\n * be present in the completion's [CoroutineContext]. It is
the invoker's responsibility to ensure that a proper invocation\n * context is established.\n
*\n * This function is
designed to be used from inside of [suspendCoroutineUninterceptedOrReturn] to resume the execution of the

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suspended\n * coroutine using a reference to the suspending function.\n

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*\n@SinceKotlin("1.3")\n@InlineOnly\npublic actual inline fun <R, T> (suspend R.() ->
T).startCoroutineUninterceptedOrReturn(\n receiver: R,\n completion: Continuation<T>\n): Any? =
this.asDynamic()(receiver, completion, false)\n\n@InlineOnly\ninternal actual inline fun <R, P, T> (suspend R.(P) -
> T).startCoroutineUninterceptedOrReturn(\n receiver: R,\n param: P,\n completion: Continuation<T>\n):
Any? = this.asDynamic()(receiver, param, completion, false)\n\n/**\n * Creates unintercepted coroutine without
receiver and with result type [T].\n * This function creates
a new, fresh instance of suspendable computation every time it is invoked.\n *\n * To start executing the created
coroutine, invoke `resume(Unit)` on the returned [Continuation] instance.\n * The [completion] continuation is
invoked when coroutine completes with result or exception.\n *\n * This function returns unintercepted
continuation.\n * Invocation of `resume(Unit)` starts coroutine immediately in the invoker's call stack without going
through the\n * [ContinuationInterceptor] that might be present in the completion's [CoroutineContext].\n * It is the
invoker's responsibility to ensure that a proper invocation context is established.\n * Note that [completion] of this
function may get invoked in an arbitrary context.\n *\n * [Continuation.intercepted] can be used to acquire the
intercepted continuation.\n * Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of\n
* both the coroutine and [completion] happens in the invocation context established
by\n * [ContinuationInterceptor].\n *\n * Repeated invocation of any resume function on the resulting continuation
corrupts the\n * state machine of the coroutine and may result in arbitrary behaviour or exception.\n
*/\n\n@SinceKotlin("1.3")\npublic actual fun <T> (suspend () -> T).createCoroutineUnintercepted(\n completion:
Continuation<T>\n): Continuation<Unit> =\n // Kotlin/JS suspend lambdas have an extra parameter `suspended`\n
if (this.asDynamic().length == 2) {\n // When `suspended` is true the continuation is created, but not
executed\n this.asDynamic()(completion, true)\n } else {\n
createCoroutineFromSuspendFunction(completion) {\n this.asDynamic()(completion)\n }\n }\n\n/**\n * Creates unintercepted coroutine with receiver type [R] and result type [T].\n * This function creates a new, fresh
instance of suspendable computation every time it is invoked.\n *\n * To start executing the created coroutine,
invoke `resume(Unit)`
on the returned [Continuation] instance.\n * The [completion] continuation is invoked when coroutine completes
with result or exception.\n *\n * This function returns unintercepted continuation.\n * Invocation of `resume(Unit)`
starts coroutine immediately in the invoker's call stack without going through the\n * [ContinuationInterceptor] that
might be present in the completion's [CoroutineContext].\n * It is the invoker's responsibility to ensure that a proper
invocation context is established.\n * Note that [completion] of this function may get invoked in an arbitrary
context.\n *\n * [Continuation.intercepted] can be used to acquire the intercepted continuation.\n * Invocation of
`resume(Unit)` on intercepted continuation guarantees that execution of\n * both the coroutine and [completion]
happens in the invocation context established by\n * [ContinuationInterceptor].\n *\n * Repeated invocation of any
resume function on the resulting continuation corrupts the\n * state machine of
the coroutine and may result in arbitrary behaviour or exception.\n */\n\n@SinceKotlin("1.3")\npublic actual fun
<R, T> (suspend R.() -> T).createCoroutineUnintercepted(\n receiver: R,\n completion: Continuation<T>\n):
Continuation<Unit> =\n // Kotlin/JS suspend lambdas have an extra parameter `suspended`\n if
(this.asDynamic().length == 3) {\n // When `suspended` is true the continuation is created, but not executed\n
this.asDynamic()(receiver, completion, true)\n } else {\n createCoroutineFromSuspendFunction(completion)
{\n this.asDynamic()(receiver, completion)\n }\n }\n\n/**\n * Intercepts this continuation with
[ContinuationInterceptor].\n *\n * This function shall be used on the immediate result of
[createCoroutineUnintercepted] or [suspendCoroutineUninterceptedOrReturn],\n * in which case it checks for
[ContinuationInterceptor] in the continuation's [context][Continuation.context],\n * invokes
[ContinuationInterceptor.interceptContinuation],
caches and returns the result.\n *\n * If this function is invoked on other [Continuation] instances it returns `this`
continuation unchanged.\n */\n\n@SinceKotlin("1.3")\npublic actual fun <T> Continuation<T>.intercepted():
Continuation<T> =\n (this as? CoroutineImpl)?.intercepted() ?: this\n\nprivate inline fun <T>

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createCoroutineFromSuspendFunction(\n completion: Continuation<T>,\n crossinline block: () -> Any?)\n):
Continuation<Unit> {\n @Suppress(\\"UNCHECKED_CAST\")\n return object : CoroutineImpl(completion as
Continuation<Any?>) {\n override fun doResume(): Any? {\n exception?.let { throw it }\n return
block()\n }\n }\n}\n",/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n// Mirrors signature from JS IR BE\n\n// Used for
js.translator/testData/box/number/mulInt32.kt\n\n@library\n\n@JsName(\\"imulEmulated\")\n\n@Suppress(\\"UNUSED_P
ARAMETER\")\n\ninternal fun imul(x: Int, y: Int): Int =
definedExternally\n\n\n@Suppress(\\"NOTHING_TO_INLINE\")\n\ninternal inline fun isArrayish(o: dynamic) =
js(\\"Kotlin\").isArrayish(o)\n",/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin\n\n\n// NOTE: Do not author your exceptions as they are written in
this file, instead use this template:\n\n/*\n\npublic open class MyException : Exception {\n constructor() : super()\n
constructor(message: String?) : super(message)\n constructor(message: String?, cause: Throwable?) :
super(message, cause)\n constructor(cause: Throwable?) : super(cause)\n}\n*/\n\n\n// TODO: remove primary
constructors, make all secondary KT-22055\n\n\n@Suppress(\\"USELESS_ELVIS_RIGHT_IS_NULL\")\n\npublic
actual open class Error actual constructor(message: String?, cause: Throwable?) : Throwable(message, cause ?
: null) {\n actual constructor() : this(null, null)\n actual constructor(message: String?) : this(message, null)\n
actual constructor(cause: Throwable?) : this(undefin
ed,
cause)\n}\n\n\n@Suppress(\\"USELESS_ELVIS_RIGHT_IS_NULL\")\n\npublic actual open class Exception actual
constructor(message: String?, cause: Throwable?) : Throwable(message, cause ? : null) {\n actual constructor()
: this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefin
ed, cause)\n}\n\n\npublic actual open class RuntimeException actual constructor(message:
String?, cause: Throwable?) : Exception(message, cause) {\n actual constructor() : this(null, null)\n actual
constructor(message: String?) : this(message, null)\n actual constructor(cause: Throwable?) : this(undefin
ed,
cause)\n}\n\n\npublic actual open
class IllegalArgumentException actual constructor(message: String?, cause: Throwable?) :
RuntimeException(message, cause) {\n actual constructor() : this(null, null)\n actual constructor(message:
String?) : this(message, null)\n actual constructor(cause: Throwable?) : this(undefin
ed, cause)\n}\n\n\npublic actual
open class IllegalStateException actual constructor(message: String?, cause: Throwable?) :
RuntimeException(message, cause) {\n actual constructor() : this(null, null)\n actual constructor(message:
String?) : this(message, null)\n actual constructor(cause: Throwable?) : this(undefin
ed, cause)\n}\n\n\npublic actual
open class IndexOutOfBoundsException actual constructor(message: String?) : RuntimeException(message) {\n
actual constructor() : this(null)\n}\n\n\npublic actual open class ConcurrentModificationException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n actual constructor() :
this(null, null)\n actual
constructor(message: String?) : this(message, null)\n actual constructor(cause: Throwable?) : this(undefin
ed,
cause)\n}\n\n\npublic actual open class UnsupportedOperationException actual constructor(message: String?, cause:
Throwable?) : RuntimeException(message, cause) {\n actual constructor() : this(null, null)\n actual
constructor(message: String?) : this(message, null)\n actual constructor(cause: Throwable?) : this(undefin
ed,
cause)\n}\n\n\n\npublic actual open class NumberFormatException actual constructor(message: String?) :
IllegalArgumentException(message) {\n actual constructor() : this(null)\n}\n\n\n\npublic actual open class
NullPointerException actual constructor(message: String?) : RuntimeException(message) {\n actual constructor() :
this(null)\n}\n\n\n\npublic actual open class ClassCastException actual constructor(message: String?) :
RuntimeException(message) {\n actual constructor() : this(null)\n}\n\n\n\npublic actual open class
AssertionError\n\n@SinceKotlin(\\"1.4\")\n\nconstructor(message:
String?, cause: Throwable?) : Error(message, cause) {\n actual constructor() : this(null)\n constructor(message:
String?) : this(message, null)\n actual constructor(message: Any?) : this(message.toString(), message as?

```

```

Throwable)\n}\n\npublic actual open class NoSuchElementException actual constructor(message: String?) :
RuntimeException(message) {\n  actual constructor() : this(null)\n}\n\n@SinceKotlin("1.3")\npublic actual open
class ArithmeticException actual constructor(message: String?) : RuntimeException(message) {\n  actual
constructor() : this(null)\n}\n\npublic actual open class NoWhenBranchMatchedException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n  actual constructor() :
this(null, null)\n  actual constructor(message: String?) : this(message, null)\n  actual constructor(cause:
Throwable?) : this(undefiend, cause)\n}\n\npublic actual open class UninitializedPropertyAccessException
actual constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n  actual
constructor() : this(null, null)\n  actual constructor(message: String?) : this(message, null)\n  actual
constructor(cause: Throwable?) : this(undefiend, cause)\n}\n\n"/*\n * Copyright 2010-2019 JetBrains s.r.o. Use of
this source code is governed by the Apache 2.0 license\n * that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:Suppress("UNUSED_PARAMETER")\n\npackage kotlin.js\n\n@kotlin.internal.InlineOnly\n\ninternal
inline fun jsDeleteProperty(obj: Any, property: Any) {\n  js("delete
obj[property]")\n}\n\n@kotlin.internal.InlineOnly\n\ninternal inline fun jsBitwiseOr(lhs: Any?, rhs: Any?): Int =\n
js("lhs | rhs").unsafeCast<Int>()\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage
kotlin.math\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.\n * If [sign] is `NaN` the
sign of the result is undefined.\n */\n\n@SinceKotlin("1.2")\n\npublic actual fun Double.withSign(sign: Double):
Double {\n  val thisSignBit = js("Kotlin").doubleSignBit(this).unsafeCast<Int>()\n  val newSignBit =
js("Kotlin").doubleSignBit(sign).unsafeCast<Int>()\n  return if (thisSignBit == newSignBit) this else -
this\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin\n\n/**\n * Returns a bit representation of the specified floating-point value as [Long]\n *
according to the IEEE 754 floating-point "double format" bit layout.\n */\n\n@SinceKotlin("1.2")\n\n@library("doubleToBits")\n\npublic actual fun Double.toBits(): Long =
definedExternally\n\n/**\n * Returns a bit representation
of the specified floating-point value as [Long]\n * according to the IEEE 754 floating-point "double format" bit
layout,\n * preserving `NaN` values exact layout.\n */\n\n@SinceKotlin("1.2")\n\n@library("doubleToRawBits")\n\npublic actual fun Double.toRawBits(): Long =
definedExternally\n\n/**\n * Returns the [Double] value corresponding to a given bit representation.\n */\n\n@SinceKotlin("1.2")\n\n@kotlin.internal.InlineOnly\n\npublic actual inline fun Double.Companion.fromBits(bits:
Long): Double = js("Kotlin").doubleFromBits(bits).unsafeCast<Double>()\n\n/**\n * Returns a bit representation
of the specified floating-point value as [Int]\n * according to the IEEE 754 floating-point "single format" bit
layout.\n * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout can represent,\n * so
some [Float] values may overflow, underflow or loose their accuracy after conversion to bits and back.\n */\n\n@SinceKotlin("1.2")\n\n@library("floatToBits")\n\npublic
actual fun Float.toBits(): Int = definedExternally\n\n/**\n * Returns a bit representation of the specified floating-
point value as [Int]\n * according to the IEEE 754 floating-point "single format" bit layout,\n * preserving `NaN`
values exact layout.\n * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout can
represent,\n * so some [Float] values may overflow, underflow or loose their accuracy after conversion to bits and
back.\n */\n\n@SinceKotlin("1.2")\n\n@library("floatToRawBits")\n\npublic actual fun Float.toRawBits(): Int =
definedExternally\n\n/**\n * Returns the [Float] value corresponding to a given bit representation.\n */\n\n@SinceKotlin("1.2")\n\n@kotlin.internal.InlineOnly\n\npublic actual inline fun Float.Companion.fromBits(bits:
Int): Float =
js("Kotlin").floatFromBits(bits).unsafeCast<Float>()\n\n\n@Suppress("NOTHING_TO_INLINE")\n\ninternal
inline fun Long(low: Int, high: Int) = js("Kotlin").Long.fromBits(low, high).unsafeCast<Long>()\n\ninternal

```



```

inline val Long.low: Int get() = this.asDynamic().getLowBits().unsafeCast<Int>()\ninternal inline val Long.high: Int
get() = this.asDynamic().getHighBits().unsafeCast<Int>()\n"/\n * Copyright 2010-2020 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\nimport kotlin.reflect.KClass\n\n@PublishedApi\ninternal fun
<T : Annotation> KClass<*>.findAssociatedObject(@Suppress("UNUSED_PARAMETER") annotationClass:
KClass<T>): Any? {\n // This API is not supported in js-v1. Return `null` to be source-compatible with js-ir.\n
return null\n}\n"/\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.text\n\n/**\n * Returns a string representation of this [Long] value
in the specified [radix].\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to
string conversion.\n */\n\n@SinceKotlin("1.2")\npublic actual fun Long.toString(radix: Int): String =
asDynamic().toString(checkRadix(radix))\n"/\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n/\n/\n// 1343 ranges
totally\nprivate object Category {\n val decodedRangeStart: IntArray\n val decodedRangeCategory: IntArray\n
\n init {\n val toBase64 =
\n"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/\n val fromBase64 =
IntArray(128)\n for (i in toBase64.indices) {\n fromBase64[toBase64[i].code]
= i\n }\n \n // rangeStartDiff.length = 1482\n val rangeStartDiff =
\n"gBCFEDCKCDDaDBhBCEEDDDDDDEDXBHYBH5BRwBGDCHDCIDFHDCHFDCDEIRTEE7BGHDDJI
CBbSEMOfGERwDEDDDDDECEFCRBjBhFDcYFFCCzBvBjBBFC3B0hDBmBDGpBDDcTBjBEECLGDFC
LDCgBBKVKEDiDDHCFECECKCEODBeC5CLBOKhBJDDDDWEBHFCFCPBZDEL1BVBSLPBgBB2BDB
DICFBHKCKCPDBHEDWBHEDDDDEDEDIBDGDCCKCGDDDDCGECCWBFMDDCDEDDCHDDHKDDDBK
DBHFCWBFGBDDDFEDBPDDKCHBGDCHEDWBFGBDCEDEDBHDDGDCKCGJEGDBFDDFDDDDDDME
FDBFDCGBOKDFDFDCGFCXBQDDDDDBEGEDFDDKHBHDDGFCXBKBFCEFCFCHCHECKDNCCHF
oBEDECFDDDDHDCKJBGDCSDYBJEhBFDDDEBIGKDCMuBFHEBGBIBKCKbBFBFbXEIFJDFDGCKCEgB
BDPEDGKKGECIBkBEObDFLbKBIBIBEFCECIBrBCEBEGDBKGGDDDDDDCHDENDCFEKDDIBDDFrBCD
pKBECGEECPBBEChBBECGEECPB5BBECjCCDJUDQKG2CCGDsTCRbaCDrCDDIHNBEDLSDCJSCMLFC
CM0BDHGLFBFDDKKGKGEFDDDBKGjBB1BHfChBDFmCKfDDDDDDDCGDCFDKcCFLsBEaGKBDiBXDDD1
BDGDEIGJEKGGHGBGCMF/BEBvBCEDDFHEKHKJDDDeDDGDkSbFEDCIEkBIICCFDKDDKeGcJHrBCDI
IDBNBHEBEFDBFsB/BNBiBIB6BBF1EiDjJGCGCIIIIGCGCIIIIOCIIIIDFEDDBFEDDDDEBDIFDDFEDBLF
GCEEICFBjCDEDCLDKBFBKCCGDDKDDNDgBQNEBDMPPFFDEDEBFFHECEBEEDFBEDDQjBCEDEFFC
CJHBeEEfsIIEUCHCxCBeZoBGICZLV8BuCW3FBjB2BIvDB4HOesBFcFKQgJjEW/BEgBCiIwBVCGnBCgBBp
DvBBuBEDBHEFGCCjDCGEDCFCFIBDDF4BhCOBXJhBhBhBhBhBhBhBhBhBgBCECGHGEDI FBKCEDM
EtBaB5CM2GaMEDDCKCGFCJEDFDDDC2CDDDB6CDcFrBB+CDEKgBkBMQfBKeIBPgBKnbPgKguGgC9
vUDVB3jBD3BJoBGCsIBDQKCUuBDDKcCCmCKCGIXJCNC/BBHGKDECEVFBEMCEEbqBDDGDFDXD
CEBDGEG0BEICyBQCICKGSGDEBKcICXLCLbDDBvBDECCDNCKECFcJKFBpBFEDCJDBICCKCEQBG
DDByBEDCEFBYDcLEDDCKGCGGJhBhBrBBEJDEwCjBIDCKGk9KMxExBEggCgoGuLcQdMBHMFFC
KBNBFBI sDQRrLCQgCC2BoBMCCQGEgQDCQDDDDDFDGDECEEFBnEEBFEDCKCDDaDBfCKBtBCf
DGCGCFEDDDDCCKDC\n"
\n val diff = decodeVarLenBase64(rangeStartDiff, fromBase64, 1342)\n val start = IntArray(diff.size + 1)\n
for (i in diff.indices) {\n start[i + 1] = start[i] + diff[i]\n }\n decodedRangeStart = start\n \n
\n // rangeCategory.length = 2033\n val rangeCategory =
\n"PsY44a41W54UYJZYB14W7XC15WZPsYa84bl9Zw8b85Lr7C44brlerrYBZBCZCiBiBiBhCiiBhChiBhiCBhh
ChiCihBhChCChiBhChiCIBCFhjCiBiBihDhiBhCCihBiBhCCFCEbEbEb7EbGhCk7BixRkiCi4BRbh4BhRhCBR
BCiiBBcIBChiZBCBCiBcGHhChCiBRBxxEYc40Rx8c6RGUm4GRFRFYRQZ44acG4wRYFEFGJYIIIGFIYGwc
GmkEmcGFJfJ8cYxwFGFGRFGFRJFGkkcYkxRm6aFGEgmmEmEGRYRFGxxYFRFRFRGQGIFmIFIGIooGF

```



```

    decodedRangeCategory = decodeVarLenBase64(rangeCategory, fromBase64, 222)\n    }\n}\n\n/**\n * Returns
`true` if this character is a letter.\n */\ninternal fun Char.isLetterImpl(): Boolean {\n    return getLetterType() !=
0\n}\n\n/**\n * Returns `true` if this character is a lower case letter, or it has contributory property
`Other_Lowercase`.\n */\ninternal fun Char.isLowerCaseImpl(): Boolean {\n    return getLetterType() == 1 ||
code.isOtherLowercase()\n}\n\n/**\n * Returns `true` if this character is an upper case letter, or it has contributory
property `Other_Uppercase`.\n */\ninternal fun Char.isUpperCaseImpl(): Boolean {\n    return getLetterType() == 2
|| code.isOtherUppercase()\n}\n\n/**\n * Returns\n * - `1` if the character is a lower case letter,\n * - `2` if the character is an upper case letter,\n * - `3`
if the character is a letter but not a lower or upper case letter,\n * - `0` otherwise.\n */\nprivate fun
Char.getLetterType(): Int {\n    val ch = this.code\n    val index = binarySearchRange(Letter.decodedRangeStart,
ch)\n    val rangeStart = Letter.decodedRangeStart[index]\n    val rangeEnd = rangeStart +
Letter.decodedRangeLength[index] - 1\n    val code = Letter.decodedRangeCategory[index]\n    if (ch > rangeEnd)
{\n        return 0\n    }\n    val lastTwoBits = code and 0x3\n    if (lastTwoBits == 0) { // gap pattern\n        var
shift = 2\n        var threshold = rangeStart\n        for (i in 0..1) {\n            threshold += (code shr shift) and 0x7f\n
            if (threshold > ch) {\n                return 3\n            }\n            shift += 7\n            threshold += (code shr shift) and
0x7f\n            if (threshold > ch) {\n                return 0\n            }\n            shift += 7\n        }\n        return 3\n    }\n    if (code <= 0x7) {\n        return
lastTwoBits\n    }\n    val distance = (ch - rangeStart)\n    val shift = if (code <= 0x1F) distance % 2 else distance\n
return (code shr (2 * shift)) and 0x3\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nprivate object
OtherLowercase {\n    internal val otherLowerStart = intArrayOf(\n        0x00aa, 0x00ba, 0x02b0, 0x02c0, 0x02e0,
0x0345, 0x037a, 0x1d2c, 0x1d78, 0x1d9b, 0x2071, 0x207f, 0x2090, 0x2170, 0x24d0, 0x2c7c, 0xa69c, 0xa770,
0xa7f8, 0xab5c, \n    )\n    internal val otherLowerLength = intArrayOf(\n
        1, 1, 9, 2, 5, 1, 1, 63, 1, 37, 1, 1, 13, 16, 26, 2, 2, 1, 2, 4, \n    )\n}\n\ninternal fun Int.isOtherLowercase():
Boolean {\n    val index = binarySearchRange(OtherLowercase.otherLowerStart, this)\n    return index >= 0 && this
< OtherLowercase.otherLowerStart[index] + OtherLowercase.otherLowerLength[index]\n}\n\n"/*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.text\n\n/\n//
NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\ninternal fun Int.isOtherUppercase(): Boolean
{\n    return this in 0x2160..0x216f\n        || this in 0x24b6..0x24cf\n}\n\n"/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.text\n\n/\n// NOTE: THIS FILE
IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.js.*\n\n/**\n * Returns a
character at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this char
sequence.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic actual fun
CharSequence.elementAt(index: Int): Char {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, length: $length") }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.text\n\n/\n// NOTE: THIS FILE IS
AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n4 ranges totally\n\ninternal fun Char.titlecaseCharImpl(): Char {\n    val code = this.code\n    // Letters repeating <Lu,
Lt, Ll> sequence and code of the Lt is a multiple of 3, e.g. <\u01c4, \u01c5, \u01c6>\n    if (code in 0x01c4..0x01cc
|| code in 0x01f1..0x01f3) {\n        return (3 * ((code + 1) / 3)).toChar()\n    }\n    // Lower case letters whose title

```

```

case mapping equivalent is equal to the original letter\n  if (code in 0x10d0..0x10fa || code in 0x10fd..0x10ff) {\n
  return this\n  }\n  return uppercaseChar()\n}", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *^\n\npackage kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport
kotlin.js.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UIntArray.elementAt(index: Int):
UInt {\n  return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun ULongArray.elementAt(index: Int):
ULong {\n  return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException]
if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UByteArray.elementAt(index: Int):
UByte {\n  return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UShortArray.elementAt(index: Int):
UShort {\n  return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UIntArray.asList(): List<UInt> {\n
return object : AbstractList<UInt>(),
RandomAccess {\n  override val size: Int get() = this@asList.size\n  override fun isEmpty(): Boolean =
this@asList.isEmpty()\n  override fun contains(element: UInt): Boolean = this@asList.contains(element)\n
override fun get(index: Int): UInt {\n    AbstractList.checkElementIndex(index, size)\n    return
this@asList[index]\n  }\n  override fun indexOf(element: UInt): Int {\n    @Suppress("USELESS_CAST")\n    if ((element as Any?) !is UInt) return -1\n    return
this@asList.indexOf(element)\n  }\n  override fun lastIndexOf(element: UInt): Int {\n    @Suppress("USELESS_CAST")\n    if ((element as Any?) !is UInt) return -1\n    return
this@asList.lastIndexOf(element)\n  }\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun ULongArray.asList(): List<ULong>
{\n  return
object : AbstractList<ULong>(), RandomAccess {\n  override val size: Int get() = this@asList.size\n
override fun isEmpty(): Boolean = this@asList.isEmpty()\n  override fun contains(element: ULong): Boolean =
this@asList.contains(element)\n  override fun get(index: Int): ULong {\n    AbstractList.checkElementIndex(index, size)\n    return this@asList[index]\n  }\n  override fun
indexOf(element: ULong): Int {\n    @Suppress("USELESS_CAST")\n    if ((element as Any?) !is
ULong) return -1\n    return this@asList.indexOf(element)\n  }\n  override fun lastIndexOf(element:
ULong): Int {\n    @Suppress("USELESS_CAST")\n    if ((element as Any?) !is ULong) return -1\n    return
this@asList.lastIndexOf(element)\n  }\n}\n\n/**\n * Returns a [List] that wraps the original
array.\n *^\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UByteArray.asList():
List<UByte> {\n  return object : AbstractList<UByte>(), RandomAccess {\n  override val size: Int get() =
this@asList.size\n  override fun isEmpty(): Boolean = this@asList.isEmpty()\n  override fun

```


Forces a top-level property to be initialized eagerly, opposed to lazily on the first access to file and/or property.
*
@ExperimentalStdlibApi
@Retention(AnnotationRetention.BINARY)
@Target(AnnotationTarget.PROPERTY)
@SinceKotlin("1.6")
@Deprecated("This annotation is a temporal migration assistance and may be removed in the future releases, please consider filing an issue about the case where it is needed")
public annotation class EagerInitialization
", /*
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*
package kotlin.jvm
// these are used in common generated code in stdlib
// TODO: find how to deprecate these ones
@Target(AnnotationTarget.FIELD)
@Retention(AnnotationRetention.SOURCE)
public actual annotation class Volatile
@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY_GETTER,

AnnotationTarget.PROPERTY_SETTER)
@Retention(AnnotationRetention.SOURCE)
public actual annotation class Synchronized
", /*
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license/LICENSE.txt file.
*
package kotlin.collections
/**
* Provides a skeletal implementation of the [MutableCollection] interface.
*
* @param E the type of elements contained in the collection. The collection is invariant in its element type.

*
public actual abstract class AbstractMutableCollection<E> protected actual constructor() :
AbstractCollection<E>(), MutableCollection<E> {
 actual abstract override fun add(element: E): Boolean
 actual override fun remove(element: E): Boolean {
 checkIsMutable()
 val iterator = iterator()
 while (iterator.hasNext()) {
 if (iterator.next() == element) {
 iterator.remove()
 return true
 }
 }
 return false
 }
 actual override fun addAll(elements: Collection<E>): Boolean {
 checkIsMutable()
 var modified = false
 for (element in elements) {
 if (add(element))
 modified = true
 }
 return modified
 }
 actual override fun removeAll(elements: Collection<E>): Boolean {
 checkIsMutable()
 return (this as MutableIterable<E>).removeAll { it in elements }
 }
 actual override fun retainAll(elements:

Collection<E>): Boolean {
 checkIsMutable()
 return (this as MutableIterable<E>).removeAll { it !in elements }
 }
 actual override fun clear(): Unit {
 checkIsMutable()
 val iterator = this.iterator()
 while (iterator.hasNext()) {
 iterator.next()
 iterator.remove()
 }
 }

@Deprecated("Provided so that subclasses inherit this function", level = DeprecationLevel.HIDDEN)

@JsName("toJSON")
protected fun toJSON(): Any = this.toArray()
/**
* This method is called every time when a mutating method is called on this mutable collection.
* Mutable collections that are built (frozen) must throw `UnsupportedOperationException`.
*
internal open fun checkIsMutable(): Unit {
}
", /*
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found in the license/LICENSE.txt file.
*
package kotlin.collections
/**
* Provides a skeletal implementation of the [MutableList] interface.
*
* @param E the type of elements contained in the list. The list is invariant in its element type.

*
public actual abstract class AbstractMutableList<E> protected actual constructor() :
AbstractMutableCollection<E>(), MutableList<E> {
 protected var modCount: Int = 0
 abstract override fun add(index: Int, element: E): Unit
 abstract override fun removeAt(index: Int): E
 abstract override fun set(index: Int, element: E): E
 /**
 * Adds the specified element to the end of this list.
 *
 * @return `true` because the list is always modified as the result of this operation.
 *
 actual override fun add(element: E): Boolean {
 checkIsMutable()
 add(size, element)
 return true
 }
 actual override fun addAll(index: Int, elements: Collection<E>): Boolean {
AbstractList.checkPositionIndex(index, size)
 checkIsMutable()
 var _index = index
 var changed = false
 for (e in elements) {
 add(_index++, e)
 changed = true
 }
 return changed
 }
 actual override fun clear() {
 checkIsMutable()
 removeRange(0, size)
 }
 actual


```

in start..end) {\n    when {\n        leftIndex <= median && rightIndex <= end -> {\n            val leftValue =
left[leftIndex]\n            val rightValue = right[rightIndex]\n            if (comparator.compare(leftValue,
rightValue) <= 0) {\n                target[i] = leftValue\n                leftIndex++\n            } else {\n
target[i]
= rightValue\n                rightIndex++\n            }\n        }\n        leftIndex <= median -> {\n
target[i] = left[leftIndex]\n                leftIndex++\n            }\n        else /* rightIndex <= end */ -> {\n
target[i] = right[rightIndex]\n                rightIndex++\n            }\n        }\n    }\n    Unit // TODO: Fix KT-31506\n    }\n    }\n
}\n\n    return target\n}", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\n\n@OptIn(ExperimentalUnsignedTypes::class)\n@SinceKotlin("1.3")\n@kotlin.js.JsName("\ncontentDeepHashCodeImpl")\n\ninternal fun <T> Array<out T>?.contentDeepHashCodeImpl(): Int {\n    if (this ==
null) return 0\n    var result = 1\n    for (element in this) {\n        val elementHash = when {\n            element
== null -> 0\n            isArrayish(element) -> (element.unsafeCast<Array<*>()).contentDeepHashCodeImpl()\n\n            element is UByteArray -> element.contentHashCode()\n            element is UShortArray ->
element.contentHashCode()\n            element is UIntArray -> element.contentHashCode()\n            element is
ULongArray -> element.contentHashCode()\n\n            else -> element.hashCode()\n        }\n\n        result = 31 * result + elementHash\n    }\n    return result\n}", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n\ninterface
EqualityComparator {\n    /**\n     * Subclasses must override to return a value indicating\n     * whether or not two
keys or values are equal.\n     */\n    abstract fun equals(value1: Any?, value2: Any?): Boolean\n\n    /**\n     * Subclasses must override to return the hash code of a given key.\n     */\n    abstract fun
getHashCode(value: Any?): Int\n\n    object HashCode : EqualityComparator {\n        override fun equals(value1:
Any?, value2: Any?): Boolean = value1 == value2\n        override fun getHashCode(value: Any?): Int =
value?.hashCode() ?: 0\n    }\n}", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n/*\n * Based on GWT AbstractHashMap\n * Copyright 2008 Google Inc.\n */\n\npackage kotlin.collections\n\nimport kotlin.collections.MutableMap.MutableEntry\n\n/**\n * Hash table based
implementation of the [MutableMap] interface.\n * This implementation makes no guarantees regarding the
order of enumeration of [keys], [values] and [entries] collections.\n */\n\n// Classes that extend HashMap and
implement `build()`
(freezing) operation\n// have to make sure mutating methods check `checkIsMutable`\n\npublic actual open class
HashMap<K, V> : AbstractMutableMap<K, V>, MutableMap<K, V> {\n    private inner class EntrySet :
AbstractEntrySet<MutableEntry<K, V>, K, V>() {\n        override fun add(element: MutableEntry<K, V>):
Boolean = throw UnsupportedOperationException("Add is not supported on entries")\n        override fun clear()
{\n            this@HashMap.clear()\n        }\n        override fun containsEntry(element: Map.Entry<K, V>): Boolean
= this@HashMap.containsEntry(element)\n        override operator fun iterator():
MutableIterator<MutableEntry<K, V>> = internalMap.iterator()\n        override fun removeEntry(element:
Map.Entry<K, V>): Boolean {\n            if (contains(element)) {\n                this@HashMap.remove(element.key)\n
            }\n            return true\n        }\n        return false\n    }\n\n    override val size: Int get() =
this@HashMap.size\n\n    }\n\n    /**\n     * Internal implementation of the map: either string-based or hashcode-based.\n     */\n    private
val internalMap: InternalMap<K, V>\n\n    private val equality: EqualityComparator\n\n    internal
constructor(internalMap: InternalMap<K, V>) : super() {\n        this.internalMap = internalMap\n        this.equality =
internalMap.equality\n    }\n\n    /**\n     * Constructs an empty [HashMap] instance.\n     */\n    actual constructor()
: this(InternalHashCodeMap(EqualityComparator.HashCode))\n\n    /**\n     * Constructs an empty [HashMap]
instance.\n     */\n    @param initialCapacity the initial capacity (ignored)\n     * @param loadFactor the load

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factor (ignored)\n * \n * @throws IllegalArgumentException if the initial capacity or load factor are negative\n
*\n actual constructor(initialCapacity: Int, loadFactor: Float) : this() {\n // This implementation of HashMap
has no need of load factors or capacities.\n require(initialCapacity
>= 0) { \"Negative initial capacity: $initialCapacity\" }\n require(loadFactor >= 0) { \"Non-positive load factor:
$loadFactor\" }\n }\n\n actual constructor(initialCapacity: Int) : this(initialCapacity, 0.0f)\n\n /**\n *
Constructs an instance of [HashMap] filled with the contents of the specified [original] map.\n *\n actual
constructor(original: Map<out K, V>) : this() {\n this.putAll(original)\n }\n\n actual override fun clear() {\n
internalMap.clear()\n// structureChanged(this)\n }\n\n actual override fun containsKey(key: K): Boolean
= internalMap.containsKey()\n\n actual override fun containsValue(value: V): Boolean = internalMap.any {
equality.equals(it.value, value) }\n\n private var _entries: MutableSet<MutableMap.MutableEntry<K, V>>? =
null\n\n actual override val entries: MutableSet<MutableMap.MutableEntry<K, V>>\n\n get() {\n if
(_entries == null) {\n _entries
= createEntrySet()\n }\n\n return _entries!!\n }\n\n internal open fun createEntrySet():
MutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n actual override operator fun get(key: K): V? =
internalMap.get(key)\n\n actual override fun put(key: K, value: V): V? = internalMap.put(key, value)\n\n actual
override fun remove(key: K): V? = internalMap.remove(key)\n\n actual override val size: Int get() =
internalMap.size\n\n}\n\n/**\n * Constructs the specialized implementation of [HashMap] with [String] keys, which
stores the keys as properties of\n * JS object without hashing them.\n *\n\npublic fun <V> stringMapOf(vararg pairs:
Pair<String, V>): HashMap<String, V> {\n return HashMap<String,
V>(InternalStringMap(EqualityComparator.HashCode)).apply { putAll(pairs) }\n}\n\n\", \"/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found
in the license/LICENSE.txt file.\n *\n\n*\n * Based on GWT HashSet\n * Copyright 2008 Google Inc.\n
*\n\npackage kotlin.collections\n\n/**\n * The implementation of the [MutableSet] interface, backed by a
[HashMap] instance.\n *\n\n// Classes that extend HashSet and implement `build()` (freezing) operation\n// have to
make sure mutating methods check `checkIsMutable`.\n\npublic actual open class HashSet<E> :
AbstractMutableSet<E>, MutableSet<E> {\n\n internal val map: HashMap<E, Any>\n\n /**\n * Constructs a
new empty [HashSet].\n *\n actual constructor() {\n map = HashMap<E, Any>()\n }\n\n /**\n *
Constructs a new [HashSet] filled with the elements of the specified collection.\n *\n actual
constructor(elements: Collection<E>) {\n map = HashMap<E, Any>(elements.size)\n addAll(elements)\n
}\n\n /**\n * Constructs a new empty [HashSet].\n *\n * @param initialCapacity the initial capacity
(ignored)\n * @param
loadFactor the load factor (ignored)\n * \n * @throws IllegalArgumentException if the initial capacity or
load factor are negative\n *\n actual constructor(initialCapacity: Int, loadFactor: Float) {\n map =
HashMap<E, Any>(initialCapacity, loadFactor)\n }\n\n actual constructor(initialCapacity: Int) :
this(initialCapacity, 0.0f)\n\n /**\n * Protected constructor to specify the underlying map. This is used by\n *
LinkedHashSet.\n *\n * @param map underlying map to use.\n *\n internal constructor(map: HashMap<E,
Any>) {\n this.map = map\n }\n\n actual override fun add(element: E): Boolean {\n val old =
map.put(element, this)\n return old == null\n }\n\n actual override fun clear() {\n map.clear()\n }\n\n//
public override fun clone(): Any {\n// return HashSet<E>(this)\n// }\n\n actual override operator fun
contains(element: E): Boolean = map.containsKey(element)\n\n actual
override fun isEmpty(): Boolean = map.isEmpty()\n\n actual override fun iterator(): MutableIterator<E> =
map.keys.iterator()\n\n actual override fun remove(element: E): Boolean = map.remove(element) != null\n\n
actual override val size: Int get() = map.size\n\n}\n\n/**\n * Creates a new instance of the specialized
implementation of [HashSet] with the specified [String] elements,\n * which elements the keys as properties of JS
object without hashing them.\n *\n\npublic fun stringSetOf(vararg elements: String): HashSet<String> {\n return
HashSet(stringMapOf<Any>()).apply { addAll(elements) }\n}\n\n\", \"/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that

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can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT InternalHashMap\n * Copyright
2008 Google Inc.\n */\n\npackage kotlin.collections\n\nimport
kotlin.collections.MutableMap.MutableEntry\nimport kotlin.collections.AbstractMutableMap.SimpleEntry\n\n/**\n
 * A simple wrapper around JavaScriptObject to provide [java.util.Map]-like semantics for any\n * key type.\n *\n
 * Implementation notes:\n *\n * A key's hashCode is the index in backingMap which should contain that
key. Since several keys may\n * have the same hash, each value in hashCodeMap is actually an array containing all
entries whose\n * keys share the same hash.\n */\n\ninternal class InternalHashMap<K, V>(override val equality:
EqualityComparator) : InternalMap<K, V> {\n\n    private var backingMap: dynamic = createJsMap()\n    override
var size: Int = 0\n    private set\n\n    override fun put(key: K, value: V): V? {\n        val hashCode =
equality.getHashCode(key)\n        val chainOrEntry = getChainOrEntryOrNull(hashCode)\n        if (chainOrEntry
== null) {\n            // This is a new chain, put it to the map.\n            backingMap[hashCode] = SimpleEntry(key,
value)\n        } else {\n            if (chainOrEntry !is Array<*>) {\n                // It is an entry\n                val entry: SimpleEntry<K, V> =
chainOrEntry\n                if (equality.equals(entry.key, key)) {\n                    return entry.setValue(value)\n                } else {\n                    backingMap[hashCode] = arrayOf(entry, SimpleEntry(key, value))\n                    size++\n                    return null\n                } else {\n                    // Chain already exists, perhaps key also exists.\n                    val chain: Array<MutableEntry<K, V>> = chainOrEntry\n                    val entry = chain.findEntryInChain(key)\n                    if (entry != null) {\n                        return entry.setValue(value)\n                    }\n                    chain.asDynamic().push(SimpleEntry(key, value))\n                    size++\n                    structureChanged(host)\n                    return null\n                }\n                override fun remove(key: K): V? {\n                    val hashCode = equality.getHashCode(key)\n                    val chainOrEntry = getChainOrEntryOrNull(hashCode) ?: return null\n                    if (chainOrEntry !is Array<*>) {\n                        val entry: MutableEntry<K, V> = chainOrEntry\n                        if (equality.equals(entry.key, key)) {\n                            jsDeleteProperty(backingMap, hashCode)\n                            size--\n                            return entry.value\n                        } else {\n                            return null\n                        } else {\n                            val chain: Array<MutableEntry<K, V>> = chainOrEntry\n                            for
(index in chain.indices) {\n                                val entry = chain[index]\n                                if (equality.equals(key, entry.key)) {\n                                    if (chain.size == 1) {\n                                        chain.asDynamic().length = 0\n                                        // remove the whole
array\n                                        jsDeleteProperty(backingMap, hashCode)\n                                    } else {\n                                        // splice out
the entry we're removing\n                                        chain.asDynamic().splice(index,
1)\n                                        size--\n                                        structureChanged(host)\n                                        return entry.value\n                                    }\n                                }\n                                return null\n                            }\n                            override fun clear() {\n                                backingMap = createJsMap()\n                                size = 0\n                            }\n                            override fun contains(key: K): Boolean = getEntry(key) != null\n                            override fun get(key: K):
V? = getEntry(key)?.value\n                            private fun getEntry(key: K): MutableEntry<K, V>? {\n                                val chainOrEntry =
getChainOrEntryOrNull(equality.getHashCode(key)) ?: return null\n                                if (chainOrEntry !is Array<*>) {\n                                    val entry: MutableEntry<K, V> = chainOrEntry\n                                    if (equality.equals(entry.key, key)) {\n                                        return
entry\n                                    } else {\n                                        return null\n                                    } else {\n                                        val chain: Array<MutableEntry<K,
V>> = chainOrEntry\n                                        return chain.findEntryInChain(key)\n                                    }\n                                }\n                                private fun
Array<MutableEntry<K, V>>.findEntryInChain(key: K): MutableEntry<K, V>? =\n                                    firstOrNull { entry ->
equality.equals(entry.key, key) }\n                                override fun iterator(): MutableIterator<MutableEntry<K, V>> {\n                                    return object : MutableIterator<MutableEntry<K, V>> {\n                                        var state = -1 // -1 not ready, 0 - ready, 1 -
done\n                                        val keys: Array<String> = js("Object").keys(backingMap)\n                                        var keyIndex = -1\n                                        var chainOrEntry: dynamic = null\n                                        var isChain = false\n                                        var itemIndex = -1\n                                        var lastEntry:
MutableEntry<K, V>? = null\n                                        private fun computeNext(): Int {\n                                            if (chainOrEntry != null &&
isChain) {\n                                                val chainSize: Int = chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>().size\n                                                if (++itemIndex < chainSize)\n                                                    return 0\n                                            }\n                                            if (++keyIndex < keys.size)\n                                                {\n                                                    chainOrEntry
= backingMap[keys[keyIndex]]\n                                                    isChain = chainOrEntry is Array<*>\n                                                    itemIndex = 0\n                                                    return 0\n                                                } else {\n                                                    chainOrEntry = null\n                                                    return 1\n                                                }\n                                            }\n                                        }\n                                        override fun hasNext(): Boolean {\n                                            if (state == -1)\n                                                state = computeNext()\n                                        }\n                                    }\n                                }\n                            }\n                        }\n                    }\n                }\n            }\n        }\n    }\n\n    override fun hasNext(): Boolean {\n        if (state == -1)\n            state = computeNext()\n    }\n}

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return state == 0\n        }\n        override fun next(): MutableEntry<K, V> {\n            if (!hasNext())
throw NoSuchElementException()\n                val lastEntry = if (isChain) {\nchainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>()[itemIndex]\n                } else {\nchainOrEntry.unsafeCast<MutableEntry<K, V>>()\n                }\n                this.lastEntry = lastEntry\nstate = -1\n                return lastEntry\n        }\n        override fun remove() {\n            checkNotNull(lastEntry)\n                this@InternalHashMap.remove(lastEntry!!.key)\n                lastEntry = null\n                // the chain being iterated just got modified by InternalHashMap.remove\n                itemIndex--\n        }\n    }\n\n    private fun getChainOrEntryOrNull(hashCode: Int): dynamic {\n        val chainOrEntry = backingMap[hashCode]\n        return if (chainOrEntry === undefined) null else chainOrEntry\n    }\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n/**\n * The common interface of [InternalStringMap] and [InternalHashMap].\n */\n\ninternal interface InternalMap<K, V> : MutableIterable<MutableMap.MutableEntry<K, V>> {\n    val equality: EqualityComparator\n    val size: Int\n    operator fun contains(key: K): Boolean\n\n    operator fun get(key: K): V?\n    fun put(key: K, value: V): V?\n    fun remove(key: K): V?\n    fun clear(): Unit\n\n    fun createJsMap(): dynamic {\n        val result = js("Object.create(null)")\n        // force to switch object representation to dictionary mode\n        result["foo"] = 1\n        jsDeleteProperty(result, "foo")\n        return result\n    }\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n/*\n * Based on GWT InternalStringMap\n * Copyright 2008 Google Inc.\n */\n\npackage kotlin.collections\nimport kotlin.collections.MutableMap.MutableEntry\n/**\n * A simple wrapper around JavaScript Map for key type is string.\n * Though this map is instantiated only with K=String, the K type is not fixed to String statically,\n * because we want to have it erased to Any? in order not to generate type-safe override bridges for\n * [get], [contains], [remove] etc, if they ever are generated.\n */\n\ninternal class InternalStringMap<K, V>(override val equality: EqualityComparator) : InternalMap<K, V> {\n    private var backingMap: dynamic = createJsMap()\n    override var size: Int = 0\n    private set\n\n    /**\n     * A mod count to track 'value' replacements in map to ensure that the 'value' that we have in the\n     * iterator entry is guaranteed to be still correct.\n     * This is to optimize for the common scenario where the values are not modified during\n     * iterations where the entries are never stale.\n     */\n    private var valueMod: Int = 0\n    override operator fun contains(key: K): Boolean {\n        if (key !is String) return false\n        return backingMap[key] !== undefined\n    }\n\n    override operator fun get(key: K): V? {\n        if (key !is String) return null\n        val value = backingMap[key]\n        return if (value !== undefined) value.unsafeCast<V>() else null\n    }\n\n    override fun put(key: K, value: V): V? {\n        require(key is String)\n        val oldValue = backingMap[key]\n        backingMap[key] = value\n\n        if (oldValue === undefined) {\n            size++\n            structureChanged(host)\n            return null\n        } else {\n            valueMod++\n            return oldValue.unsafeCast<V>()\n        }\n    }\n\n    override fun remove(key: K): V? {\n        if (key !is String) return null\n        val value = backingMap[key]\n        if (value !== undefined) {\n            jsDeleteProperty(backingMap, key)\n            size--\n            structureChanged(host)\n            return value.unsafeCast<V>()\n        } else {\n            valueMod++\n            return null\n        }\n    }\n\n    override fun clear() {\n        backingMap = createJsMap()\n        size = 0\n    }\n\n    override fun iterator(): MutableIterator<MutableEntry<K, V>> {\n        return object : MutableIterator<MutableEntry<K, V>> {\n            private val keys: Array<String> = js("Object").keys(backingMap)\n            private val iterator = keys.iterator()\n            private var lastKey: String? = null\n\n            override fun hasNext(): Boolean = iterator.hasNext()\n\n            override fun next(): MutableEntry<K, V> {\n                val key = iterator.next()\n                lastKey = key\n                @Suppress("UNCHECKED_CAST")\n                return newMapEntry(key as K)\n            }\n\n            override fun remove() {\n                @Suppress("UNCHECKED_CAST")\n            }\n        }\n    }\n}

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this@InternalStringMap.remove(checkNotNull(lastKey) as K)\n        }\n    }\n\n    private fun
newMapEntry(key: K): MutableEntry<K, V> = object : MutableEntry<K, V> {\n        override val key: K get() =
key\n        override val value: V get() = this@InternalStringMap[key].unsafeCast<V>()\n        override fun
setValue(newValue:
    V): V = this@InternalStringMap.put(key, newValue).unsafeCast<V>()\n        override fun hashCode(): Int =
AbstractMap.entryHashCode(this)\n        override fun toString(): String = AbstractMap.entryToString(this)\n
override fun equals(other: Any?): Boolean = AbstractMap.entryEquals(this, other)\n    }\n}\n"/\n * Copyright
2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT
LinkedHashMap\n * Copyright 2008 Google Inc.\n */\npackage kotlin.collections\n\nimport
kotlin.collections.MutableMap.MutableEntry\n\n/**\n * Hash table based implementation of the [MutableMap]
interface, which additionally preserves the insertion order\n * of entries during the iteration.\n * The insertion
order is preserved by maintaining a doubly-linked list of all of its entries.\n */\npublic actual open class
LinkedHashMap<K, V> : HashMap<K,
    V>, MutableMap<K, V> {\n\n    /**\n     * The entry we use includes next/prev pointers for a doubly-linked
circular\n     * list with a head node. This reduces the special cases we have to deal with\n     * in the list
operations.\n     * Note that we duplicate the key from the underlying hash map so we can find\n     * the eldest
entry. The alternative would have been to modify HashMap so more\n     * of the code was directly usable here, but
this would have added some\n     * overhead to HashMap, or to reimplement most of the HashMap code here with\n
     * small modifications. Paying a small storage cost only if you use\n     * LinkedHashMap and minimizing code size
seemed like a better tradeoff\n     */\n    private inner class ChainEntry<K, V>(key: K, value: V) :
AbstractMutableMap.SimpleEntry<K, V>(key, value) {\n        internal var next: ChainEntry<K, V>? = null\n
internal var prev: ChainEntry<K, V>? = null\n        override fun setValue(newValue: V): V {\n
            this@LinkedHashMap.checkIsMutable()\n            return super.setValue(newValue)\n        }\n    }\n\n    private inner class EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V>() {\n        private inner class
EntryIterator : MutableIterator<MutableEntry<K, V>> {\n            // The last entry that was returned from this
iterator.\n            private var last: ChainEntry<K, V>? = null\n            // The next entry to return from this
iterator.\n            private var next: ChainEntry<K, V>? = null\n            init {\n                next = head\n            }
recordLastKnownStructure(map, this)\n        }\n        override fun hasNext(): Boolean {\n            return
next != null\n        }\n        override fun next(): MutableEntry<K, V> {\n
            checkStructuralChange(map, this)\n            if (!hasNext()) throw NoSuchElementException()\n            val
current = next!!\n            last = current\n            next = current.next.takeIf { it != head }\n            return current\n        }\n        override fun remove()\n        {\n            check(last != null)\n            this@EntrySet.checkIsMutable()\n            checkStructuralChange(map, this)\n            last!!.remove()\n            map.remove(last!!.key)\n            recordLastKnownStructure(map, this)\n            last = null\n        }\n    }\n\n    override fun add(element:
MutableEntry<K, V>): Boolean = throw UnsupportedOperationException("Add is not supported on entries")\n
override fun clear() {\n        this@LinkedHashMap.clear()\n    }\n    override fun containsEntry(element:
Map.Entry<K, V>): Boolean = this@LinkedHashMap.containsEntry(element)\n    override operator fun
iterator(): MutableIterator<MutableEntry<K, V>> = EntryIterator()\n    override fun removeEntry(element:
Map.Entry<K, V>): Boolean {\n        checkIsMutable()\n        if (contains(element)) {\n            this@LinkedHashMap.remove(element.key)\n            return true\n        }\n        return false\n    }\n\n    override val size: Int get() = this@LinkedHashMap.size\n\n    override
fun checkIsMutable(): Unit = this@LinkedHashMap.checkIsMutable()\n}\n\n/**\n * The head of the insert
order chain, which is a doubly-linked circular\n * list.\n * The most recently inserted node is at the end of the
chain, ie.\n * chain.prev.\n */\nprivate var head: ChainEntry<K, V>? = null\n\n/**\n * Add this node to
the end of the chain.\n */\nprivate fun ChainEntry<K, V>.addToEnd() {\n    // This entry is not in the list.\n
check(next == null && prev == null)\n    val _head = head\n    if (_head == null) {\n        head = this\n

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        next = this\n        prev = this\n    } else {\n        // Chain is valid.\n        val _tail =
checkNotNull(_head.prev)\n
        // Update me.\n        prev = _tail\n        next = _head\n        // Update my new siblings: current head
and old tail\n        _head.prev = this\n        _tail.next = this\n    }\n}\n\n /**\n * Remove this node from
the chain it is a part of.\n */\n private fun ChainEntry<K, V>.remove() {\n    if (this.next === this) {\n
// if this is single element, remove head\n        head = null\n    } else {\n        if (head === this) {\n            //
if this is first element, move head to next\n            head = next\n        }\n        next!!.prev = prev\n
prev!!.next = next\n    }\n    next = null\n    prev = null\n }\n}\n\n /**\n * The hashmap that keeps track of
our entries and the chain. Note that we\n * duplicate the key here to eliminate changes to HashMap and minimize
the\n * code here, at the expense of additional space.\n */\n private
val map: HashMap<K, ChainEntry<K, V>>\n\n private var isReadOnly: Boolean = false\n\n /**\n *
Constructs an empty [LinkedHashMap] instance.\n */\n actual constructor() : super() {\n    map =
HashMap<K, ChainEntry<K, V>>()\n }\n\n internal constructor(backingMap: HashMap<K, Any>) : super() {\n
    @Suppress("UNCHECKED_CAST") // expected to work due to erasure\n    map = backingMap as
HashMap<K, ChainEntry<K, V>>\n }\n\n /**\n * Constructs an empty [LinkedHashMap] instance.\n */\n
* @param initialCapacity the initial capacity (ignored)\n * @param loadFactor the load factor (ignored)\n
*\n * @throws IllegalArgumentException if the initial capacity or load factor are negative\n */\n actual
constructor(initialCapacity: Int, loadFactor: Float) : super(initialCapacity, loadFactor) {\n    map = HashMap<K,
ChainEntry<K, V>>()\n }\n\n actual constructor(initialCapacity: Int) : this(initialCapacity, 0.0f)\n\n
/**\n * Constructs an instance of [LinkedHashMap] filled with the contents of the specified [original] map.\n
*\n * actual constructor(original: Map<out K, V>) {\n    map = HashMap<K, ChainEntry<K, V>>()\n
this.putAll(original)\n }\n\n @PublishedApi\n internal fun build(): Map<K, V> {\n    checkIsMutable()\n
isReadOnly = true\n    return this\n }\n\n actual override fun clear() {\n    checkIsMutable()\n
map.clear()\n    head = null\n }\n}\n\n// override fun clone(): Any {\n//    return LinkedHashMap(this)\n//
}\n\n\n actual override fun containsKey(key: K): Boolean = map.containsKey(key)\n\n actual override fun
containsValue(value: V): Boolean {\n    var node: ChainEntry<K, V> = head ?: return false\n    do {\n        if
(node.value == value) {\n            return true\n        }\n        node = node.next!!\n    } while (node !==
head)\n    return false\n }\n}\n\n\n internal override fun createEntrySet(): MutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n actual
override operator fun get(key: K): V? = map.get(key)?.value\n\n actual override fun put(key: K, value: V): V? {\n
    checkIsMutable()\n    val old = map.get(key)\n    if (old == null) {\n        val newEntry =
ChainEntry(key, value)\n        map.put(key, newEntry)\n        newEntry.addToEnd()\n        return null\n
    } else {\n        return old.setValue(value)\n    }\n}\n\n actual override fun remove(key: K): V? {\n
    checkIsMutable()\n    val entry = map.remove(key)\n    if (entry != null) {\n        entry.remove()\n
return entry.value\n    }\n    return null\n }\n}\n\n actual override val size: Int get() = map.size\n\n internal
override fun checkIsMutable() {\n    if (isReadOnly) throw UnsupportedOperationException()\n }\n}\n}\n\n/**\n *
Constructs the specialized implementation
of [LinkedHashMap] with [String] keys, which stores the keys as properties of\n * JS object without hashing
them.\n */\n\n public fun <V> linkedStringMapOf(vararg pairs: Pair<String, V>): LinkedHashMap<String, V> {\n
return LinkedHashMap<String, V>(stringMapOf<Any>()).apply { putAll(pairs) }\n}\n\n", /*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n /**\n * Based on GWT LinkedHashMap\n
*\n * Copyright 2008 Google Inc.\n */\n\n package kotlin.collections\n\n /**\n * The implementation of the [MutableSet]
interface, backed by a [LinkedHashMap] instance.\n */\n\n * This implementation preserves the insertion order of
elements during the iteration.\n */\n\n public actual open class LinkedHashMap<E> : HashSet<E>, MutableSet<E>
{\n\n    internal constructor(map: LinkedHashMap<E, Any>) : super(map)\n\n    /**\n * Constructs a new empty
[LinkedHashSet].\n */\n    actual constructor() : super(LinkedHashMap<E, Any>())\n\n    /**\n * Constructs a
new [LinkedHashSet] filled with the elements of the specified collection.\n */\n    actual constructor(elements:

```

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Collection<E> : super(LinkedHashMap<E, Any>()) {\n    addAll(elements)\n } \n\n /**\n * Constructs a
new empty [LinkedHashSet].\n * \n * @param initialCapacity the initial capacity (ignored)\n * @param
loadFactor the load factor (ignored)\n * \n * @throws IllegalArgumentException if the initial capacity or
load factor are negative\n */\n actual constructor(initialCapacity: Int, loadFactor: Float) :
super(LinkedHashMap<E, Any>(initialCapacity, loadFactor))\n\n actual constructor(initialCapacity: Int) :
this(initialCapacity, 0.0f)\n\n @PublishedApi\n internal fun build(): Set<E> {\n    (map as
LinkedHashMap<E, Any>).build()\n    return this\n } \n\n internal override fun checkIsMutable():
Unit = map.checkIsMutable()\n\n// public override fun clone(): Any {\n//    return LinkedHashSet(this)\n//
}\n\n}\n\n/**\n * Creates a new instance of the specialized implementation of [LinkedHashSet] with the specified
[String] elements,\n * which elements the keys as properties of JS object without hashing them.\n */\n\npublic fun
linkedStringSetOf(vararg elements: String): LinkedHashSet<String> {\n    return
LinkedHashSet(linkedStringMapOf<Any>()).apply { addAll(elements) }\n}\n\n", /*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.contracts.*\n\n\n@DeprecatedSinceKotlin(warningSince = \"1.6\")\n@Deprecated(\"Synchronization on any
object is not supported in Kotlin/JS\",
ReplaceWith(\"run(block)\"))\n@kotlin.internal.InlineOnly\n@Suppress(\"UNUSED_PARAMETER\")\n\npublic
inline fun <R>
synchronized(lock: Any, block: () -> R): R {\n    contract {\n    callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n } \n    return block()\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.io\n\ninternal abstract class BaseOutput {\n
open fun println() {\n    print(\"\\n\")\n } \n\n open fun println(message: Any?) {\n    print(message)\n
println()\n } \n\n abstract fun print(message: Any?)\n\n open fun flush() { }\n\n\n/** JsName used to make the
declaration available outside of module to test it *\n\n@JsName(\"NodeJsOutput\")\n\ninternal class NodeJsOutput(val
outputStream: dynamic) : BaseOutput() {\n    override fun print(message: Any?) {\n    // TODO: Using local
variable because of bug in block decomposition lowering in IR backend\n    val messageString =
String(message)\n    outputStream.write(messageString)\n } \n\n}\n\n\n/** JsName used to make the declaration
available outside of module to test it *\n\n@JsName(\"OutputToConsoleLog\")\n\ninternal class OutputToConsoleLog
: BaseOutput() {\n    override fun print(message: Any?) {\n    console.log(message)\n } \n\n override fun
println(message: Any?) {\n    console.log(message)\n } \n\n override fun println() {\n    console.log(\"\\n\")\n
}\n\n}\n\n\n/** JsName used to make the declaration available outside of module to test it and use at try.kotl.in
*\n\n@JsName(\"BufferedOutput\")\n\ninternal open class BufferedOutput : BaseOutput() {\n    var buffer = \"\"\n\n
override fun print(message: Any?) {\n    buffer += String(message)\n } \n\n override fun flush() {\n    buffer
= \"\"\n } \n\n}\n\n\n/** JsName used to make the declaration available outside of module to test it
*\n\n@JsName(\"BufferedOutputToConsoleLog\")\n\ninternal class BufferedOutputToConsoleLog :
BufferedOutput() {\n    override fun print(message: Any?) {\n    var s = String(message)\n    val i =
s.nativeLastIndexOf(\"\\n\", 0)\n    if (i >= 0) {\n    buffer += s.substring(0, i)\n    flush()\n    s =
s.substring(i + 1)\n } \n\n    buffer += s\n } \n\n override fun flush() {\n    console.log(buffer)\n    buffer
= \"\"\n } \n\n}\n\n\n/** JsName used to make the declaration available outside of module to test it and use at
try.kotl.in *\n\n@JsName(\"output\")\n\ninternal var output = run {\n    val isNode: Boolean = js(\"typeof process !==
'undefined' && process.versions && !process.versions.node\")\n    if (isNode) NodeJsOutput(js(\"process.stdout\"))
else BufferedOutputToConsoleLog()\n}\n\n\n@kotlin.internal.InlineOnly\n\nprivate inline fun String(value: Any?):
String = js(\"String\")(value)\n\n\n/** Prints the line separator to the standard output stream. *\n\npublic actual fun
println() {\n    output.println()\n}\n\n\n/** Prints the
given [message] and the line separator to the standard output stream. *\n\npublic actual fun println(message: Any?)
{\n    output.println(message)\n}\n\n\n/** Prints the given [message] to the standard output stream. *\n\npublic actual
fun print(message: Any?) {\n    output.print(message)\n}\n\n\n@SinceKotlin(\"1.6\")\n\npublic actual fun readln():

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String = throw UnsupportedOperationException("readln is not supported in
Kotlin/JS")\n\n@SinceKotlin("1.6")\npublic actual fun readlnOrNull(): String? = throw
UnsupportedOperationException("readlnOrNull is not supported in Kotlin/JS"), /*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.intrinsics.CoroutineSingletons.*\nimport
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal
actual
class SafeContinuation<in T>\ninternal actual constructor(\n private val delegate: Continuation<T>,\n
initialResult: Any?\n) : Continuation<T> {\n @PublishedApi\n internal actual constructor(delegate:
Continuation<T>) : this(delegate, UNDECIDED)\n\n public actual override val context: CoroutineContext\n
get() = delegate.context\n\n private var result: Any? = initialResult\n\n public actual override fun
resumeWith(result: Result<T>) {\n val cur = this.result\n when {\n cur === UNDECIDED -> {\n
this.result = result.value\n }\n cur === COROUTINE_SUSPENDED -> {\n this.result =
RESUMED\n delegate.resumeWith(result)\n }\n else -> throw
IllegalStateException("Already resumed")\n }\n }\n\n @PublishedApi\n internal actual fun
getOrThrow(): Any? {\n if (result === UNDECIDED) {\n result = COROUTINE_SUSPENDED\n
return COROUTINE_SUSPENDED\n }\n val result = this.result\n return when {\n result ===
RESUMED -> COROUTINE_SUSPENDED // already called continuation, indicate COROUTINE_SUSPENDED
upstream\n result is Result.Failure -> throw result.exception\n else -> result // either
COROUTINE_SUSPENDED or data\n }\n }\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.coroutines.cancellation\n\n@SinceKotlin("1.4")\npublic actual open class CancellationException :
IllegalStateException {\n actual constructor() : super()\n actual constructor(message: String?) : super(message)\n
constructor(message: String?, cause: Throwable?) : super(message, cause)\n constructor(cause: Throwable?) :
super(cause)\n}, /*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines.js.internal\n\nimport
kotlin.coroutines.Continuation\nimport
kotlin.coroutines.EmptyCoroutineContext\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal val
EmptyContinuation = Continuation<Any?>(EmptyCoroutineContext) { result ->\n result.getOrThrow()\n}, /*\n
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.js\n\n/**\n * Exposes the [Date API](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Date) to Kotlin.\n
*/\n\n@Suppress("NOT_DOCUMENTED")\npublic external class Date() {\n public constructor(milliseconds:
Number)\n\n public constructor(dateString: String)\n\n public constructor(year:
Int, month: Int)\n\n public constructor(year: Int, month: Int, day: Int)\n\n public constructor(year: Int, month:
Int, day: Int, hour: Int)\n\n public constructor(year: Int, month: Int, day: Int, hour: Int, minute: Int)\n\n public
constructor(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int)\n\n public constructor(year: Int,
month: Int, day: Int, hour: Int, minute: Int, second: Int, millisecond: Number)\n\n public fun getDate(): Int\n\n
public fun getDay(): Int\n\n public fun getFullYear(): Int\n\n public fun getHours(): Int\n\n public fun
getMilliseconds(): Int\n\n public fun getMinutes(): Int\n\n public fun getMonth(): Int\n\n public fun
getSeconds(): Int\n\n public fun getTime(): Double\n\n public fun getTimezoneOffset(): Int\n\n public fun
getUTCDate(): Int\n\n public fun getUTCDay(): Int\n\n public fun getUTCFullYear(): Int\n\n public fun
getUTCHours(): Int\n\n public fun getUTCMilliseconds():

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Int\n\n public fun getUTCMinutes(): Int\n\n public fun getUTCMonth(): Int\n\n public fun getUTCSeconds():
Int\n\n public fun toDateString(): String\n\n public fun toISOString(): String\n\n public fun toJSON(): Json\n\n
public fun toLocaleDateString(locales: Array<String> = definedExternally, options: LocaleOptions =
definedExternally): String\n\n public fun toLocaleDateString(locales: String, options: LocaleOptions =
definedExternally): String\n\n public fun toLocaleString(locales: Array<String> = definedExternally, options:
LocaleOptions = definedExternally): String\n\n public fun toLocaleString(locales: String, options: LocaleOptions
= definedExternally): String\n\n public fun toLocaleTimeString(locales: Array<String> = definedExternally,
options: LocaleOptions = definedExternally): String\n\n public fun toLocaleTimeString(locales: String, options:
LocaleOptions = definedExternally): String\n\n public fun toTimeString(): String\n\n public
fun toUTCString(): String\n\n public companion object {\n\n public fun now(): Double\n\n public fun
parse(dateString: String): Double\n\n public fun UTC(year: Int, month: Int): Double\n\n public fun
UTC(year: Int, month: Int, day: Int): Double\n\n public fun UTC(year: Int, month: Int, day: Int, hour: Int):
Double\n\n public fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int): Double\n\n public fun
UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int): Double\n\n public fun UTC(year: Int,
month: Int, day: Int, hour: Int, minute: Int, second: Int, millisecond: Number): Double\n\n } \n\n public interface
LocaleOptions {\n\n public var localeMatcher: String?\n\n public var timeZone: String?\n\n public var
hour12: Boolean?\n\n public var formatMatcher: String?\n\n public var weekday: String?\n\n public var
era: String?\n\n public var year: String?\n\n
public var month: String?\n\n public var day: String?\n\n public var hour: String?\n\n public var
minute: String?\n\n public var second: String?\n\n public var timeZoneName: String? \n\n }\n\n\npublic
inline fun dateLocaleOptions(init: Date.LocaleOptions.() -> Unit): Date.LocaleOptions {\n\n val result = js{"new
Object()".unsafeCast<Date.LocaleOptions>()\n\n init(result)\n\n return result\n\n"},"/*\n\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n */\n\n\npackage kotlin.dom\n\n\nimport
org.w3c.dom.Document\n\nimport org.w3c.dom.Element\n\nimport
kotlin.internal.LowPriorityInOverloadResolution\n\nimport kotlinx.dom.appendElement as
newAppendElement\n\nimport kotlinx.dom.createElement as newCreateElement\n\n\n/**\n\n * Creates a new element
with the specified [name].\n\n * The element is initialized
with the specified [init] function.\n\n */\n\n@LowPriorityInOverloadResolution\n\n@Deprecated(\n\n message =
"This API is moved to another package, use 'kotlinx.dom.createElement' instead.\",\n\n replaceWith =
ReplaceWith("this.createElement(name, init)"),
\n\n "kotlinx.dom.createElement")\n\n)\n\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\n\npublic
inline fun Document.createElement(name: String, noinline init: Element.() -> Unit): Element =
this.newCreateElement(name, init)\n\n\n/**\n\n * Appends a newly created element with the specified [name] to this
element.\n\n * The element is initialized with the specified [init] function.\n\n */\n\n@LowPriorityInOverloadResolution\n\n@Deprecated(\n\n message =
"This API is moved to another package,
use 'kotlinx.dom.appendElement' instead.\",\n\n replaceWith = ReplaceWith("this.appendElement(name, init)"),
\n\n "kotlinx.dom.appendElement")\n\n)\n\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\n\npublic
inline fun Element.appendElement(name:
String, noinline init: Element.() -> Unit): Element = this.newAppendElement(name, init)\n\n\n/*\n\n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n */\n\n\npackage kotlin.dom\n\n\nimport
org.w3c.dom.Element\n\nimport kotlin.internal.LowPriorityInOverloadResolution\n\nimport kotlinx.dom.addClass as
newAddClass\n\nimport kotlinx.dom.hasClass as newHasClass\n\nimport kotlinx.dom.removeClass as
newRemoveClass\n\n\n/**\n\n * Returns true if the element has the given CSS class style in its 'class' attribute
*/\n\n@LowPriorityInOverloadResolution\n\n@Deprecated(\n\n message =
"This API is moved to another package,
use 'kotlinx.dom.hasClass' instead.\",\n\n replaceWith = ReplaceWith("this.hasClass(cssClass)"),
\n\n "kotlinx.dom.hasClass")\n\n)\n\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6")\n\ninline fun

```

Element.hasClass(cssClass:

```
String): Boolean = this.newHasClass(cssClass)\n\n/**\n * Adds CSS class to element. Has no effect if all specified\n classes are already in class attribute of the element\n *\n * @return true if at least one class has been added\n *\n * \n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to another package,\n use 'kotlinx.dom.addClass' instead.\",\n    replaceWith = ReplaceWith(\"this.addClass(cssClasses)\",\n \"kotlinx.dom.addClass\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\ninline fun\n Element.addClass(vararg cssClasses: String): Boolean = this.newAddClass(*cssClasses)\n\n\n/**\n * Removes all\n [cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the element\n *\n * @return true if at least one class has been removed\n *\n * \n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to another package, use 'kotlinx.dom.removeClass' instead.\",\n    replaceWith\n = ReplaceWith(\"this.removeClass(cssClasses)\",\n \"kotlinx.dom.removeClass\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\ninline\n fun Element.removeClass(vararg cssClasses: String): Boolean = this.newRemoveClass(*cssClasses), /*\n\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is\n governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n\npackage\n kotlin.dom\n\nimport org.w3c.dom.Element\nimport org.w3c.dom.Node\nimport\n kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.isElement as newIsElement\nimport\n kotlinx.dom.isText as newIsText\n\n\n/**\n * Gets a value indicating whether this node is a TEXT_NODE or a\n CDATA_SECTION_NODE.\n *\n * \n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API\n is moved to another package, use 'kotlinx.dom.isText' instead.\",\n    replaceWith = ReplaceWith(\"this.isText\",\n \"kotlinx.dom.isText\")\n)\n\n@DeprecatedSinceKotlin(warningSince\n = \"1.4\", errorSince = \"1.6\")\n\npublic val Node.isText: Boolean\n    inline get() = this.newIsText\n\n\n/**\n * Gets a\n value indicating whether this node is an [Element].\n *\n * \n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to another package, use 'kotlinx.dom.isElement' instead.\",\n    replaceWith =\n ReplaceWith(\"this.isElement\", \"kotlinx.dom.isElement\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\npublic val Node.isElement: Boolean\n    inline get() = this.newIsElement\n\n\n * Copyright\n 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed\n by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n\npackage\n org.w3c.dom.events\n\npublic fun EventListener(handler: (Event) -> Unit): EventListener =\n EventListenerHandler(handler)\n\nprivate class EventListenerHandler(private val handler: (Event) ->\n Unit) : EventListener {\n    public override fun handleEvent(event: Event) {\n        handler(event)\n    }\n\n    public\n    override fun toString(): String = \"EventListenerHandler($handler)\"\n\n\n * Copyright 2010-2018 JetBrains\n s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0\n license that can be found in the license/LICENSE.txt file.\n *\n\n\npackage org.w3c.dom\n\npublic external interface\n ItemArrayLike<out T> {\n    val length: Int\n    fun item(index: Int): T?\n\n\n/**\n * Returns the view of this\n `ItemArrayLike<T>` collection as `List<T>`\n *\n * \n\npublic fun <T> ItemArrayLike<T>.asList(): List<T> = object :\n AbstractList<T>() {\n    override val size: Int get() = this@asList.length\n\n    override fun get(index: Int): T = when\n (index) {\n        in 0..lastIndex -> this@asList.item(index).unsafeCast<T>()\n        else -> throw\n IndexOutOfBoundsException(\"index $index is not in range [0..$lastIndex]\")\n    }\n\n\n * Copyright 2010-2018\n JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code\n is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n\npackage\n kotlin.dom\n\nimport org.w3c.dom.Element\nimport org.w3c.dom.Node\nimport\n kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.appendText as newAppendText\nimport\n kotlinx.dom.clear as newClear\n\n\n/**\n * Removes all the children from this node.\n *\n * \n\n@LowPriorityInOverloadResolution\n@Deprecated(\n    message = \"This API is moved to another package,\n use 'kotlinx.dom.clear' instead.\",\n    replaceWith = ReplaceWith(\"this.clear()\",\n \"kotlinx.dom.clear\")\n)\n\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\npublic inline fun\n Node.clear() = this.newClear()\n\n\n/**\n * Creates text node and append it to the element.\n *\n * @return this
```

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element\n *\n@LowPriorityInOverloadResolution\n@Deprecated(\n  message = \"This API is moved to another
package,
  use 'kotlinx.dom.appendText' instead.\",\n  replaceWith = ReplaceWith(\"this.appendText(text)\",
\"kotlinx.dom.appendText(\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\ninline fun
Element.appendText(text: String): Element = this.newAppendText(text)\n\", /*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.js\n\n**\n * Reinterprets this value
as a value of the [dynamic type](/docs/reference/dynamic-type.html).\n *\n@kotlin.internal.InlineOnly\npublic
inline fun Any?.asDynamic(): dynamic = this\n\n**\n * Reinterprets this value as a value of the specified type [T]
without any actual type checking.\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T> Any?.unsafeCast():
@kotlin.internal.NoInfer T = this.asDynamic()\n\n**\n * Reinterprets this `dynamic` value as a value of
the specified type [T] without any actual type checking.\n
*\n@kotlin.internal.DynamicExtension\n@JsName(\"unsafeCastDynamic\")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> dynamic.unsafeCast(): @kotlin.internal.NoInfer T = this\n\n**\n * Allows to iterate this `dynamic`
object in the following cases:\n * - when it has an `iterator` function,\n * - when it is an array\n * - when it is an
instance of [kotlin.collections.Iterable]\n *\n@kotlin.internal.DynamicExtension\npublic operator fun
dynamic.iterator(): Iterator<dynamic> {\n  val r: Any? = this\n\n  return when {\n    this[\"iterator\"] != null -
->\n      this[\"iterator\"]()\n    isArrayish(r) ->\n      r.unsafeCast<Array<*>>().iterator()\n    else ->\n
(r as Iterable<*>).iterator()\n  }\n}\n\", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt
file.\n *\n\n// a package is omitted to get declarations directly under the
module\n\n@JsName(\"throwNPE\")\ninternal fun throwNPE(message: String) {\n  throw
NullPointerException(message)\n}\n\n@JsName(\"throwCCE\")\ninternal fun throwCCE() {\n  throw
ClassCastException(\"Illegal cast\")\n}\n\n@JsName(\"throwISE\")\ninternal fun throwISE(message: String) {\n
throw IllegalStateException(message)\n}\n\n@JsName(\"throwUPAE\")\ninternal fun throwUPAE(propertyName:
String) {\n  throw UninitializedPropertyAccessException(\"lateinit property ${propertyName} has not been
initialized\")\n}\n\", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
*\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\npackage kotlin.collections\n\n**\n * Groups elements from the [Grouping] source by key and counts elements
in each group.\n *\n * @return a [Map] associating the key of
each group with the count of elements in the group.\n *\n * @sample
samples.collections.Grouping.groupingByEachCount\n *\n@SinceKotlin(\"1.1\")\npublic actual fun <T, K>
Grouping<T, K>.eachCount(): Map<K, Int> =\n  fold(0) { acc, _ -> acc + 1 }\n\n/*\n\n**\n * Groups elements from
the [Grouping] source by key and sums values provided by the [valueSelector] function for elements in each
group.\n *\n * @return a [Map] associating the key of each group with the count of element in the group.\n
*\n *\n@SinceKotlin(\"1.1\")\npublic inline fun <T, K> Grouping<T, K>.eachSumOf(valueSelector: (T) -> Int):
Map<K, Int> =\n  fold(0) { acc, e -> acc + valueSelector(e) }\n\n*/\n\n**\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName(\"GroupingKt\")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage
kotlin.collections\n\n**\n
*\n * Represents a source of elements with a [keyOf] function, which can be applied to each element to get its key.\n
*\n * A [Grouping] structure serves as an intermediate step in group-and-fold operations:\n * they group elements by
their keys and then fold each group with some aggregating operation.\n *\n * It is created by attaching `keySelector:
(T) -> K` function to a source of elements.\n * To get an instance of [Grouping] use one of `groupingBy` extension
functions:\n * - [Iterable.groupingBy]\n * - [Sequence.groupingBy]\n * - [Array.groupingBy]\n * -
[CharSequence.groupingBy]\n *\n * For the list of group-and-fold operations available, see the [extension

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functions](#extension-functions) for `Grouping`.
\n *^@SinceKotlin("1.1")\npublic interface Grouping<T, out K>
{\n  /** Returns an [Iterator] over the elements of the source of this grouping. */
\n  fun sourceIterator():
Iterator<T>\n  /** Extracts the key of an [element]. */
\n  fun keyOf(element: T): K\n}\n\n/**
 * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group
sequentially,
\n * passing the previously accumulated value and the current element as arguments, and stores the
results in a new map.
\n * The key for each element is provided by the [Grouping.keyOf] function.
\n *
\n * @param operation function is invoked on each element with the following parameters:
\n * - `key`: the key of the group this element belongs to;
\n * - `accumulator`: the current value of the accumulator of the group, can be `null`
if it's the first `element` encountered in the group;
\n * - `element`: the element from the source being aggregated;
\n * - `first`: indicates whether it's the first `element` encountered in the group.
\n *
\n * @return a [Map] associating
the key of each group with the result of aggregation of the group elements.
\n *
\n * @sample
samples.collections.Grouping.aggregateByRadix
\n *^@SinceKotlin("1.1")\npublic inline fun <T, K, R>
Grouping<T,
K>.aggregate(\n  operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R): Map<K, R> {\n  return
aggregateTo(mutableMapOf<K, R>(), operation)\n}\n\n/**
 * Groups elements from the [Grouping] source by key
and applies [operation] to the elements of each group sequentially,
\n * passing the previously accumulated value and
the current element as arguments,
\n * and stores the results in the given [destination] map.
\n * The key for each
element is provided by the [Grouping.keyOf] function.
\n *
\n * @param operation a function that is invoked on each
element with the following parameters:
\n * - `key`: the key of the group this element belongs to;
\n * -
`accumulator`: the current value of the accumulator of the group, can be `null` if it's the first `element`
encountered
in the group;
\n * - `element`: the element from the source being aggregated;
\n * - `first`: indicates whether it's the
first `element` encountered in the group.
\n *
\n * If the [destination] map
already has a value corresponding to some key,
\n * then the elements being aggregated for that key are never
considered as `first`.
\n *
\n * @return the [destination] map associating the key of each group with the result of
aggregation of the group elements.
\n *
\n * @sample samples.collections.Grouping.aggregateByRadixTo
\n *^@SinceKotlin("1.1")\npublic inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T,
K>.aggregateTo(\n  destination: M,\n  operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R): M
{\n  for (e in this.sourceIterator()) {\n    val key = keyOf(e)\n    val accumulator = destination[key]\n
destination[key] = operation(key, accumulator, e, accumulator == null && !destination.containsKey(key))\n  }\n
return destination\n}\n\n/**
 * Groups elements from the [Grouping] source by key and applies [operation] to the
elements of each group sequentially,
\n * passing the previously accumulated value and the current element as
arguments,
\n * and stores the results in a new map.
\n * An initial value of accumulator is provided by [initialValueSelector]
function.
\n *
\n * @param initialValueSelector a function that provides an initial value of accumulator for each
group.
\n * It's invoked with parameters:
\n * - `key`: the key of the group;
\n * - `element`: the first element being
encountered in that group.
\n *
\n * @param operation a function that is invoked on each element with the following
parameters:
\n * - `key`: the key of the group this element belongs to;
\n * - `accumulator`: the current value of the
accumulator of the group;
\n * - `element`: the element from the source being accumulated.
\n *
\n * @return a [Map]
associating the key of each group with the result of accumulating the group elements.
\n *
\n * @sample
samples.collections.Grouping.foldByEvenLengthWithComputedInitialValue
\n *^@SinceKotlin("1.1")\npublic
inline fun <T, K, R> Grouping<T, K>.fold(\n  initialValueSelector: (key: K, element: T) -> R,\n  operation: (key: K, accumulator: R, element: T) -> R): Map<K, R> =\n
@Suppress("UNCHECKED_CAST")\n  aggregate { key, acc, e, first -> operation(key, if (first)
initialValueSelector(key, e) else acc as R, e) }\n\n/**
 * Groups elements from the [Grouping] source by key and
applies [operation] to the elements of each group sequentially,
\n * passing the previously accumulated value and the
current element as arguments,
\n * and stores the results in the given [destination] map.
\n * An initial value of
accumulator is provided by [initialValueSelector] function.
\n *
\n * @param initialValueSelector a function that
provides an initial value of accumulator for each group.
\n * It's invoked with parameters:
\n * - `key`: the key of the

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group;\n * - `element`: the first element being encountered in that group.\n *\n * If the [destination] map already has a value corresponding to some key, that value is used as an initial value of\n * the accumulator for that group and the [initialValueSelector]

function is not called for that group.\n *\n * @param operation a function that is invoked on each element with the following parameters:\n * - `key`: the key of the group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group;\n * - `element`: the element from the source being accumulated.\n *\n *

@return the [destination] map associating the key of each group with the result of accumulating the group elements.\n *\n * @sample samples.collections.Grouping.foldByEvenLengthWithComputedInitialValueTo\n *\n */\n@SinceKotlin("1.1")\npublic inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n destination: M,\n initialValueSelector: (key: K, element: T) -> R,\n operation: (key: K, accumulator: R, element: T) -> R\n): M =\n @Suppress("UNCHECKED_CAST")\n aggregateTo(destination) { key, acc, e, first ->

operation(key, if (first) initialValueSelector(key, e) else acc as R, e) }\n\n\n**\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current element as arguments, and stores the results in a new map.\n * An initial value of accumulator is the same [initialValue] for each group.\n *\n *

@param operation a function that is invoked on each element with the following parameters:\n * - `accumulator`: the current value of the accumulator of the group;\n * - `element`: the element from the source being accumulated.\n *\n * @return a [Map] associating the key of each group with the result of accumulating the group elements.\n *\n * @sample

samples.collections.Grouping.foldByEvenLengthWithConstantInitialValue\n *\n */\n@SinceKotlin("1.1")\npublic inline fun <T, K, R> Grouping<T, K>.fold(\n initialValue: R,\n operation: (accumulator: R, element: T) -> R\n): Map<K, R> =\n @Suppress("UNCHECKED_CAST")\n aggregate { _, acc, e, first -> operation(if (first) initialValue else

acc as R, e) }\n\n\n**\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of accumulator is the same [initialValue] for each group.\n *\n * If the [destination] map already has a value corresponding to the key of some group,\n * that value is used as an initial value of the accumulator for that group.\n *\n * @param operation a function that is invoked on each element with the following parameters:\n * - `accumulator`: the current value of the accumulator of the group;\n * - `element`: the element from the source being accumulated.\n *\n * @return the [destination] map associating the key of each group with the result of accumulating the group elements.\n *\n *

@sample samples.collections.Grouping.foldByEvenLengthWithConstantInitialValueTo\n

*/\n@SinceKotlin("1.1")\npublic

inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n destination: M,\n initialValue: R,\n operation: (accumulator: R, element: T) -> R\n): M =\n @Suppress("UNCHECKED_CAST")\n

aggregateTo(destination) { _, acc, e, first -> operation(if (first) initialValue else acc as R, e) }\n\n\n**\n * Groups elements from the [Grouping] source by key and applies the reducing [operation] to the elements of each group\n * sequentially starting from the second element of the group,\n * passing the previously accumulated value and the current element as arguments,\n * and stores the results in a new map.\n * An initial value of accumulator is the first element of the group.\n *\n * @param operation a function that is invoked on each subsequent element of the group with the following parameters:\n * - `key`: the key of the group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group;\n * - `element`: the element

from the source being accumulated.\n *\n * @return a [Map] associating the key of each group with the result of accumulating the group elements.\n *\n * @sample samples.collections.Grouping.reduceByMaxVowels\n

*/\n@SinceKotlin("1.1")\npublic inline fun <S, T : S, K> Grouping<T, K>.reduce(\n operation: (key: K, accumulator: S, element: T) -> S\n): Map<K, S> =\n aggregate { key, acc, e, first ->\n @Suppress("UNCHECKED_CAST")\n if (first) e else operation(key, acc as S, e)\n }\n\n\n**\n * Groups

elements from the [Grouping] source by key and applies the reducing [operation] to the elements of each group\n * sequentially starting from the second element of the group,\n * passing the previously accumulated value and the


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* } \n * ``\n * \n * will be generated:\n * ``js\n * function test(j, p, newValue) {\n *   j["prop"] =
1;\n *   j[p] = newValue;\n * } \n * } \n * ``\n * \n operator fun set(propertyName: String, value:
Any?): Unit \n \n /** \n * Returns a simple JavaScript object (as [Json]) using provided key-value pairs as names
and values of its properties. \n */ \n public fun json(vararg pairs: Pair<String, Any?>): Json {\n   val res: dynamic =
js("{}") \n   for ((name, value) in pairs) {\n     res[name] = value \n   } \n   return res \n } \n \n /** \n * Adds key-
value pairs from [other] to [this]. \n * Returns the original receiver. \n */ \n public fun Json.add(other: Json): Json {\n
  val keys: Array<String> = js("Object").keys(other) \n   for (key in keys) {\n     if
(other.asDynamic().hasOwnProperty(key)) {\n       this[key] = other[key]; \n     } \n   } \n   return
this \n } \n \n /** \n * Exposes the JavaScript [JSON object](https://developer.mozilla.org/en-
US/docs/Web/JavaScript/Reference/Global_Objects/JSON) to Kotlin. \n
*/ \n @Suppress("NOT_DOCUMENTED") \n public external object JSON {\n   public fun stringify(o: Any?):
String \n   public fun stringify(o: Any?, replacer: ((key: String,
value: Any?) -> Any?): String \n   public fun stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? =
definedExternally, space: Int): String \n   public fun stringify(o: Any?, replacer: ((key: String, value: Any?) ->
Any?)? = definedExternally, space: String): String \n   public fun stringify(o: Any?, replacer: Array<String>):
String \n   public fun stringify(o: Any?, replacer: Array<String>, space: Int): String \n   public fun stringify(o: Any?,
replacer: Array<String>, space: String): String \n   public fun <T> parse(text: String): T \n   public fun <T>
parse(text: String, reviver: ((key: String, value: Any?) -> Any?): T) \n } \n \n /* Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file. \n */ \n package kotlin.math \n \n \n import
kotlin.internal.InlineOnly \n import kotlin.js.JsMath as nativeMath \n \n \n region =====
Double Math ===== \n \n /** \n * Computes the sine of the angle [x]
given in radians. \n * \n * Special cases: \n * - `sin(NaN|+Inf|-Inf)` is `NaN` \n
*/ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun sin(x: Double): Double =
nativeMath.sin(x) \n \n /** \n * Computes the cosine of the angle [x] given in radians. \n * \n * Special cases: \n * -
`cos(NaN|+Inf|-Inf)` is `NaN` \n */ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun cos(x: Double):
Double = nativeMath.cos(x) \n \n /** \n * Computes the tangent of the angle [x] given in radians. \n * \n * Special cases: \n
* - `tan(NaN|+Inf|-Inf)` is `NaN` \n */ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun tan(x:
Double): Double = nativeMath.tan(x) \n \n /** \n * Computes the arc sine of the value [x]; \n * the returned value is an
angle in the range from `-PI/2` to `PI/2` radians. \n * \n * Special cases: \n * - `asin(x)` is `NaN`, when `abs(x) > 1`
or x is `NaN` \n */ \n @SinceKotlin("1.2") \n @InlineOnly \n public
actual inline fun asin(x: Double): Double = nativeMath.asin(x) \n \n /** \n * Computes the arc cosine of the value
[x]; \n * the returned value is an angle in the range from `0.0` to `PI` radians. \n * \n * Special cases: \n * - `acos(x)`
is `NaN`, when `abs(x) > 1` or x is `NaN` \n */ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun
acos(x: Double): Double = nativeMath.acos(x) \n \n /** \n * Computes the arc tangent of the value [x]; \n * the returned
value is an angle in the range from `-PI/2` to `PI/2` radians. \n * \n * Special cases: \n * - `atan(NaN)` is `NaN` \n
*/ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun atan(x: Double): Double =
nativeMath.atan(x) \n \n /** \n * Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond \n * to the
rectangular coordinates `(x, y)` by computing the arc tangent of the value [y] / [x]; \n * the returned value is an angle
in the range from `-PI` to `PI` radians. \n * \n * Special cases: \n *
- `atan2(0.0, 0.0)` is `0.0` \n * - `atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0` \n * - `atan2(-0.0, x)` is
`-0.0` for `x > 0` and `-PI` for `x < 0` \n * - `atan2(y, +Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for
`-Inf < y < 0` \n * - `atan2(y, -Inf)` is `PI` for `0 < y < +Inf` and `-PI` for `-Inf < y < 0` \n * - `atan2(y, 0.0)` is
`PI/2` for `y > 0` and
`-PI/2` for `y < 0` \n * - `atan2(+Inf, x)` is `PI/2` for finite `x` \n * - `atan2(-Inf, x)` is `-PI/2` for finite `x` \n * -
`atan2(NaN, x)` and `atan2(y, NaN)` is `NaN` \n */ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun
atan2(y: Double, x: Double): Double = nativeMath.atan2(y, x) \n \n /** \n * Computes the hyperbolic sine of the value
[x]. \n * \n * Special cases: \n * - `sinh(NaN)` is `NaN` \n * - `sinh(+Inf)` is `+Inf` \n * - `sinh(-Inf)` is
`-Inf` \n */ \n @SinceKotlin("1.2") \n @InlineOnly \n public actual inline fun sinh(x: Double): Double =

```

`nativeMath.sinh(x)` Computes the hyperbolic cosine of the value `[x]`.
 Special cases:
`sinh(NaN)` is `NaN`
`sinh(+Inf)` is `+Inf`
`sinh(-Inf)` is `-Inf`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun cosh(x: Double): Double =`
`nativeMath.cosh(x)` Computes the hyperbolic tangent of the value `[x]`.
 Special cases:
`tanh(NaN)` is `NaN`
`tanh(+Inf)` is `1.0`
`tanh(-Inf)` is `-1.0`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun tanh(x: Double): Double =`
`nativeMath.tanh(x)` Computes the inverse hyperbolic sine of the value `[x]`.
 The returned value is `y` such that `sinh(y) == x`.
 Special cases:
`asinh(NaN)` is `NaN`
`asinh(+Inf)` is `+Inf`
`asinh(-Inf)` is `-Inf`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun asinh(x: Double): Double =`
`nativeMath.asinh(x)` Computes the inverse hyperbolic cosine of the value `[x]`.
 The returned value is positive `y` such that `cosh(y) == x`.
 Special cases:
`acosh(NaN)` is `NaN`
`acosh(x)` is `NaN` when `x < 1`
`acosh(+Inf)` is `+Inf`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun acosh(x: Double): Double =`
`nativeMath.acosh(x)` Computes the inverse hyperbolic tangent of the value `[x]`.
 The returned value is `y` such that `tanh(y) == x`.
 Special cases:
`atanh(NaN)` is `NaN`
`atanh(x)` is `NaN` when `x > 1` or `x < -1`
`atanh(1.0)` is `+Inf`
`atanh(-1.0)` is `-Inf`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun atanh(x: Double): Double =`
`nativeMath.atanh(x)` Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.
 Special cases:
 - returns `+Inf` if any of arguments is infinite
 - returns `NaN` if any of arguments is `NaN` and the other is not infinite
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun hypot(x: Double, y: Double): Double =`
`nativeMath.hypot(x, y)` Computes the positive square root of the value `[x]`.
 Special cases:
`sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun sqrt(x: Double): Double =`
`nativeMath.sqrt(x)` Computes Euler's number `e` raised to the power of the value `[x]`.
 Special cases:
`exp(NaN)` is `NaN`
`exp(+Inf)` is `+Inf`
`exp(-Inf)` is `0.0`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun exp(x: Double): Double =`
`nativeMath.exp(x)` Computes `exp(x) - 1`.
 This function can be implemented to produce more precise result for `[x]` near zero.
 Special cases:
`expm1(NaN)` is `NaN`
`expm1(+Inf)` is `+Inf`
`expm1(-Inf)` is `-1.0`
 @see `[exp]` function.
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun expm1(x: Double): Double =`
`nativeMath.expm1(x)` Computes the logarithm of the value `[x]` to the given `[base]`.
 Special cases:
`log(x, b)` is `NaN` if either `x` or `b` are `NaN`
`log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0`
`log(+Inf, +Inf)` is `NaN`
`log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1`
`log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1`
 See also logarithm functions for common fixed bases: `[ln]`, `[log10]` and `[log2]`.
`@SinceKotlin("1.2")@public actual fun log(x: Double, base: Double): Double {`
 if (base <= 0.0 || base == 1.0) return Double.NaN
 return
`nativeMath.log(x) / nativeMath.log(base)}`
`nativeMath.log(x)` Computes the natural logarithm (base `E`) of the value `[x]`.
 Special cases:
`ln(NaN)` is `NaN`
`ln(x)` is `NaN` when `x < 0.0`
`ln(+Inf)` is `+Inf`
`ln(0.0)` is `-Inf`
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun ln(x: Double): Double =`
`nativeMath.log(x)` Computes the common logarithm (base 10) of the value `[x]`.
 @see `[ln]` function for special cases.
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun log10(x: Double): Double =`
`nativeMath.log10(x)` Computes the binary logarithm (base 2) of the value `[x]`.
 @see `[ln]` function for special cases.
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun log2(x: Double): Double =`
`nativeMath.log2(x)` Computes `ln(x + 1)`.
 This function can be implemented to produce more precise result for `[x]` near zero.
 Special cases:
`ln1p(NaN)` is `NaN`
`ln1p(x)` is `NaN` where `x < -1.0`
`ln1p(-1.0)` is `-Inf`
`ln1p(+Inf)` is `+Inf`
 @see `[ln]` function
 @see `[expm1]` function
`@SinceKotlin("1.2")@InlineOnly@public actual inline fun ln1p(x: Double): Double =`
`nativeMath.log1p(x)` Rounds the given value `[x]` to an integer towards positive infinity.
 @return the

smallest double value that is greater

than or equal to the given value [x] and is a mathematical integer.
Special cases: $\text{ceil}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ceil(x: Double): Double =
```

```
nativeMath.ceil(x)\n\n/**\n * Rounds the given value [x] to an integer towards negative infinity.\n * @return the largest double value that is smaller than or equal to the given value [x] and is a mathematical integer.\n * Special cases:  $\text{ceil}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun floor(x: Double): Double =
```

```
nativeMath.floor(x)\n\n/**\n * Rounds the given value [x] to an integer towards zero.\n * @return the value [x] having its fractional part truncated.\n * Special cases:  $\text{floor}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun truncate(x: Double): Double =
```

```
nativeMath.trunc(x)\n\n/**\n * Rounds the given value [x] towards the closest integer with ties rounded towards even integer.\n * Special cases:  $\text{truncate}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.
```

```
*\n@SinceKotlin("1.2")\npublic actual fun round(x: Double): Double {\n    if (x % 0.5 != 0.0) {\n        return nativeMath.round(x)\n    }\n    val floor = floor(x)\n    return if (floor % 2 == 0.0) floor else ceil(x)\n}\n\n/**\n * Returns the absolute value of the given value [x].\n * Special cases:  $\text{abs}(\text{NaN})$  is  $\text{NaN}$ \n * @see absoluteValue extension property for [Double]\n */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun abs(x: Double): Double =
```

```
nativeMath.abs(x)\n\n/**\n * Returns the sign of the given value [x]:  $-1.0$  if the value is negative,  $0.0$  if the value is zero,  $1.0$  if
```

```
the value is positive\n * Special case:  $\text{sign}(\text{NaN})$  is  $\text{NaN}$ \n */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sign(x: Double): Double =
```

```
nativeMath.sign(x)\n\n/**\n * Returns the smaller of two values.\n * If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ .  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Double, b: Double): Double =
```

```
nativeMath.min(a, b)\n\n/**\n * Returns the greater of two values.\n * If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ .  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun max(a: Double, b: Double): Double =
```

```
nativeMath.max(a, b)\n\n// extensions\n\n/**\n * Raises this value to the power [x].\n * Special cases:  $\text{pow}(0.0)$  is  $1.0$ ,  $\text{pow}(1.0) == b$ ,  $\text{pow}(\text{NaN})$  is  $\text{NaN}$ ,  $\text{NaN}.\text{pow}(x)$  is  $\text{NaN}$  for  $x != 0.0$ ,  $\text{pow}(\text{Inf})$  is  $\text{NaN}$  for  $\text{abs}(b) == 1.0$ ,  $\text{pow}(x)$  is  $\text{NaN}$  for  $b < 0$  and  $x$  is finite and not an integer.  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic
```

```
actual inline fun Double.pow(x: Double): Double = nativeMath.pow(this, x)\n\n/**\n * Raises this value to the integer power [n].  
 * See the other overload of [pow] for details.  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.pow(n: Int): Double =
```

```
nativeMath.pow(this, n.toDouble())\n\n/**\n * Returns the absolute value of this value.  
 * Special cases:  $\text{NaN}.\text{absoluteValue}$  is  $\text{NaN}$ .  
 * @see abs function  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Double.absoluteValue: Double get() = nativeMath.abs(this)\n\n/**\n * Returns the sign of this value:  $-1.0$  if the value is negative,  $0.0$  if the value is zero,  $1.0$  if the value is positive.  
 * Special case:  $\text{NaN}.\text{sign}$  is  $\text{NaN}$ .  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Double.sign: Double get() = nativeMath.sign(this)\n\n/**\n * Returns this value with the sign bit same as
```

```
of the [sign] value.  
 */
```

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.withSign(sign: Int): Double = this.withSign(sign.toDouble())\n\n/**\n * Returns the ulp (unit in the last place) of this value.  
 * An ulp is a positive distance between this value and the next nearest [Double] value larger in magnitude.  
 * Special Cases:  $\text{NaN}.\text{ulp}$  is  $\text{NaN}$ ,  $x.\text{ulp}$  is  $+\text{Inf}$  when  $x$  is  $+\text{Inf}$  or  $-\text{Inf}$ ,  $0.0.\text{ulp}$  is  $\text{Double}.\text{MIN\_VALUE}$ .  
 */
```

```
*\n@SinceKotlin("1.2")\npublic actual val Double.ulp: Double get() = when {\n    this < 0 -> (-this).ulp\n    this.isNaN() || this == Double.POSITIVE_INFINITY -> this\n    this == Double.MAX_VALUE -> this - this.nextDown()\n    else -> this.nextUp() - this\n}\n\n/**\n * Returns the [Double] value nearest to this value in direction of positive infinity.  
 */
```

```
*\n@SinceKotlin("1.2")\npublic actual fun
```

```

Double.nextUp(): Double = when {
    this.isNaN() || this == Double.POSITIVE_INFINITY -> this
    this == 0.0 -> Double.MIN_VALUE
    else -> Double.fromBits(this.toRawBits() + if (this > 0) 1 else -1)
}
Returns the [Double] value nearest to this value in direction of negative infinity.

@SinceKotlin("1.2")
public actual fun Double.nextDown(): Double = when {
    this.isNaN() || this == Double.NEGATIVE_INFINITY -> this
    this == 0.0 -> -Double.MIN_VALUE
    else -> Double.fromBits(this.toRawBits() + if (this > 0) -1 else 1)
}
Returns the [Double] value nearest to this value in direction from this value towards the value [to].
Special cases:
    - `x.nextTowards(y)` is `NaN` if either `x` or `y` are `NaN`
    - `x.nextTowards(x) == x`

@SinceKotlin("1.2")
public actual fun Double.nextTowards(to: Double): Double = when {
    this.isNaN() || to.isNaN() -> Double.NaN
    to == this -> to
    to > this -> this.nextUp()
    else /* to < this */ -> this.nextDown()
}
Rounds this [Double] value to the nearest integer and converts the result to [Int].
Ties are rounded towards positive infinity.
Special cases:
    - `x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`
    - `x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE`
    - @throws IllegalArgumentException when this value is `NaN`

@SinceKotlin("1.2")
public actual fun Double.roundToInt(): Int = when {
    isNaN() -> throw IllegalArgumentException("Cannot round NaN value.")
    this > Int.MAX_VALUE -> Int.MAX_VALUE
    this < Int.MIN_VALUE -> Int.MIN_VALUE
    else -> nativeMath.round(this).toInt()
}
Rounds this [Double] value to the nearest integer and converts the result to [Long].
Ties are rounded towards positive infinity.
Special cases:
    - `x.roundToLong() == Long.MAX_VALUE` when `x > Long.MAX_VALUE`
    - `x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE`
    - @throws IllegalArgumentException when this value is `NaN`

@SinceKotlin("1.2")
public actual fun Double.roundToLong(): Long = when {
    isNaN() -> throw IllegalArgumentException("Cannot round NaN value.")
    this > Long.MAX_VALUE -> Long.MAX_VALUE
    this < Long.MIN_VALUE -> Long.MIN_VALUE
    else -> nativeMath.round(this).toLong()
}
// endregion
// endregion

===== Float Math =====
Computes the sine of the angle [x] given in radians.
Special cases:
    - `sin(NaN|+Inf|-Inf)` is `NaN`

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun sin(x: Float): Float = nativeMath.sin(x.toDouble()).toFloat()
Computes the cosine of the angle [x] given in radians.
Special cases:
    - `cos(NaN|+Inf|-Inf)` is `NaN`

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun cos(x: Float): Float = nativeMath.cos(x.toDouble()).toFloat()
Computes the tangent of the angle [x] given in radians.
Special cases:
    - `tan(NaN|+Inf|-Inf)` is `NaN`

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun tan(x: Float): Float = nativeMath.tan(x.toDouble()).toFloat()
Computes the arc sine of the value [x]; the returned value is an angle in the range from `-PI/2` to `PI/2` radians.
Special cases:
    - `asin(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun asin(x: Float): Float = nativeMath.asin(x.toDouble()).toFloat()
Computes the arc cosine of the value [x]; the returned value is an angle in the range from `0.0` to `PI` radians.
Special cases:
    - `acos(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun acos(x: Float): Float = nativeMath.acos(x.toDouble()).toFloat()
Computes the arc tangent of the value [x]; the returned value is an angle in the range from `-PI/2` to `PI/2` radians.
Special cases:
    - `atan(NaN)` is `NaN`

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun atan(x: Float): Float = nativeMath.atan(x.toDouble()).toFloat()
Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond to the rectangular coordinates `(x, y)` by computing the arc tangent of the value [y] / [x]; the returned value is an angle in the range from `-PI` to `PI` radians.
Special cases:
    - `atan2(0.0, 0.0)` is `0.0`
    - `atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0`
    - `atan2(-0.0, x)` is `-0.0` for `x > 0` and `-PI` for `x < 0`
    - `atan2(y, +Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for `-Inf < y < 0`
    - `atan2(y, -Inf)` is `PI` for `0 < y < +Inf` and `-PI` for `-Inf < y < 0`
    - `atan2(y, 0.0)` is `PI/2` for `y > 0` and `-PI/2` for `y < 0`

```

`atan2(+Inf, x)` is `PI/2` for finite `x` `atan2(-Inf, x)` is `-PI/2` for finite `x` `atan2(NaN, x)` and `atan2(y, NaN)` is `NaN` `@SinceKotlin("1.2")\n@InlineOnly\npublic`
`actual inline fun atan2(y: Float, x: Float): Float = nativeMath.atan2(y.toDouble(), x.toDouble()).toFloat()\n\n**\n *`
 Computes the hyperbolic sine of the value `[x]`. `Special cases:` `sinh(NaN)` is `NaN` `sinh(+Inf)` is `+Inf` `sinh(-Inf)` is `-Inf` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sinh(x: Float): Float = nativeMath.sinh(x.toDouble()).toFloat()\n\n**\n *`
 Computes the hyperbolic cosine of the value `[x]`. `Special cases:` `cosh(NaN)` is `NaN` `cosh(+Inf|-Inf)` is `+Inf` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cosh(x: Float): Float = nativeMath.cosh(x.toDouble()).toFloat()\n\n**\n *`
 Computes the hyperbolic tangent of the value `[x]`. `Special cases:` `tanh(NaN)` is `NaN` `tanh(+Inf)` is `1.0` `tanh(-Inf)` is `-1.0` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tanh(x: Float): Float = nativeMath.tanh(x.toDouble()).toFloat()\n\n**\n *`
 Computes the inverse hyperbolic sine of the value `[x]`. The returned value is `y` such that `sinh(y) == x`. `Special cases:` `asinh(NaN)` is `NaN` `asinh(+Inf)` is `+Inf` `asinh(-Inf)` is `-Inf` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asinh(x: Float): Float = nativeMath.asinh(x.toDouble()).toFloat()\n\n**\n *`
 Computes the inverse hyperbolic cosine of the value `[x]`. The returned value is positive `y` such that `cosh(y) == x`. `Special cases:` `acosh(NaN)` is `NaN` `acosh(x)` is `NaN` when `x < 1` `acosh(+Inf)` is `+Inf` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun acosh(x: Float): Float = nativeMath.acosh(x.toDouble()).toFloat()\n\n**\n *`
 Computes the inverse hyperbolic tangent of the value `[x]`. The returned value is `y` such that `tanh(y) == x`. `Special cases:` `atanh(NaN)` is `NaN` `atanh(x)` is `NaN` when `x > 1` or `x < -1` `atanh(1.0)` is `+Inf` `atanh(-1.0)` is `-Inf` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atanh(x: Float): Float = nativeMath.atanh(x.toDouble()).toFloat()\n\n**\n *`
 Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow. `Special cases:` returns `+Inf` if any of arguments is infinite returns `NaN` if any of arguments is `NaN` and the other is not infinite `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun hypot(x: Float, y: Float): Float = nativeMath.hypot(x.toDouble(), y.toDouble()).toFloat()\n\n**\n *`
 Computes the positive square root of the value `[x]`. `Special cases:` `sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sqrt(x: Float): Float = nativeMath.sqrt(x.toDouble()).toFloat()\n\n**\n *`
 Computes Euler's number `e` raised to the power of the value `[x]`. `Special cases:` `exp(NaN)` is `NaN` `exp(+Inf)` is `+Inf` `exp(-Inf)` is `0.0` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun exp(x: Float): Float = nativeMath.exp(x.toDouble()).toFloat()\n\n**\n *`
 Computes `exp(x) - 1`. This function can be implemented to produce more precise result for `[x]` near zero. `Special cases:` `expm1(NaN)` is `NaN` `expm1(+Inf)` is `+Inf` `expm1(-Inf)` is `-1.0` `@see [exp] function.\n\n**\n *`
`@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun expm1(x: Float): Float = nativeMath.expm1(x.toDouble()).toFloat()\n\n**\n *`
 Computes the logarithm of the value `[x]` to the given `[base]`. `Special cases:` `log(x, b)` is `NaN` if either `x` or `b` are `NaN` `log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0` `log(+Inf, +Inf)` is `NaN` `log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1` `log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1` `@see also logarithm functions for common fixed bases: [ln], [log10] and [log2].\n\n**\n *`
`@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log(x: Float, base: Float): Float = log(x.toDouble(), base.toDouble()).toFloat()\n\n**\n *`
 Computes the natural logarithm (base `E`) of the value `[x]`. `Special cases:` `ln(NaN)` is `NaN` `ln(x)` is `NaN` when `x < 0.0` `ln(+Inf)` is `+Inf` `ln(0.0)` is `-Inf` `@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ln(x: Float): Float = nativeMath.log(x.toDouble()).toFloat()\n\n**\n *`
 Computes the common logarithm (base 10) of the value `[x]`. `@see [ln] function for special cases.\n\n**\n *`
`@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log10(x: Float): Float = nativeMath.log10(x.toDouble()).toFloat()\n\n**\n *`
 Computes the binary logarithm (base 2) of the

value [x].
`@see [ln] function for special cases.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun log2(x: Float): Float = nativeMath.log2(x.toDouble()).toFloat()`
`Computes $\ln(a + 1)$.`
This function can be implemented to produce more precise result for [x] near zero.
`Special cases:`
 `$\ln(\text{NaN})$ is NaN`
 `$\ln(x)$ is NaN where $x < -1.0$`
 `$\ln(-1.0)$ is $-\text{Inf}$`
 `$\ln(+\text{Inf})$ is $+\text{Inf}$`
`@see [ln] function`
`@see [expm1] function`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun ln1p(x: Float): Float = nativeMath.log1p(x.toDouble()).toFloat()`
`Rounds the given value [x] to an integer towards positive infinity.`
`@return the smallest Float value that is greater than or equal to the given value [x] and is a mathematical integer.`
`Special cases:`
 `$\text{ceil}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun ceil(x: Float): Float = nativeMath.ceil(x.toDouble()).toFloat()`
`Rounds the given value [x] to an integer towards negative infinity.`
`@return the largest Float value that is smaller than or equal to the given value [x] and is a mathematical integer.`
`Special cases:`
 `$\text{floor}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun floor(x: Float): Float = nativeMath.floor(x.toDouble()).toFloat()`
`Rounds the given value [x] to an integer towards zero.`
`@return the value [x] having its fractional part truncated.`
`Special cases:`
 `$\text{truncate}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun truncate(x: Float): Float = truncate(x.toDouble()).toFloat()`
`Rounds the given value [x] towards the closest integer with ties rounded towards even integer.`
`Special cases:`
 `$\text{round}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun round(x: Float): Float = round(x.toDouble()).toFloat()`
`Returns the absolute value of the given value [x].`
`Special cases:`
 `$\text{abs}(\text{NaN})$ is NaN`
`@see absoluteValue extension property for [Float]`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun abs(x: Float): Float = nativeMath.abs(x.toDouble()).toFloat()`
`Returns the sign of the given value [x]:`
 `-1.0 if the value is negative,`
`zero if the value is zero,`
 `1.0 if the value is positive`
`Special case:`
 `$\text{sign}(\text{NaN})$ is NaN`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun sign(x: Float): Float = nativeMath.sign(x.toDouble()).toFloat()`
`Returns the smaller of two values.`
`If either value is NaN , then the result is NaN .`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun min(a: Float, b: Float): Float = nativeMath.min(a, b)`
`Returns the greater of two values.`
`If either value is NaN , then the result is NaN .`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun max(a: Float, b: Float): Float = nativeMath.max(a, b)`
`Extensions`
`Raises this value to the power [x].`
`Special cases:`
 `$b.\text{pow}(0.0)$ is 1.0`
 `$b.\text{pow}(1.0) == b$`
 `$b.\text{pow}(\text{NaN})$ is NaN`
 `$\text{NaN}.\text{pow}(x)$ is NaN for $x != 0.0$`
 `$b.\text{pow}(\text{Inf})$ is NaN for $\text{abs}(b) == 1.0$`
 `$b.\text{pow}(x)$ is NaN for $b < 0$ and x is finite and not an integer`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun Float.pow(x: Float): Float = nativeMath.pow(this.toDouble(), x.toDouble()).toFloat()`
`Raises this value to the integer power [n].`
`See the other overload of [pow] for details.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun Float.pow(n: Int): Float = nativeMath.pow(this.toDouble(), n.toDouble()).toFloat()`
`Returns the absolute value of this value.`
`Special cases:`
 `$\text{NaN}.\text{absoluteValue}$ is NaN`
`@see abs function`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline val Float.absoluteValue: Float get() = nativeMath.abs(this.toDouble()).toFloat()`
`Returns the sign of this value:`
 `-1.0 if the value is negative,`
`zero if the value is zero,`
 `1.0 if the value is positive`
`Special case:`
 `$\text{NaN}.\text{sign}$ is NaN`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline val Float.sign: Float get() = nativeMath.sign(this.toDouble()).toFloat()`
`Returns this value with the sign bit same as of the [sign] value.`
`If [sign] is NaN the sign of the result is undefined.`
`Since Kotlin("1.2")`
`InlineOnly`
`public actual inline fun Float.withSign(sign: Float): Float =`


```

actual fun Float.isInfinite(): Boolean = this == Float.POSITIVE_INFINITY || this ==
Float.NEGATIVE_INFINITY\n\n/**\n * Returns `true` if the argument is a finite floating-point value; returns
`false` otherwise (for `NaN` and infinity arguments).\n */\npublic actual fun Double.isFinite(): Boolean =
!isInfinite() && !isNaN()\n\n/**\n *
Returns `true` if the argument is a finite floating-point value; returns `false` otherwise (for `NaN` and infinity
arguments).\n */\npublic actual fun Float.isFinite(): Boolean = !isInfinite() && !isNaN()\n\n\n/**\n * Counts the
number of set bits in the binary representation of this [Int] number.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.countOneBits(): Int {\n // Hacker's Delight 5-1 algorithm\n var v = this\n v = (v and 0x55555555) +
(v.ushr(1) and 0x55555555)\n v = (v and 0x33333333) + (v.ushr(2) and 0x33333333)\n v = (v and 0x0F0F0F0F)
+ (v.ushr(4) and 0x0F0F0F0F)\n v = (v and 0x00FF00FF) + (v.ushr(8) and 0x00FF00FF)\n v = (v and
0x0000FFFF) + (v.ushr(16))\n return v\n}\n\n/**\n * Counts the number of consecutive most significant bits that
are zero in the binary representation of this [Int] number.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c
actual inline fun Int.countLeadingZeroBits(): Int = JsMath.clz32(this)\n\n/**\n * Counts the number of consecutive
least significant bits that are zero in the binary representation of this [Int] number.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.countTrailingZeroBits(): Int =\n // Hacker's Delight 5-4 algorithm for expressing countTrailingZeroBits with
countLeadingZeroBits\n Int.SIZE_BITS - (this or -this).inv().countLeadingZeroBits()\n\n/**\n * Returns a
number having a single bit set in the position of the most significant set bit of this [Int] number,\n * or zero, if this
number is zero.\n */\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.takeHighestOneBit(): Int =\n if (this == 0) 0 else 1.shl(Int.SIZE_BITS - 1 - countLeadingZeroBits())\n\n/**\n *
Returns a number having a single bit set in the position of the least significant set bit of this [Int] number,\n *
or zero, if this number is zero.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.takeLowestOneBit(): Int =\n // Hacker's Delight 2-1 algorithm for isolating rightmost 1-bit\n this and -
this\n\n/**\n * Rotates the binary representation of this [Int] number left by the specified [bitCount] number of
bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the
right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit
count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of [Int.SIZE_BITS] (32)
returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 32)`\n
*/\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.rotateLeft(bitCount: Int): Int =\n shl(bitCount) or ushr(Int.SIZE_BITS - bitCount)\n\n\n/**\n * Rotates the
binary representation of this [Int] number right by the specified [bitCount] number of bits.\n * The
least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n
*/\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n *
`number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [Int.SIZE_BITS] (32) returns
the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 32)`\n
*/\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.rotateRight(bitCount: Int): Int =\n shl(Int.SIZE_BITS - bitCount) or ushr(bitCount)\n\n\n/**\n * Counts the
number of set bits in the binary representation of this [Long] number.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.countOneBits(): Int =\n high.countOneBits() + low.countOneBits()\n\n\n/**\n * Counts the number of consecutive
most significant bits that are zero in the binary representation of this [Long]
number.\n */\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.countLeadingZeroBits(): Int =\n when (val high = this.high) {\n 0 -> Int.SIZE_BITS +
low.countLeadingZeroBits()\n else -> high.countLeadingZeroBits()\n }\n\n\n/**\n * Counts the number of

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consecutive least significant bits that are zero in the binary representation of this [Long] number.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.countTrailingZeroBits(): Int =\n    when (val low = this.low) {\n        0 -> Int.SIZE_BITS +
high.countTrailingZeroBits()\n        else -> low.countTrailingZeroBits()\n    }\n\n/**\n * Returns a number having a
single bit set in the position of the most significant set bit of this [Long] number,\n * or zero, if this number is
zero.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
actual fun Long.takeHighestOneBit(): Long =\n    when (val high = this.high) {\n        0 ->
Long(low.takeHighestOneBit(), 0)\n        else -> Long(0, high.takeHighestOneBit())\n    }\n\n/**\n * Returns a
number having a single bit set in the position of the least significant set bit of this [Long] number,\n * or zero, if this
number is zero.\n */\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.takeLowestOneBit(): Long =\n    when (val low = this.low) {\n        0 -> Long(0, high.takeLowestOneBit())\n
        else -> Long(low.takeLowestOneBit(), 0)\n    }\n\n/**\n * Rotates the binary representation of this [Long]
number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side
reenter the number as the least significant bits on the right side.\n * Rotating the number left by a negative bit
count is the same as
rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by
a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateLeft(n) ==
number.rotateLeft(n % 64)`\n
*/\n*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.rotateLeft(bitCount: Int): Long {\n    if ((bitCount and 31) != 0) {\n        val low = this.low\n        val high =
this.high\n        val newLow = low.shl(bitCount) or high.ushr(-bitCount)\n        val newHigh = high.shl(bitCount) or
low.ushr(-bitCount)\n        return if ((bitCount and 32) == 0) Long(newLow, newHigh) else Long(newHigh,
newLow)\n    } else {\n        return if ((bitCount and 32) == 0) this else Long(high, low)\n    }\n}\n\n/**\n *
Rotates the binary representation of this [Long] number right by the specified [bitCount] number of bits.\n * The
least significant bits pushed out from the right side reenter the number as the
most significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as
rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a
multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateRight(n) ==
number.rotateRight(n % 64)`\n
*/\n*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun Long.rotateRight(bitCount: Int): Long = rotateLeft(-bitCount)\n", "/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\nimport
kotlin.internal.LowPriorityInOverloadResolution\n\n/**\n * Exposes the JavaScript [Promise
object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/Promise) to Kotlin.\n
*/\n*\n@Suppress("NOT_DOCUMENTED")\npublic open external class Promise<out T>(executor: (resolve: (T) ->
Unit, reject: (Throwable) -> Unit) -> Unit) {\n    @LowPriorityInOverloadResolution\n    public open fun <S>
then(onFulfilled: ((T) -> S)?): Promise<S>\n\n    @LowPriorityInOverloadResolution\n    public open fun <S>
then(onFulfilled: ((T) -> S)?, onRejected: ((Throwable) -> S)?): Promise<S>\n\n    public open fun <S>
catch(onRejected: (Throwable) -> S): Promise<S>\n\n    public open fun finally(onFinally: () -> Unit):
Promise<T>\n\n    companion object {\n        public fun <S> all(promise: Array<out Promise<S>>):
Promise<Array<out S>>\n\n        public fun <S> race(promise: Array<out Promise<S>>): Promise<S>\n\n        public
fun reject(e: Throwable): Promise<Nothing>\n\n        public fun <S> resolve(e: S): Promise<S>\n\n        public
fun <S> resolve(e: Promise<S>): Promise<S>\n    }\n}\n\n// It's workaround for KT-19672 since we can fix it
properly until KT-11265 isn't fixed.\ninline
fun <T, S> Promise<Promise<T>>.then(\n    noinline onFulfilled: ((T) -> S)?\n): Promise<S> {\n    return
this.unsafeCast<Promise<T>>().then(onFulfilled)\n}\n\ninline fun <T, S> Promise<Promise<T>>.then(\n    noinline
onFulfilled: ((T) -> S)?,\n    noinline onRejected: ((Throwable) -> S)?\n): Promise<S> {\n    return

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this.unsafeCast<Promise<T>>().then(onFulfilled, onRejected)\n}\n", /*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.random\n\nimport
kotlin.math.pow\n\ninternal actual fun defaultPlatformRandom(): Random =\n    Random(js(Math.random() *
Math.pow(2, 32)) | 0).unsafeCast<Int>()\n\nprivate val INV_2_26: Double = 2.0.pow(-26)\nprivate val
INV_2_53: Double = 2.0.pow(-53)\n\ninternal actual fun doubleFromParts(hi26: Int, low27: Int): Double =\n    hi26 *
INV_2_26 + low27 * INV_2_53", /*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.reflect\n\nimport findAssociatedObject\n\n/**\n * The experimental marker for associated objects API.\n */\n
* Any usage of a declaration annotated with `@ExperimentalAssociatedObjects` must be accepted either by\n *
annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalAssociatedObjects::class)`,\n * or by
using the compiler argument `-opt-in=kotlin.reflect.ExperimentalAssociatedObjects`.\n */\n\n@RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n@Retention(value = AnnotationRetention.BINARY)\n\npublic annotation class
ExperimentalAssociatedObjects\n\n/**\n * Makes the annotated annotation class an associated object key.\n */\n
* An associated object key annotation should have single [KClass] parameter.\n * When applied to a class with
reference
to an object declaration as an argument, it binds\n * the object to the class, making this binding discoverable at
runtime using [findAssociatedObject].\n
*/\n\n@ExperimentalAssociatedObjects\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.A
NNOTATION_CLASS)\n\npublic annotation class AssociatedObjectKey\n\n/**\n * If [T] is an
@[AssociatedObjectKey]-annotated annotation class and [this] class is annotated with @[T](`S::class`),\n * returns
object `S`.\n * Otherwise returns `null`.\n */\n\n@ExperimentalAssociatedObjects\n\npublic inline fun <reified T :
Annotation> KClass<*>.findAssociatedObject(): Any? =\n    this.findAssociatedObject(T::class)", /*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\nimport
getKClass\n\nimport kotlin.reflect.KClass\n\nimport kotlin.reflect.js.internal.KClassImpl\n\n/**\n
* Represents the constructor of a class. Instances of `JsClass` can be passed to JavaScript APIs that expect a
constructor reference.\n */\n\nexternal interface JsClass<T : Any> {\n    /**\n     * Returns the unqualified name of the
class represented by this instance.\n     */\n    val name: String\n}\n\n/**\n * Obtains a constructor reference for the
given `KClass`.\n */\n\nval <T : Any> KClass<T>.js: JsClass<T>\n    get() = (this as KClassImpl<T>).jClass\n\n/**\n
* Obtains a `KClass` instance for the given constructor reference.\n */\n\nval <T : Any> JsClass<T>.kotlin:
KClass<T>\n    get() = getKClass(this)\n", /*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal abstract
class KClassImpl<T : Any>(\n    internal open val jClass: JsClass<T>\n) : KClass<T>
{\n\n    override val qualifiedName: String?\n        get() = TODO()\n\n    override fun equals(other: Any?): Boolean
{\n        return other is KClassImpl<*> && jClass == other.jClass\n    }\n\n    // TODO: use FQN\n    override fun
hashCode(): Int = simpleName?.hashCode() ?: 0\n\n    override fun toString(): String {\n        // TODO: use FQN\n
return "\"class $simpleName\"\n    }\n}\n\ninternal class SimpleKClassImpl<T : Any>(jClass: JsClass<T>) :
KClassImpl<T>(jClass) {\n    override val simpleName: String? =
jClass.asDynamic().$metadata$.simpleName.unsafeCast<String?>()\n\n    override fun isInstance(value: Any?):
Boolean {\n        return jsIsType(value, jClass)\n    }\n}\n\ninternal class PrimitiveKClassImpl<T : Any>(\n
jClass: JsClass<T>,\n    private val givenSimpleName: String,\n    private val isInstanceFunction: (Any?) ->
Boolean\n) : KClassImpl<T>(jClass) {\n    override fun equals(other: Any?): Boolean {\n        if (other !is
PrimitiveKClassImpl<*>) return
false\n        return super.equals(other) && givenSimpleName == other.givenSimpleName\n    }\n\n    override val
simpleName: String? get() = givenSimpleName\n\n    override fun isInstance(value: Any?): Boolean {\n        return

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isInstanceFunction(value)\n } \n\ninternal object NothingKClassImpl : KClassImpl<Nothing>(js("Object\
"))\n { \n override val simpleName: String = "Nothing"\n\n override fun isInstance(value: Any?): Boolean = false\n\n
override val jClass: JsClass<Nothing>\n get() = throw UnsupportedOperationException("There's no native JS
class for Nothing type")\n\n override fun equals(other: Any?): Boolean = other === this\n\n override fun
hashCode(): Int = 0\n}\n\ninternal class ErrorKClass : KClass<Nothing> {\n override val simpleName: String?
get() = error("Unknown simpleName for ErrorKClass")\n override val qualifiedName: String? get() =
error("Unknown qualifiedName for ErrorKClass")\n\n override fun isInstance(value: Any?): Boolean
= error("Can's check isInstance on ErrorKClass")\n\n override fun equals(other: Any?): Boolean = other ===
this\n\n override fun hashCode(): Int = 0\n}"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.reflect\n\ninternal actual inline val
KClass<*>.qualifiedOrSimpleName: String?\n get() = simpleName"/*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get declarations directly under
the module\n\n// TODO: Remove once JsReflectionAPICallChecker supports more reflection
types\n@file:Suppress("Unsupported")\n\nimport kotlin.reflect.*\nimport
kotlin.reflect.js.internal.*\n\n@JsName("createKType")\n\ninternal
fun createKType(\n classifier: KClassifier,\n arguments: Array<KTypeProjection>,\n isMarkedNullable:
Boolean)\n =\n KTypeImpl(classifier, arguments.asList(),
isMarkedNullable)\n\n@JsName("createDynamicKType")\n\ninternal fun createDynamicKType(): KType =
DynamicKType\n\n@JsName("markKTypeNullable")\n\ninternal fun markKTypeNullable(kType: KType) =
KTypeImpl(kType.classifier!!, kType.arguments, true)\n\n@JsName("createKTypeParameter")\n\ninternal fun
createKTypeParameter(\n name: String,\n upperBounds: Array<KType>,\n variance: String)\n:
KTypeParameter {\n val kVariance = when (variance) {\n "in" -> KVariance.IN\n "out" ->
KVariance.OUT\n else -> KVariance.INVARIANT\n }\n\n return KTypeParameterImpl(name,
upperBounds.asList(), kVariance, false)\n}\n\n@JsName("getStarKTypeProjection")\n\ninternal fun
getStarKTypeProjection(): KTypeProjection =\n
KTypeProjection.STAR\n\n@JsName("createCovariantKTypeProjection")\n\ninternal fun
createCovariantKTypeProjection(type: KType): KTypeProjection =\n
KTypeProjection.covariant(type)\n\n@JsName("createInvariantKTypeProjection")\n\ninternal fun
createInvariantKTypeProjection(type: KType): KTypeProjection =\n
KTypeProjection.invariant(type)\n\n@JsName("createContravariantKTypeProjection")\n\ninternal fun
createContravariantKTypeProjection(type: KType): KTypeProjection =\n
KTypeProjection.contravariant(type)"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal class
KTypeImpl(\n override val classifier: KClassifier,\n override val arguments: List<KTypeProjection>,\n
override val isMarkedNullable: Boolean)\n : KType {\n override fun equals(other: Any?): Boolean =\n other
is KTypeImpl &&\n classifier
== other.classifier && arguments == other.arguments && isMarkedNullable == other.isMarkedNullable\n\n
override fun hashCode(): Int =\n (classifier.hashCode() * 31 + arguments.hashCode()) * 31 +
isMarkedNullable.hashCode()\n\n override fun toString(): String {\n val kClass = (classifier as? KClass<*>)\n
val classifierName = when {\n kClass == null -> classifier.toString()\n kClass.simpleName != null
-> kClass.simpleName\n else -> "(non-denotable type)"\n }\n\n val args =\n if
(arguments.isEmpty()) ""\n else arguments.joinToString(", ", "<", ">")\n\n val nullable = if
(isMarkedNullable) "?" else ""\n\n return classifierName + args + nullable\n }\n}\n\ninternal object
DynamicKType : KType {\n override val classifier: KClassifier? = null\n override val arguments:
List<KTypeProjection> = emptyList()\n override val isMarkedNullable: Boolean = false\n

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    override fun toString(): String = "\dynamic"\n}\n", "/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal
data class KTypeParameterImpl(\n    override val name: String,\n    override val upperBounds: List<KType>,\n    override val variance: KVariance,\n    override val isReified: Boolean\n) : KTypeParameter {\n    override fun
toString(): String = name\n}", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport
kotlin.js.JsClass\n\n@JsName("PrimitiveClasses")\n\ninternal object PrimitiveClasses {\n
@JsName("anyClass")\n    val anyClass = PrimitiveKClassImpl(js("Object").unsafeCast<JsClass<Any>>(),
    "Any", { it is Any })\n\n    @JsName("numberClass")\n    val numberClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Number>>(), "Number", { it is Number })\n\n
@JsName("nothingClass")\n    val nothingClass = NothingKClassImpl\n\n    @JsName("booleanClass")\n    val
booleanClass = PrimitiveKClassImpl(js("Boolean").unsafeCast<JsClass<Boolean>>(), "Boolean", { it is Boolean
})\n\n    @JsName("byteClass")\n    val byteClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Byte>>(), "Byte", { it is Byte })\n\n
@JsName("shortClass")\n    val shortClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Short>>(),
    "Short", { it is Short })\n\n    @JsName("intClass")\n    val intClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Int>>(), "Int", { it is Int })\n\n
@JsName("floatClass")\n    val floatClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Float>>(),
    "Float", { it is Float })\n\n    @JsName("doubleClass")\n    val doubleClass =
PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Double>>(), "Double", { it is Double })\n\n
@JsName("arrayClass")\n    val arrayClass =
PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<Array<*>>>(), "Array", { it is Array<*> })\n\n
@JsName("stringClass")\n    val stringClass = PrimitiveKClassImpl(js("String").unsafeCast<JsClass<String>>(),
    "String", { it is String })\n\n    @JsName("throwableClass")\n    val throwableClass =
PrimitiveKClassImpl(js("Error").unsafeCast<JsClass<Throwable>>(), "Throwable", { it is Throwable })\n\n
@JsName("booleanArrayClass")\n    val booleanArrayClass =
PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<BooleanArray>>(), "BooleanArray", { it is BooleanArray
})\n\n    @JsName("charArrayClass")\n    val charArrayClass =
PrimitiveKClassImpl(js("Uint16Array").unsafeCast<JsClass<CharArray>>(), "CharArray", { it is CharArray
})\n\n
    @JsName("byteArrayClass")\n    val byteArrayClass =
PrimitiveKClassImpl(js("Int8Array").unsafeCast<JsClass<ByteArray>>(), "ByteArray", { it is ByteArray })\n\n
@JsName("shortArrayClass")\n    val shortArrayClass =
PrimitiveKClassImpl(js("Int16Array").unsafeCast<JsClass<ShortArray>>(), "ShortArray", { it is ShortArray
})\n\n    @JsName("intArrayClass")\n    val intArrayClass =
PrimitiveKClassImpl(js("Int32Array").unsafeCast<JsClass<IntArray>>(), "IntArray", { it is IntArray })\n\n
@JsName("longArrayClass")\n    val longArrayClass =
PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<LongArray>>(), "LongArray", { it is LongArray })\n\n
@JsName("floatArrayClass")\n    val floatArrayClass =
PrimitiveKClassImpl(js("Float32Array").unsafeCast<JsClass<FloatArray>>(), "FloatArray", { it is FloatArray
})\n\n    @JsName("doubleArrayClass")\n    val doubleArrayClass =
PrimitiveKClassImpl(js("Float64Array").unsafeCast<JsClass<DoubleArray>>(), "DoubleArray",
    { it is DoubleArray })\n\n    @JsName("functionClass")\n    fun functionClass(arity: Int): KClassImpl<Any> {\n
return functionClasses.get(arity) ?: run {\n        val result =
PrimitiveKClassImpl(js("Function").unsafeCast<JsClass<Any>>(), "Function$arity",\n        { jsTypeOf(it) === "function" && it.asDynamic().length === arity })\n        functionClasses.asDynamic()[arity]

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= result\n      result\n      }\n      }\n\nprivate val functionClasses =
arrayOfNulls<KClassImpl<Any>>(0),"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// a package is omitted to get declarations directly under the module\n\nimport
kotlin.reflect.*\nimport kotlin.reflect.js.internal.*\n\n@JsName("getKClass")\ninternal fun <T : Any>
getKClass(jClass: Any /* JsClass<T>
| Array<JsClass<T>> */): KClass<T> {\n  return if (js("Array").isArray(jClass)) {\n
getKClassM(jClass.unsafeCast<Array<JsClass<T>>>())\n  } else {\n
getKClass1(jClass.unsafeCast<JsClass<T>>())\n  }\n}\n\n@JsName("getKClassM")\ninternal fun <T : Any>
getKClassM(jClasses: Array<JsClass<T>>): KClass<T> = when (jClasses.size) {\n  1 ->
getKClass1(jClasses[0])\n  0 -> NothingKClassImpl.unsafeCast<KClass<T>>()\n  else ->
ErrorKClass().unsafeCast<KClass<T>>()\n}\n\n@JsName("getKClassFromExpression")\ninternal fun <T : Any>
getKClassFromExpression(e: T): KClass<T> =\n  when (jsTypeOf(e)) {\n    "string" ->
PrimitiveClasses.stringClass\n    "number" -> if (jsBitwiseOr(e, 0).asDynamic() === e)
PrimitiveClasses.intClass else PrimitiveClasses.doubleClass\n    "boolean" -> PrimitiveClasses.booleanClass\n
"function" -> PrimitiveClasses.functionClass(e.asDynamic().length)\n    else -> {\n      when {\n        e
is BooleanArray
-> PrimitiveClasses.booleanArrayClass\n        e is CharArray -> PrimitiveClasses.charArrayClass\n
e is ByteArray -> PrimitiveClasses.byteArrayClass\n        e is ShortArray -> PrimitiveClasses.shortArrayClass\n
e is IntArray -> PrimitiveClasses.intArrayClass\n        e is LongArray ->
PrimitiveClasses.longArrayClass\n        e is FloatArray -> PrimitiveClasses.floatArrayClass\n
e is DoubleArray -> PrimitiveClasses.doubleArrayClass\n        e is KClass<*> -> KClass::class\n
e is Array<*> -> PrimitiveClasses.arrayClass\n        else -> {\n          val constructor =
js("Object").getPrototypeOf(e).constructor\n          when {\n            constructor === js("Object") ->
PrimitiveClasses.anyClass\n            constructor === js("Error") -> PrimitiveClasses.throwableClass\n
            else -> {\n              val jsClass: JsClass<T> = constructor\n              getKClass1(jsClass)\n            }\n          }\n        }\n      }\n    }\n  }\n}\n\n@JsName("getKClass1")\ninternal fun <T :
Any> getKClass1(jClass: JsClass<T>): KClass<T> {\n  if (jClass === js("String")) return
PrimitiveClasses.stringClass.unsafeCast<KClass<T>>()\n  val metadata = jClass.asDynamic().`$metadata$\n\n
return if (metadata != null) {\n    if (metadata.`$kClass$` == null) {\n      val kClass =
SimpleKClassImpl(jClass)\n      metadata.`$kClass$` = kClass\n      kClass\n    } else {\n
metadata.`$kClass$`\n    }\n  } else {\n    SimpleKClassImpl(jClass)\n  }\n}\n"/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.js\n\n/**\n * Exposes the JavaScript [RegExp
object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/RegExp) to Kotlin.\n
*/\n\n@Suppress("NOT_DOCUMENTED")\npublic external class RegExp(pattern: String, flags: String? =
definedExternally) {\n\n  public fun test(str: String): Boolean\n\n  public fun exec(str: String): RegExpMatch?\n\n
  public override fun toString(): String\n\n  /**\n   * The lastIndex is a read/write integer property of regular
expressions that specifies the index at which to start the next match.\n   */\n  public var lastIndex: Int\n\n  public
val global: Boolean\n  public val ignoreCase: Boolean\n  public val multiline: Boolean\n}\n\n/**\n * Resets the
regular expression so that subsequent [RegExp.test] and [RegExp.exec] calls will match starting with the beginning
of the input string.\n */\n\npublic fun RegExp.reset() {\n  lastIndex = 0\n}\n\n// TODO: Inherit from array or
introduce asArray() extension\n\n/**\n * Represents the return value of [RegExp.exec].\n */\n\n@Suppress("NOT_DOCUMENTED")\npublic external
interface RegExpMatch {\n  public val index: Int\n  public val input: String\n  public val length: Int\n}\n\n/**\n * Returns the entire text matched by [RegExp.exec] if the [index] parameter is 0, or the text matched by the

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capturing parenthesis\n * at the given index.\n *\npublic inline operator fun RegExpMatch.get(index: Int): String? =
asDynamic()[index]\n\n/**\n * Converts the result of [RegExp.exec] to an array where the first element contains the
entire matched text and each subsequent\n * element is the text matched by each capturing parenthesis.\n *\npublic
inline fun RegExpMatch.asArray(): Array<out String?> = unsafeCast<Array<out String?>>()\n","/*\n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.sequences\n\ninternal actual class ConstrainedOnceSequence<T> actual constructor(sequence:
Sequence<T>) : Sequence<T> {\n    private var sequenceRef: Sequence<T>? = sequence\n\n    actual override fun
iterator(): Iterator<T> {\n        val sequence = sequenceRef ?: throw IllegalStateException("This sequence can be
consumed only once.")\n        sequenceRef = null\n        return sequence.iterator()\n    }\n}\n","/*\n * Copyright
2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.text\n\n@SinceKotlin("1.5")\npublic actual enum class CharCategory(internal val value: Int, public actual
val code: String) {\n    /**\n     * General category \"Cn\" in the Unicode specification.\n     *\n     UNASSIGNED(0,
\"Cn\"),\n\n    /**\n     * General category \"Lu\" in the Unicode specification.\n     *\n     UPPERCASE_LETTER(1,
\"Lu\"),\n\n    /**\n     * General category \"Ll\" in the Unicode specification.\n     *\n     LOWERCASE_LETTER(2,
\"Ll\"),\n\n    /**\n     * General category \"Lt\" in the Unicode specification.\n     *\n     TITLECASE_LETTER(3,
\"Lt\"),\n\n    /**\n     * General category \"Lm\" in the Unicode specification.\n     *\n     MODIFIER_LETTER(4,
\"Lm\"),\n\n    /**\n     * General category \"Lo\" in the Unicode specification.\n     *\n     OTHER_LETTER(5,
\"Lo\"),\n\n    /**\n     * General category \"Mn\" in the Unicode specification.\n     *\n     NON_SPACING_MARK(6,
\"Mn\"),\n\n    /**\n     * General category \"Me\" in the Unicode specification.\n     *\n     ENCLOSING_MARK(7,
\"Me\"),\n\n    /**\n     * General category \"Mc\" in the Unicode specification.\n     *\n     COMBINING_SPACING_MARK(8,
\"Mc\"),\n\n    /**\n     * General category \"Nd\" in the Unicode
specification.\n     *\n     DECIMAL_DIGIT_NUMBER(9, \"Nd\"),\n\n    /**\n     * General category \"NI\" in the
Unicode specification.\n     *\n     LETTER_NUMBER(10, \"NI\"),\n\n    /**\n     * General category \"No\" in the Unicode
specification.\n     *\n     OTHER_NUMBER(11, \"No\"),\n\n    /**\n     * General category \"Zs\" in the Unicode
specification.\n     *\n     SPACE_SEPARATOR(12, \"Zs\"),\n\n    /**\n     * General category \"Zl\" in the Unicode
specification.\n     *\n     LINE_SEPARATOR(13, \"Zl\"),\n\n    /**\n     * General category \"Zp\" in the Unicode
specification.\n     *\n     PARAGRAPH_SEPARATOR(14, \"Zp\"),\n\n    /**\n     * General category \"Cc\" in the Unicode
specification.\n     *\n     CONTROL(15, \"Cc\"),\n\n    /**\n     * General category \"Cf\" in the Unicode
specification.\n     *\n     FORMAT(16, \"Cf\"),\n\n    /**\n     * General category \"Co\" in the Unicode
specification.\n     *\n     PRIVATE_USE(18, \"Co\"),\n\n    /**\n     * General category \"Cs\" in the Unicode
specification.\n     *\n     SURROGATE(19, \"Cs\"),\n\n    /**\n     * General category \"Pd\" in
the Unicode specification.\n     *\n     DASH_PUNCTUATION(20, \"Pd\"),\n\n    /**\n     * General category \"Ps\"
in the Unicode specification.\n     *\n     START_PUNCTUATION(21, \"Ps\"),\n\n    /**\n     * General category
\"Pe\" in the Unicode specification.\n     *\n     END_PUNCTUATION(22, \"Pe\"),\n\n    /**\n     * General category
\"Pc\" in the Unicode specification.\n     *\n     CONNECTOR_PUNCTUATION(23, \"Pc\"),\n\n    /**\n     *
General category \"Po\" in the Unicode specification.\n     *\n     OTHER_PUNCTUATION(24, \"Po\"),\n\n    /**\n     *
General category \"Sm\" in the Unicode specification.\n     *\n     MATH_SYMBOL(25, \"Sm\"),\n\n    /**\n     *
General category \"Sc\" in the Unicode specification.\n     *\n     CURRENCY_SYMBOL(26, \"Sc\"),\n\n    /**\n     *
General category \"Sk\" in the Unicode specification.\n     *\n     MODIFIER_SYMBOL(27, \"Sk\"),\n\n    /**\n     *
General category \"So\" in the Unicode specification.\n     *\n     OTHER_SYMBOL(28, \"So\"),\n\n    /**\n     *
General category \"Pi\" in the Unicode specification.\n     *\n     INITIAL_QUOTE_PUNCTUATION(29, \"Pi\"),\n\n    /**\n     *
General category \"Pf\" in the Unicode
specification.\n     *\n     FINAL_QUOTE_PUNCTUATION(30, \"Pf\"),\n\n    /**\n     * Returns `true` if [char]
character belongs to this category.\n     *\n     public actual operator fun contains(char: Char): Boolean =

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char.getCategoryValue() == this.value\n\n companion object {\n    internal fun valueOf(category: Int):
CharCategory =\n        when (category) {\n            in 0..16 -> values()[category]\n            in 18..30 ->
values()[category - 1]\n            else -> throw IllegalArgumentException("Category #\$category is not defined.")\n
        }\n    }\n}\n", /*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
 */\n\npackage
kotlin.text\n\n/**\n * The exception thrown when a character encoding or decoding error occurs.\n
 */\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual open class
CharacterCodingException(message: String?) : Exception(message) {\n    actual constructor() : this(null)\n}\n", /*\n
 * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.text\n\n/**\n * A mutable sequence of characters.\n */\n * String builder can be used to efficiently perform
multiple string manipulation operations.\n */\n\npublic actual class StringBuilder actual constructor(content: String) :
Appendable, CharSequence {\n    /**\n     * Constructs an empty string builder with the specified initial [capacity].\n
 */\n     * In Kotlin/JS implementation of StringBuilder the initial capacity has no effect on the
further performance of operations.\n     */\n     actual constructor(capacity: Int) : this() {\n    }\n\n    /** Constructs a
string builder that contains the same characters as the specified [content] char sequence. */\n     actual
constructor(content: CharSequence) : this(content.toString()) {\n    }\n\n    /** Constructs an empty string builder. */\n
actual constructor() : this("")\n\n    private var string: String = if (content != undefined) content else ""\n\n    actual
override val length: Int\n        get() = string.asDynamic().length\n\n    actual override fun get(index: Int): Char
=\n        string.getOrNull(index) { throw IndexOutOfBoundsException("index: \$index, length: \$length") }\n\n    actual
override fun subSequence(startIndex: Int, endIndex: Int): CharSequence = string.substring(startIndex,
endIndex)\n\n    actual override fun append(value: Char): StringBuilder {\n        string += value\n        return this\n
}\n\n    actual override fun append(value: CharSequence?):
StringBuilder {\n        string += value.toString()\n        return this\n    }\n\n    actual override fun append(value:
CharSequence?, startIndex: Int, endIndex: Int): StringBuilder =\n        this.appendRange(value ?: "null", startIndex,
endIndex)\n\n    /**\n     * Reverses the contents of this string builder and returns this instance.\n     */\n     *
Surrogate pairs included in this string builder are treated as single characters.\n     * Therefore, the order of the high-
low surrogates is never reversed.\n     * Note that the reverse operation may produce new surrogate pairs that
were unpaired low-surrogates and high-surrogates before the operation.\n     * For example, reversing
`"\uDC00\uD800"` produces `"\uD800\uDC00"` which is a valid surrogate pair.\n     */\n     actual fun
reverse(): StringBuilder {\n        var reversed = ""\n        var index = string.length - 1\n        while (index >= 0) {\n
            val low = string[index--]\n            if (low.isLowSurrogate())\n                && index >= 0) {\n
                val high = string[index--]\n                if (high.isHighSurrogate()) {\n
                    reversed = reversed + high + low\n                } else {\n                    reversed = reversed + low + high\n                }\n
            } else {\n                reversed += low\n            }\n        }\n        string = reversed\n        return this\n
}\n\n    /**\n     * Appends the string representation of the specified object [value] to this string builder and returns this
instance.\n     */\n     * The overall effect is exactly as if the [value] were converted to a string by the
`value.toString()` method,\n     * and then that string was appended to this string builder.\n     */\n     actual fun
append(value: Any?): StringBuilder {\n        string += value.toString()\n        return this\n    }\n\n    /**\n     *
Appends the string representation of the specified boolean [value] to this string builder and returns this instance.\n
     */\n     * The overall effect is exactly as if the [value] were converted to a string by the `value.toString()`
method,\n     * and then that string was appended to this string builder.\n     */\n     @SinceKotlin("1.3")\n     actual
fun append(value: Boolean): StringBuilder {\n        string += value\n        return this\n    }\n\n    /**\n     * Appends
characters in the specified character array [value] to this string builder and returns this instance.\n     */\n     *
Characters are appended in order, starting at the index 0.\n     */\n     @SinceKotlin("1.4")\n     @WasExperimental(ExperimentalStdlibApi::class)\n     actual fun append(value: CharArray): StringBuilder {\n
        string += value.concatToString()\n        return this\n    }\n\n    @Deprecated("Provided for binary compatibility.",

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level = DeprecationLevel.HIDDEN)\n fun append(value: String): StringBuilder = append(value)\n\n /**\n *
Appends the specified string [value] to this string builder and returns
this instance.\n * If [value] is `null`, then the four characters `null` are appended.\n */
@SinceKotlin("1.3")\n actual fun append(value: String?): StringBuilder {\n this.string += value ?: "null"\n
return this\n }\n\n /**\n * Returns the current capacity of this string builder.\n * The capacity is the
maximum length this string builder can have before an allocation occurs.\n * In Kotlin/JS implementation
of StringBuilder the value returned from this method may not indicate the actual size of the backing storage.\n
*/\n @SinceKotlin("1.3")\n// @ExperimentalStdlibApi\n @Deprecated("Obtaining StringBuilder capacity is
not supported in JS and common code.", level = DeprecationLevel.ERROR)\n actual fun capacity(): Int =
length\n\n /**\n * Ensures that the capacity of this string builder is at least equal to the specified
[minimumCapacity].\n * If the current capacity
is less than the [minimumCapacity], a new backing storage is allocated with greater capacity.\n * Otherwise, this
method takes no action and simply returns.\n * In Kotlin/JS implementation of StringBuilder the size of the
backing storage is not extended to comply the given [minimumCapacity],\n * thus calling this method has no
effect on the further performance of operations.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun ensureCapacity(minimumCapacity: Int) {\n
}\n\n /**\n * Returns the index within this string builder of the first occurrence of the specified [string].\n *
Returns -1 if the specified [string] does not occur in this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun indexOf(string: String): Int =
this.string.asDynamic().indexOf(string)\n\n /**\n * Returns the index within this string builder of
the first occurrence of the specified [string],\n * starting at the specified [startIndex].\n * Returns -1 if
the specified [string] does not occur in this string builder starting at the specified [startIndex].\n */\n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun indexOf(string: String,
startIndex: Int): Int = this.string.asDynamic().indexOf(string, startIndex)\n\n /**\n * Returns the index
within this string builder of the last occurrence of the specified [string].\n * The last occurrence of empty string `""` is
considered to be at the index equal to `this.length`.\n * Returns -1 if the specified [string] does not occur
in this string builder.\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
actual fun lastIndexOf(string: String): Int = this.string.asDynamic().lastIndexOf(string)\n\n /**\n * Returns the
index within this string builder of the
last occurrence of the specified [string],\n * starting from the specified [startIndex] toward the beginning.\n *
Returns -1 if the specified [string] does not occur in this string builder starting at the specified [startIndex].\n
*/\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun
lastIndexOf(string: String, startIndex: Int): Int {\n if (string.isEmpty() && startIndex < 0) return -1\n return
this.string.asDynamic().lastIndexOf(string, startIndex)\n }\n\n /**\n * Inserts the string representation of the
specified boolean [value] into this string builder at the specified [index] and returns this instance.\n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was inserted into this string builder at the specified [index].\n * @throws
IndexOutOfBoundsException if [index] is less than zero
or greater than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value: Boolean): StringBuilder
{\n AbstractList.checkPositionIndex(index, length)\n string = string.substring(0, index) + value +
string.substring(index)\n return this\n }\n\n /**\n * Inserts the specified character [value] into this string
builder at the specified [index] and returns this instance.\n * @throws IndexOutOfBoundsException if
[index] is less than zero or greater than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value: Char): StringBuilder {\n
AbstractList.checkPositionIndex(index, length)\n string = string.substring(0, index) + value +
string.substring(index)\n return this\n }\n\n /**\n * Inserts characters in

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the specified character array [value] into this string builder at the specified [index] and returns this instance.\n *\n
 * The inserted characters go in same order as in the [value] character array, starting at [index].\n *\n *
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n
*/\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int,
value: CharArray): String Builder {\n     AbstractList.checkPositionIndex(index, length)\n\n     string =
string.substring(0, index) + value.concatToString() + string.substring(index)\n     return this\n }\n\n /**\n *
Inserts characters in the specified character sequence [value] into this string builder at the specified [index] and
returns this instance.\n *\n * The inserted characters go in the same order as in the [value] character sequence,
starting at [index].\n *\n * @param
index the position in this string builder to insert at.\n * @param value the character sequence from which
characters are inserted. If [value] is `null`, then the four characters `\\null` are inserted.\n *\n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n */\n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value:
CharSequence?): String Builder {\n     AbstractList.checkPositionIndex(index, length)\n\n     string =
string.substring(0, index) + value.toString() + string.substring(index)\n     return this\n }\n\n /**\n * Inserts
the string representation of the specified object [value] into this string builder at the specified [index] and returns
this instance.\n *\n * The overall effect is exactly as if the [value] were converted to a string by the
`value.toString()` method,\n * and then that string was inserted
into this string builder at the specified [index].\n *\n * @throws IndexOutOfBoundsException if [index] is less
than zero or greater than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value: Any?): String Builder {\n
    AbstractList.checkPositionIndex(index, length)\n\n     string = string.substring(0, index) + value.toString() +
string.substring(index)\n     return this\n }\n\n @Deprecated("Provided for binary compatibility.", level =
DeprecationLevel.HIDDEN)\n fun insert(index: Int, value: String): String Builder = insert(index, value)\n\n /**\n
* Inserts the string [value] into this string builder at the specified [index] and returns this instance.\n *\n * If
[value] is `null`, then the four characters `\\null` are inserted.\n *\n * @throws IndexOutOfBoundsException
if [index] is less than zero or greater than the length
of this string builder.\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
actual fun insert(index: Int, value: String?): String Builder {\n     AbstractList.checkPositionIndex(index,
length)\n\n     val toInsert = value ?: "\\null"\n     this.string = this.string.substring(0, index) + toInsert +
this.string.substring(index)\n     return this\n }\n\n /**\n * Sets the length of this string builder to the
specified [newLength].\n *\n * If the [newLength] is less than the current length, it is changed to the specified
[newLength].\n * Otherwise, null characters `\\u0000` are appended to this string builder until its length is less
than the [newLength].\n *\n * Note that in Kotlin/JS [set] operator function has non-constant execution time
complexity.\n * Therefore, increasing length of this string builder and then updating each character by index may
slow down your program.\n *\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less than zero.\n */\n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun setLength(newLength:
Int) {\n     if (newLength < 0) {\n         throw IllegalArgumentException("Negative new length:
$newLength.")\n     }\n\n     if (newLength <= length) {\n         string = string.substring(0, newLength)\n     }
else {\n         for (i in length until newLength) {\n             string += "\\u0000"\n         }\n     }\n\n /**\n
* Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the
[length] (exclusive).\n *\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater
than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun substring(startIndex: Int):
String {\n     AbstractList.checkPositionIndex(startIndex, length)\n\n     return string.substring(startIndex)\n
}\n\n /**\n * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and
up to the [endIndex] (exclusive).\n *\n * @throws IndexOutOfBoundsException or

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[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when
`startIndex > endIndex`.
 *^ @SinceKotlin("1.4") @WasExperimental(ExperimentalStdlibApi::class)
 actual fun substring(startIndex: Int, endIndex: Int): String {
     AbstractList.checkBoundsIndexes(startIndex,
     endIndex, length)
     return string.substring(startIndex, endIndex)
 }
 /**
  * Attempts to reduce
  storage used for this string builder.
  * If the backing storage of this string builder is larger than necessary
  to hold its current contents,
  * then it may be resized to become more
  space efficient.
  * Calling this method may, but is not required to, affect the value of the [capacity] property.
  * In Kotlin/JS implementation of StringBuilder the size of the backing storage is always equal to the length of
  the string builder.
  *^ @SinceKotlin("1.4") @WasExperimental(ExperimentalStdlibApi::class)
  actual fun trimToSize() {}
  override fun toString(): String = string
  /**
  * Clears the content of
  this string builder making it empty and returns this instance.
  * @sample
  samples.text.Strings.clearStringBuilder
  *^ @SinceKotlin("1.3") public fun clear(): StringBuilder {
  string = ""
  return this
  }
  /**
  * Sets the character at the specified [index] to the specified
  [value].
  * @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.
  *^ @SinceKotlin("1.4") @WasExperimental(ExperimentalStdlibApi::class)
  public operator fun set(index: Int, value: Char) {
  AbstractList.checkElementIndex(index, length)
  string = string.substring(0, index) + value + string.substring(index + 1)
  }
  /**
  * Replaces characters in
  the specified range of this string builder with characters in the specified string [value] and returns this instance.
  * @param startIndex the beginning (inclusive) of the range to replace.
  * @param endIndex the end
  (exclusive) of the range to replace.
  * @param value the string to replace with.
  * @throws
  IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length
  of this string builder, or `startIndex > endIndex`.
  *^ @SinceKotlin("1.4")
  @WasExperimental(ExperimentalStdlibApi::class) public fun setRange(startIndex: Int, endIndex: Int, value:
  String): StringBuilder {
  checkReplaceRange(startIndex, endIndex, length)
  this.string = this.string.substring(0, startIndex) + value + this.string.substring(endIndex)
  return this
  }
  private fun checkReplaceRange(startIndex: Int, endIndex: Int, length: Int) {
  if (startIndex < 0 ||
  startIndex > length) {
  throw IndexOutOfBoundsException("startIndex: $startIndex, length: $length")
  }
  if (startIndex > endIndex) {
  throw IllegalArgumentException("startIndex($startIndex) >
  endIndex($endIndex)")
  }
  }
  /**
  * Removes the character at the specified [index] from this string
  builder and returns this instance.
  * If the `Char` at the specified [index] is part of a supplementary code
  point, this method does not remove the entire supplementary character.
  * @param index the index of
  `Char` to remove.
  * @throws IndexOutOfBoundsException if [index] is out of bounds of this string
  builder.
  *^ @SinceKotlin("1.4")
  @WasExperimental(ExperimentalStdlibApi::class) public fun deleteAt(index: Int): StringBuilder {
  AbstractList.checkElementIndex(index, length)
  string = string.substring(0, index) + string.substring(index +
  1)
  return this
  }
  /**
  * Removes characters in the specified range from this string builder and
  returns this instance.
  * @param startIndex the beginning (inclusive) of the range to remove.
  *
  @param endIndex the end (exclusive) of the range to remove.
  * @throws IndexOutOfBoundsException
  or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex >
  endIndex`.
  *^ @SinceKotlin("1.4") @WasExperimental(ExperimentalStdlibApi::class) public fun
  deleteRange(startIndex: Int, endIndex: Int): StringBuilder {
  checkReplaceRange(startIndex, endIndex,
  length)
  string = string.substring(0, startIndex) + string.substring(endIndex)
  return this
  }
  /**
  * Copies characters from this string builder into the [destination] character
  array.
  * @param destination the array to copy to.
  * @param destinationOffset the position in the
  array to copy to, 0 by default.
  * @param startIndex the beginning (inclusive) of the range to copy, 0 by
  default.
  * @param endIndex the end (exclusive) of the range to copy, length of this string builder by default.
  * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is
  out of range of this string builder indices or when `startIndex > endIndex`.
  * @throws

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IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified
[destinationOffset],\n * or when that index is out of the [destination] array indices range.\n */\n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public
fun toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = this.length)
{\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n
AbstractList.checkBoundsIndexes(destinationOffset, destinationOffset + endIndex - startIndex, destination.size)\n\n
    var dstIndex = destinationOffset\n    for (index in startIndex until endIndex) {\n        destination[dstIndex++]
= string[index]\n    }\n}\n\n /**\n * Appends characters in a subarray of the specified character array
[value] to this string builder and returns this instance.\n * Characters are appended in order, starting at
specified [startIndex].\n * @param value the array from which characters are appended.\n * @param
startIndex the beginning (inclusive) of the subarray to append.\n * @param endIndex the end (exclusive) of the
subarray to append.\n * @throws IndexOutOfBoundsException or [IllegalArgumentException]
when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n
*/\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun
appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder {\n    string +=
value.concatToString(startIndex, endIndex)\n    return this\n }\n\n /**\n * Appends a subsequence of the
specified character sequence [value] to this string builder and returns this instance.\n * @param value the
character sequence from which a subsequence is appended.\n * @param startIndex the beginning (inclusive) of
the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of the [value] character sequence indices or when `startIndex > endIndex`.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n public fun appendRange(value: CharSequence, startIndex:
Int, endIndex: Int): StringBuilder {\n    val stringCsq = value.toString()\n
AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n\n    string +=
stringCsq.substring(startIndex, endIndex)\n    return this\n }\n\n /**\n * Inserts characters in a subarray of
the specified character array [value] into this string builder at the specified [index] and returns this instance.\n
* The inserted characters go in same order as in the [value] array, starting at [index].\n * @param index
the position in this string builder to insert at.\n * @param value the array from which characters are inserted.\n
* @param startIndex the beginning (inclusive) of the subarray to insert.\n * @param endIndex the end (exclusive)
of the subarray to insert.\n * @throws IndexOutOfBoundsException
or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when
`startIndex > endIndex`.\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the
length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n public fun insertRange(index: Int, value: CharArray,
startIndex: Int, endIndex: Int): StringBuilder {\n    AbstractList.checkPositionIndex(index, this.length)\n\n
string = string.substring(0, index) + value.concatToString(startIndex, endIndex) + string.substring(index)\n
return this\n }\n\n /**\n * Inserts characters in a subsequence of the specified character sequence [value] into
this string builder at the specified [index] and returns this instance.\n * The inserted characters go in the
same order as in the [value] character sequence, starting at [index].\n * @param index the position
in this string builder to insert at.\n * @param value the character sequence from which a subsequence is
inserted.\n * @param startIndex the beginning (inclusive) of the subsequence to insert.\n * @param endIndex
the end (exclusive) of the subsequence to insert.\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence
indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException if [index] is less than zero or
greater than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n public fun insertRange(index: Int, value: CharSequence,
startIndex: Int, endIndex: Int): StringBuilder {\n    AbstractList.checkPositionIndex(index, length)\n\n    val
stringCsq = value.toString()\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n

```


characters are appended.\n * @param startIndex the beginning (inclusive) of the subarray to append.\n * @param endIndex the end (exclusive) of the subarray to append.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.appendRange(value: CharArray, startIndex:
Int, endIndex: Int): StringBuilder =\n    this.appendRange(value, startIndex, endIndex)\n\n/**\n * Appends a
subsequence of the specified character sequence [value] to this string builder and returns this instance.\n * \n *
@param value the character sequence from which a subsequence is appended.\n * @param startIndex the beginning
(inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of the [value] character sequence indices or when `startIndex > endIndex`.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun
StringBuilder.appendRange(value: CharSequence, startIndex: Int, endIndex:
Int): StringBuilder =\n    this.appendRange(value, startIndex, endIndex)\n\n/**\n * Inserts characters in a subarray
of the specified character array [value] into this string builder at the specified [index] and returns this instance.\n
*\n * The inserted characters go in same order as in the [value] array, starting at [index].\n * \n * @param index the
position in this string builder to insert at.\n * @param value the array from which characters are inserted.\n *
@param startIndex the beginning (inclusive) of the subarray to insert.\n * @param endIndex the end (exclusive) of
the subarray to insert.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
[startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n *
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.insertRange(index: Int, value: CharArray,
startIndex: Int, endIndex: Int): StringBuilder =\n    this.insertRange(index, value, startIndex, endIndex)\n\n/**\n
* Inserts characters in a subsequence of the specified character sequence [value] into this string builder at the
specified [index] and returns this instance.\n * \n * The inserted characters go in the same order as in the [value]
character sequence, starting at [index].\n * \n * @param index the position in this string builder to insert at.\n *
@param value the character sequence from which a subsequence is inserted.\n * @param startIndex the beginning
(inclusive) of the subsequence to insert.\n * @param endIndex the end (exclusive) of the subsequence to insert.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of the [value] character sequence indices or when `startIndex >
endIndex`.\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this
string builder.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun
StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder =\n
this.insertRange(index, value, startIndex, endIndex)\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n *\npackage kotlin.text\n\n/**\n * Returns `true` if the content of
this string is equal to the word `true`, ignoring case, and `false` otherwise.\n * \n *\n@Deprecated("Use Kotlin
compiler 1.4 to avoid deprecation warning.")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@kotlin.internal.InlineOnly\npublic actual
inline fun String.toBoolean(): Boolean = this.toBoolean()\n\n/**\n * Returns `true` if this string is not `null` and
its content is equal to the word `true`, ignoring case, and `false` otherwise.\n * \n * There are also strict
versions of the

```

function available on non-nullable String, [toBooleanStrict] and [toBooleanStrictOrNull].\n

```

*\n@SinceKotlin("1.4")\npublic actual fun String?.toBoolean(): Boolean = this != null && this.lowercase() ==
"true"\n\n/**\n * Parses the string as a signed [Byte] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid representation of a number.\n */\npublic actual fun
String.toByte(): Byte = toByteOrNull() ?: numberFormatError(this)\n\n/**\n * Parses the string as a signed [Byte]
number and returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a
number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\npublic
actual fun String.toByte(radix: Int): Byte = toByteOrNull(radix) ?: numberFormatError(this)\n\n/**\n * Parses the
string as a [Short] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n */\npublic actual fun String.toShort(): Short = toShortOrNull() ?:
numberFormatError(this)\n\n/**\n * Parses the string as a [Short] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid representation of a number.\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n */\npublic actual fun
String.toShort(radix: Int): Short = toShortOrNull(radix) ?: numberFormatError(this)\n\n/**\n * Parses the string as
an [Int] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n */\npublic actual fun String.toInt(): Int = toIntOrNull() ?:
numberFormatError(this)\n\n/**\n * Parses the
string as an [Int] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to
number conversion.\n */\npublic actual fun String.toInt(radix: Int): Int = toIntOrNull(radix) ?:
numberFormatError(this)\n\n/**\n * Parses the string as a [Long] number and returns the result.\n * @throws
NumberFormatException if the string is not a valid representation of a number.\n */\npublic actual fun
String.toLong(): Long = toLongOrNull() ?: numberFormatError(this)\n\n/**\n * Parses the string as a [Long]
number and returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a
number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\npublic actual fun String.toLong(radix: Int): Long = toLongOrNull(radix) ?: numberFormatError(this)\n\n/**\n *
Parses the string
as a [Double] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n */\npublic actual fun String.toDouble(): Double =
+(this.asDynamic()).unsafeCast<Double>().also {\n    if (it.isNaN() && !this.isNaN() || it == 0.0 &&
this.isBlank())\n        numberFormatError(this)\n}\n\n/**\n * Parses the string as a [Float] number and returns the
result.\n * @throws NumberFormatException if the string is not a valid representation of a number.\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toFloat(): Float =
toDouble().unsafeCast<Float>()\n\n/**\n * Parses the string as a [Double] number and returns the result\n * or `null`
if the string is not a valid representation of a number.\n */\npublic actual fun String.toDoubleOrNull(): Double? =
+(this.asDynamic()).unsafeCast<Double>().takeIf {\n    !(it.isNaN() && !this.isNaN() || it == 0.0 &&
this.isBlank())\n}\n\n/**\n * Parses the string as a [Float] number
and returns the result\n * or `null` if the string is not a valid representation of a number.\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toFloatOrNull(): Float? =
toDoubleOrNull().unsafeCast<Float?>()\n\n/**\n * Returns a string representation of this [Byte] value in the
specified [radix].\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string
conversion.\n */\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Byte.toString(radix:
Int): String = this.toInt().toString(radix)\n\n/**\n * Returns a string representation of this [Short] value in the
specified [radix].\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string
conversion.\n */\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Short.toString(radix:
Int): String = this.toInt().toString(radix)\n\n/**\n * Returns a string representation of this [Int] value in the specified

```



```

[radix].\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string
conversion.\n *\n @SinceKotlin("1.2")\npublic actual fun Int.toString(radix: Int): String =
asDynamic().toString(checkRadix(radix))\n\nprivate fun String.isNaN(): Boolean = when (this.lowercase()) {\n
\n"nan", "+nan", "-nan" -> true\n else -> false\n}\n\n/**\n * Checks whether the given [radix] is valid radix for
string to number and number to string conversion.\n *\n @PublishedApi\ninternal actual fun checkRadix(radix: Int):
Int {\n if (radix !in 2..36) {\n throw IllegalArgumentException("\radix $radix was not in valid range 2..36")\n
}\n return radix\n}\n\ninternal actual fun digitOf(char: Char, radix: Int): Int = when {\n char >= '0' && char <=
'9' -> char - '0'\n char >= 'A' && char <= 'Z' -> char - 'A' + 10\n char >= 'a' && char <= 'z' -> char - 'a' + 10\n
char < '\u0080' -> -1\n char >= '\uFF21' && char <= '\uFF3A' -> char - '\uFF21'
+ 10 // full-width latin capital letter\n char >= '\uFF41' && char <= '\uFF5A' -> char - '\uFF41' + 10 // full-width
latin small letter\n else -> char.digitToIntImpl()\n}.let { if (it >= radix) -1 else it }\n", /*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n package kotlin.text\nimport
kotlin.js.RegExp\n\n/**\n * Provides enumeration values to use to set regular expression options.\n *\n public actual
enum class RegexOptions(val value: String) {\n /** Enables case-insensitive matching. *\n
IGNORE_CASE("i"),\n /** Enables multiline mode.\n *\n * In multiline mode the expressions `^` and `$`
match just after or just before,\n *\n * respectively, a line terminator or the end of the input sequence. *\n
MULTILINE("m")\n}\n\nprivate fun Iterable<RegexOption>.toFlags(prepend: String): String
= joinToString("\", prefix = prepend) { it.value }\n\n/**\n * Represents the results from a single capturing group
within a [MatchResult] of [Regex].\n *\n * @param value The value of captured group.\n *\n public actual data
class MatchGroup(actual val value: String)\n\n/**\n * Represents a compiled regular expression.\n *\n * Provides
functions to match strings in text with a pattern, replace the found occurrences and split text around matches.\n *\n *
For pattern syntax reference see [MDN RegExp](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp#Special_characters_meaning_in_regular_expressions)\n
*\n * and
[http://www.w3schools.com/jsref/jsref_obj_regexp.asp](https://www.w3schools.com/jsref/jsref_obj_regexp.asp).\n
*\n * Note that `RegExp` objects under the hood are constructed with [the `u`
flag](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp/unicode)\n *\n * that
enables Unicode-related features in regular
expressions. This also makes the pattern syntax more strict,\n *\n * for example, prohibiting unnecessary escape
sequences.\n *\n * @constructor Creates a regular expression from the specified [pattern] string and the specified set
of [options].\n *\n public actual class Regex actual constructor(pattern: String, options: Set<RegexOption>) {\n\n
/** Creates a regular expression from the specified [pattern] string and the specified single [option]. *\n public
actual constructor(pattern: String, option: RegexOption) : this(pattern, setOf(option))\n\n /** Creates a regular
expression from the specified [pattern] string and the default options. *\n public actual constructor(pattern:
String) : this(pattern, emptySet())\n\n /** The pattern string of this regular expression. *\n public actual val
pattern: String = pattern\n\n /** The set of options that were used to create this regular expression. *\n public
actual val options: Set<RegexOption> = options.toSet()\n
private val nativePattern: RegExp = RegExp(pattern, options.toFlags("gu"))\n private var nativeStickyPattern:
RegExp? = null\n private fun initStickyPattern(): RegExp =\n nativeStickyPattern ?: RegExp(pattern,
options.toFlags("yu")).also { nativeStickyPattern = it }\n\n private var nativeMatchesEntirePattern: RegExp? =
null\n private fun initMatchesEntirePattern(): RegExp =\n nativeMatchesEntirePattern ?: run {\n if
(pattern.startsWith('^') && pattern.endsWith('$'))\n nativePattern\n else\n return
RegExp("^${pattern.trimStart('^').trimEnd('$')}$", options.toFlags("gu"))\n }.also {\n
nativeMatchesEntirePattern = it }\n\n /** Indicates whether the regular expression matches the entire [input].
*\n public actual infix fun matches(input: CharSequence): Boolean {\n nativePattern.reset()\n val match
= nativePattern.exec(input.toString())\n return match != null && match.index

```

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== 0 && nativePattern.lastIndex == input.length\n } \n\n /** Indicates whether the regular expression can find at
least one match in the specified [input]. *\n public actual fun containsMatchIn(input: CharSequence): Boolean {\n
    nativePattern.reset()\n    return nativePattern.test(input.toString())\n } \n\n @SinceKotlin("1.5")\n
@ExperimentalStdlibApi\n public actual fun matchesAt(input: CharSequence, index: Int): Boolean {\n    if
(index < 0 || index > input.length) {\n        throw IndexOutOfBoundsException("index out of bounds: $index,
input length: ${input.length}")\n    }\n    val pattern = initStickyPattern()\n    pattern.lastIndex = index\n
return pattern.test(input.toString())\n } \n\n /**\n * Returns the first match of a regular expression in the
[input], beginning at the specified [startIndex].\n * \n * @param startIndex An index to start search with, by
default 0. Must be not less than zero and
not greater than `input.length()`\n * @return An instance of [MatchResult] if match was found or `null`
otherwise.\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater than the length of
the [input] char sequence.\n * @sample samples.text.Regexps.find\n */\n
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun find(input:
CharSequence, startIndex: Int = 0): MatchResult? {\n    if (startIndex < 0 || startIndex > input.length) {\n
throw IndexOutOfBoundsException("Start index out of bounds: $startIndex, input length: ${input.length}")\n
}\n    return nativePattern.findNext(input.toString(), startIndex, nativePattern)\n } \n\n /**\n * Returns a
sequence of all occurrences of a regular expression within the [input] string, beginning at the specified
[startIndex].\n * \n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater than the
length of the
[input] char sequence.\n * \n * @sample samples.text.Regexps.findAll\n */\n
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun findAll(input:
CharSequence, startIndex: Int = 0): Sequence<MatchResult> {\n    if (startIndex < 0 || startIndex > input.length)
{\n        throw IndexOutOfBoundsException("Start index out of bounds: $startIndex, input length:
${input.length}")\n    }\n    return generateSequence({ find(input, startIndex) }, { match -> match.next() })\n
}\n\n /**\n * Attempts to match the entire [input] CharSequence against the pattern.\n * \n * @return An
instance of [MatchResult] if the entire input matches or `null` otherwise.\n */\n public actual fun
matchEntire(input: CharSequence): MatchResult? =\n    initMatchesEntirePattern().findNext(input.toString(), 0,
nativePattern)\n\n @SinceKotlin("1.5")\n @ExperimentalStdlibApi\n public actual fun matchAt(input:
CharSequence, index: Int):
MatchResult? {\n    if (index < 0 || index > input.length) {\n        throw IndexOutOfBoundsException("index
out of bounds: $index, input length: ${input.length}")\n    }\n    return
initStickyPattern().findNext(input.toString(), index, nativePattern)\n } \n\n\n /**\n * Replaces all occurrences
of this regular expression in the specified [input] string with specified [replacement] expression.\n * \n * The
replacement string may contain references to the captured groups during a match. Occurrences of `index` \n * in
the replacement string will be substituted with the subsequences corresponding to the captured groups with the
specified index.\n * The first digit after '$' is always treated as part of group reference. Subsequent digits are
incorporated \n * into `index` only if they would form a valid group reference. Only the digits '0'..'9' are considered
as potential components \n * of the group reference. Note that indexes of captured
groups start from 1, and the group with index 0 is the whole match.\n * \n * Backslash character '\\' can be used
to include the succeeding character as a literal in the replacement string, e.g, '\\$` or '\\\\\\`. \n *
[Regex.escapeReplacement] can be used if [replacement] have to be treated as a literal string.\n * \n * Note that
referring named capturing groups by name is currently not supported in Kotlin/JS.\n * However, you can still
refer them by index.\n * \n * @param input the char sequence to find matches of this regular expression in\n
* @param replacement the expression to replace found matches with\n * @return the result of replacing each
occurrence of this regular expression in [input] with the result of evaluating the [replacement] expression\n *
@throws RuntimeException if [replacement] expression is malformed, or capturing group with specified `name` or
`index` does not exist\n */\n public actual fun replace(input: CharSequence,

```

```

replacement: String): String {
    if (!replacement.contains("\\\\") && !replacement.contains('$')) {
        return input.toString().nativeReplace(nativePattern, replacement)
    }
    substituteGroupRefs(it, replacement)
}

/**
 * Replaces all occurrences of this regular expression in the specified [input] string with the result of the given function [transform] that takes [MatchResult] and returns a string to be used as a replacement for that match.
 */
public actual fun replace(input: CharSequence, transform: (MatchResult) -> CharSequence): String {
    var match = find(input)
    if (match == null) return input.toString()
    var lastStart = 0
    val length = input.length
    val sb = StringBuilder(length)
    do {
        val foundMatch = match!!
        sb.append(input, lastStart, foundMatch.range.start)
        sb.append(transform(foundMatch))
        lastStart = foundMatch.range.endInclusive + 1
        match = foundMatch.next()
    } while (lastStart < length && match != null)
    if (lastStart < length) {
        sb.append(input, lastStart, length)
    }
    return sb.toString()
}

/**
 * Replaces the first occurrence of this regular expression in the specified [input] string with specified [replacement] expression.
 * The replacement string may contain references to the captured groups during a match. Occurrences of ` $index ` in the replacement string will be substituted with the subsequences corresponding to the captured groups with the specified index.
 * The first digit after '$' is always treated as part of group reference. Subsequent digits are incorporated into `index` only if they would form a valid group reference. Only the digits '0'..'9' are considered as potential components of the group reference. Note that indexes of captured groups start from 1, and the group with index 0 is the whole match.
 * Backslash character '\\' can be used to include the succeeding character as a literal in the replacement string, e.g, '\\$` or '\\\\`.
 * [Regex.escapeReplacement] can be used if [replacement] have to be treated as a literal string.
 * Note that referring named capturing groups by name is not supported currently in Kotlin/JS.
 * However, you can still refer them by index.
 * @param input the char sequence to find a match of this regular expression in
 * @param replacement the expression to replace the found match with
 * @return the result of replacing the first occurrence of this regular expression in [input] with the result of evaluating the [replacement] expression
 * @throws RuntimeException if [replacement] expression is malformed, or capturing group with specified `name` or `index` does not exist
 */
public actual fun replaceFirst(input: CharSequence, replacement: String): String {
    if (!replacement.contains("\\\\") && !replacement.contains('$')) {
        val nonGlobalOptions = options.toFlags("u")
        return input.toString().nativeReplace(RegExp(pattern, nonGlobalOptions), replacement)
    }
    val match = find(input) ?: return input.toString()
    return buildString {
        append(input.substring(0, match.range.first))
        append(substituteGroupRefs(match, replacement))
        append(input.substring(match.range.last + 1, input.length))
    }
}

/**
 * Splits the [input] CharSequence to a list of strings around matches of this regular expression.
 * @param limit Non-negative value specifying the maximum number of substrings the string can be split to.
 * Zero by default means no limit is set.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun split(input: CharSequence, limit: Int = 0): List<String> {
    requireNonNegativeLimit(limit)
    val matches = findAll(input).let { if (limit == 0) it else it.take(limit - 1) }
    val result = mutableListOf<String>()
    var lastStart = 0
    for (match in matches) {
        result.add(input.subSequence(lastStart, match.range.start).toString())
        lastStart = match.range.endInclusive + 1
    }
    result.add(input.subSequence(lastStart, input.length).toString())
    return result
}

/**
 * Splits the [input] CharSequence to a sequence of strings around matches of this regular expression.
 * @param limit Non-negative value specifying the maximum number of substrings the string can be split to.
 * Zero by default means no limit is set.
 */
@sample samples.text.Regexps.splitToSequence
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")

```



```

code.\", level = DeprecationLevel.ERROR)\n fun capacity(): Int\n\n /**\n * Ensures that the capacity of this
string builder is at least equal to the specified [minimumCapacity].\n *\n * If the current capacity is less than
the [minimumCapacity], a new backing storage is allocated with greater capacity.\n * Otherwise, this method
takes no action and simply returns.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun ensureCapacity(minimumCapacity: Int)\n\n /**\n * Returns the index within this string builder of the first occurrence of the specified [string].\n *\n * Returns -1 if the specified [string] does not occur in this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun indexOf(string: String): Int\n\n /**\n * Returns the
index within this string builder of the first occurrence of the specified [string],\n * starting at the specified
[startIndex].\n *\n * Returns -1 if the specified [string] does not occur in this string builder starting at the
specified [startIndex].\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
fun indexOf(string: String, startIndex: Int): Int\n\n /**\n * Returns the index within this string builder of the last
occurrence of the specified [string].\n *\n * The last occurrence of empty string ```` is considered to be at the index equal to `this.length`.\n *\n * Returns
-1 if the specified [string] does not occur in this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun lastIndexOf(string: String): Int\n\n /**\n * Returns
the index within this string builder of the last occurrence of the specified [string],\n * starting from the specified
[startIndex] toward the beginning.\n *\n * Returns -1 if the specified [string] does not occur in this string
builder starting at the specified [startIndex].\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun lastIndexOf(string: String, startIndex: Int): Int\n\n\n /**\n * Inserts the string representation of the specified boolean [value] into this string builder at the specified
[index] and returns this instance.\n *\n * The overall effect is exactly as
if the [value] were converted to a string by the `value.toString()` method,\n * and then that string was inserted
into this string builder at the specified [index].\n *\n * @throws IndexOutOfBoundsException if [index] is less
than zero or greater than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Boolean): StringBuilder\n\n\n /**\n * Inserts the specified character [value] into this string builder at the specified [index] and returns this
instance.\n *\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of
this string builder.\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: Char): StringBuilder\n\n\n /**\n * Inserts characters in the specified character array
[value] into this string builder at the specified [index] and returns this
instance.\n *\n * The inserted characters go in same order as in the [value] character array, starting at
[index].\n *\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of
this string builder.\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: CharArray): StringBuilder\n\n\n /**\n * Inserts characters in the specified character
sequence [value] into this string builder at the specified [index] and returns this instance.\n *\n * The inserted
characters go in the same order as in the [value] character sequence, starting at [index].\n *\n * @param index
the position in this string builder to insert at.\n * @param value the character sequence from which characters are
inserted. If [value] is `null`, then the four characters ``null`` are inserted.\n *\n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: CharSequence?):
StringBuilder\n\n\n /**\n * Inserts the string representation of the specified object [value] into this string builder
at the specified [index] and returns this instance.\n *\n * The overall effect is exactly as if the [value] were
converted to a string by the `value.toString()` method,\n * and then that string was inserted into this string builder
at the specified [index].\n *\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n */\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Any?): StringBuilder\n\n\n /**\n

```

```

    * Inserts the string [value] into this string builder at the specified [index] and returns this instance.\n    *\n    * If [value] is `null`, then the four characters `\\null\\` are inserted.\n    *\n    * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: String?): StringBuilder\n /**\n    * Sets the length of this string builder to the specified [newLength].\n    *\n    * If the [newLength] is less than the current length, it is changed to the specified [newLength].\n    * Otherwise, null characters `\\u0000` are appended to this string builder until its length is less than the [newLength].\n    *\n    * Note that in Kotlin/JS [set] operator function has non-constant execution time complexity.\n    * Therefore, increasing length of this string builder and then updating each character by index may slow down your program.\n    *\n    * @throws IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less than zero.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun setLength(newLength: Int)\n /**\n    * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the [length] (exclusive).\n    *\n    * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater than the length of this string builder.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun substring(startIndex: Int): String\n /**\n    * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the [endIndex] (exclusive).\n    *\n    * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun substring(startIndex: Int, endIndex: Int): String\n /**\n    * Attempts to reduce storage used for this string builder.\n    *\n    * If the backing storage of this string builder is larger than necessary to hold its current contents,\n    * then it may be resized to become more space efficient.\n    * Calling this method may, but is not required to, affect the value of the [capacity] property.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun trimToSize()\n /**\n    * Clears the content of this string builder making it empty and returns this instance.\n    *\n    * @sample samples.text.Strings.clearStringBuilder\n    */\n @SinceKotlin("1.3")\n public expect fun StringBuilder.clear(): StringBuilder\n /**\n    * Sets the character at the specified [index] to the specified [value].\n    *\n    * @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect operator fun StringBuilder.set(index: Int, value: Char)\n /**\n    * Replaces characters in the specified range of this string builder with characters in the specified string [value] and returns this instance.\n    *\n    * @param startIndex the beginning (inclusive) of the range to replace.\n    * @param endIndex the end (exclusive) of the range to replace.\n    * @param value the string to replace with.\n    *\n    * @throws IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length of this string builder, or `startIndex > endIndex`.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun StringBuilder.setRange(startIndex: Int, endIndex: Int, value: String): StringBuilder\n /**\n    * Removes the character at the specified [index] from this string builder and returns this instance.\n    *\n    * If the `Char` at the specified [index] is part of a supplementary code point, this method does not remove the entire supplementary character.\n    *\n    * @param index the index of `Char` to remove.\n    *\n    * @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun StringBuilder.deleteAt(index: Int): StringBuilder\n /**\n    * Removes characters in the specified range from this string builder and returns this instance.\n    *\n    * @param startIndex the beginning (inclusive) of the range to remove.\n    * @param endIndex the end (exclusive) of the range to remove.\n    *\n    * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun

```

`StringBuilder.deleteRange(startIndex: Int, endIndex: Int): StringBuilder`
Copies characters from this string builder into the [destination] character array.
@param destination the array to copy to.
@param destinationOffset the position in the array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the range to copy, 0 by default.
@param endIndex the end (exclusive) of the range to copy, length of this string builder by default.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.

`StringBuilder.toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = this.length)`
Appends characters in a subarray of the specified character array [value] to this string builder and returns this instance.
@param value the array from which characters are appended.
@param startIndex the beginning (inclusive) of the subarray to append.
@param endIndex the end (exclusive) of the subarray to append.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.

`StringBuilder.appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder`
Appends a subsequence of the specified character sequence [value] to this string builder and returns this instance.
@param value the character sequence from which a subsequence is appended.
@param startIndex the beginning (inclusive) of the subsequence to append.
@param endIndex the end (exclusive) of the subsequence to append.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.

`StringBuilder.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder`
Inserts characters in a subarray of the specified character array [value] into this string builder at the specified [index] and returns this instance.
The inserted characters go in same order as in the [value] array, starting at [index].
@param index the position in this string builder to insert at.
@param value the array from which characters are inserted.
@param startIndex the beginning (inclusive) of the subarray to insert.
@param endIndex the end (exclusive) of the subarray to insert.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.

`StringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder`
Inserts characters in a subsequence of the specified character sequence [value] into this string builder at the specified [index] and returns this instance.
The inserted characters go in the same order as in the [value] character sequence, starting at [index].
@param index the position in this string builder to insert at.
@param value the character sequence from which a subsequence is inserted.
@param startIndex the beginning (inclusive) of the subsequence to insert.
@param endIndex the end (exclusive) of the subsequence to insert.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.

`StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder`
@Suppress("EXTENSION_SHADOWED_BY_MEMBER")
@Deprecated("Use


```

append(value: Any?) instead", ReplaceWith("append(value = obj)"),
DeprecationLevel.WARNING)\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.append(obj: Any?):
StringBuilder = this.append(obj)\n\n/**\n * Builds new string by populating newly created [StringBuilder] using
provided [builderAction]\n
 * and then converting it to [String].\n *\n@kotlin.internal.InlineOnly\npublic inline fun buildString(builderAction:
StringBuilder.() -> Unit): String {\n    contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE)
}\n    return StringBuilder().apply(builderAction).toString()\n}\n\n/**\n * Builds new string by populating newly
created [StringBuilder] initialized with the given [capacity]\n * using provided [builderAction] and then converting
it to [String].\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun buildString(capacity: Int,
builderAction: StringBuilder.() -> Unit): String {\n    contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE) }\n    return
StringBuilder(capacity).apply(builderAction).toString()\n}\n\n/**\n * Appends all arguments to the given
StringBuilder.\n *\npublic fun StringBuilder.append(vararg value: String?): StringBuilder {\n    for (item in
value)\n        append(item)\n    return this\n}\n\n/**\n * Appends
all arguments to the given StringBuilder.\n *\npublic fun StringBuilder.append(vararg value: Any?): StringBuilder
{\n    for (item in value)\n        append(item)\n    return this\n}\n\n/**\n * Appends a line feed character (`\n`) to this
StringBuilder. *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
StringBuilder.appendLine(): StringBuilder = append("\n")\n\n/**\n * Appends [value] to this [StringBuilder], followed
by a line feed character (`\n`). *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
StringBuilder.appendLine(value: CharSequence?): StringBuilder = append(value).appendLine()\n\n/**\n * Appends
[value] to this [StringBuilder], followed by a line feed character (`\n`).
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.appendLine(value:
String?): StringBuilder = append(value).appendLine()\n\n/**\n * Appends [value] to this [StringBuilder], followed by a
line feed character (`\n`). *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun StringBuilder.appendLine(value: Any?): StringBuilder = append(value).appendLine()\n\n/**\n * Appends
[value] to this [StringBuilder], followed by a line feed character (`\n`).
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.appendLine(value:
CharArray): StringBuilder = append(value).appendLine()\n\n/**\n * Appends [value] to this [StringBuilder], followed
by a line feed character (`\n`). *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
StringBuilder.appendLine(value: Char): StringBuilder = append(value).appendLine()\n\n/**\n * Appends [value] to this
[StringBuilder], followed by a line feed character (`\n`).
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.appendLine(value:
Boolean): StringBuilder = append(value).appendLine()\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source
code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.text\nimport kotlin.js.RegExp\n\n@kotlin.internal.InlineOnly\ninternal actual inline fun
String.nativeIndexOf(ch: Char, fromIndex: Int): Int = nativeIndexOf(ch.toString(),
fromIndex)\n\n@kotlin.internal.InlineOnly\ninternal actual inline fun String.nativeLastIndexOf(ch: Char,
fromIndex: Int): Int = nativeLastIndexOf(ch.toString(), fromIndex)\n\n/**\n * Returns `true` if this string starts with
the specified prefix.\n *\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun String.startsWith(prefix: String, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase)\n        return
nativeStartsWith(prefix, 0)\n    else\n        return regionMatches(0, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n *
Returns `true` if a substring of this string starting at the specified offset [startIndex] starts with the specified prefix.\n
*\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun String.startsWith(prefix: String, startIndex: Int, ignoreCase: Boolean = false): Boolean {\n    if
(!ignoreCase)\n        return nativeStartsWith(prefix, startIndex)\n    else\n        return regionMatches(startIndex,
prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if this string ends with the specified suffix.\n
*\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun

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String.endsWith(suffix: String, ignoreCase: Boolean = false): Boolean {
    if (!ignoreCase)
        return nativeEndsWith(suffix)
    else
        return regionMatches(length - suffix.length, suffix, 0, suffix.length, ignoreCase)
}
@Deprecated("Use Regex.matches() instead",
ReplaceWith("regex.toRegex().matches(this)"))
@DeprecatedSinceKotlin(warningSince = "1.6")
public fun String.matches(regex: String): Boolean {
    @Suppress("DEPRECATION")
    val result = this.match(regex)
    return result != null
}
&& result.size != 0
}
/**
 * Returns `true` if this string is empty or consists solely of whitespace characters.
 */
@sample samples.text.Strings.stringIsBlank
*/
public actual fun CharSequence.isBlank(): Boolean = length == 0 || indices.all { this[it].isWhitespace() }
}
/**
 * Returns `true` if this string is equal to [other], optionally ignoring character case.
 * Two strings are considered to be equal if they have the same length and the same character at the same index.
 * If [ignoreCase] is true, the result of `Char.uppercaseChar().lowercaseChar()` on each character is compared.
 * @param ignoreCase `true` to ignore character case when comparing strings. By default `false`.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String?.equals(other: String?, ignoreCase: Boolean = false): Boolean {
    if (this == null) return other == null
    if (other == null) return false
    if (!ignoreCase) return this == other
    if (this.length != other.length) return false
    for (index in 0 until this.length) {
        val thisChar = this[index]
        val otherChar = other[index]
        if (!thisChar.equals(otherChar, ignoreCase)) {
            return false
        }
    }
    return true
}
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun CharSequence.regionMatches(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int, ignoreCase: Boolean = false): Boolean =
    regionMatchesImpl(thisOffset, other, otherOffset, length, ignoreCase)
}
/**
 * Returns a copy of this string having its first letter titlecased using the rules of the default locale, or the original string if it's empty or already starts with a title case letter.
 * The title case of a character is usually the same as its upper case with several exceptions.
 * The particular list of characters with the special title case form depends on the underlying platform.
 * @sample samples.text.Strings.capitalize
 */
@Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { if (it.isLowerCase()) it.titlecase() else it.toString() }"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public actual fun String.capitalize(): String {
    return if (isEmpty()) substring(0, 1).uppercase() + substring(1) else this
}
/**
 * Returns a copy of this string having its first letter lowercased using the rules of the default locale, or the original string if it's empty or already starts with a lower case letter.
 * @sample samples.text.Strings.decitalize
 */
@Deprecated("Use replaceFirstChar instead.",
ReplaceWith("replaceFirstChar { it.lowercase() }"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public actual fun String.decitalize(): String {
    return if (isEmpty()) substring(0, 1).lowercase() + substring(1) else this
}
}
/**
 * Returns a string containing this char sequence repeated [n] times.
 * @throws [IllegalArgumentException]
 * when n < 0.
 * @sample samples.text.Strings.repeat
 */
public actual fun CharSequence.repeat(n: Int): String {
    require(n >= 0) { "Count 'n' must be non-negative, but was $n." }
    return when (n) {
        0 -> ""
        1 -> this.toString()
        else -> {
            var result = ""
            if (!isEmpty()) {
                var s = this.toString()
                var count = n
                while (true) {
                    if ((count and 1) == 1) {
                        result += s
                    }
                    count = count ushr 1
                    if (count == 0) {
                        break
                    }
                    s += s
                }
            }
            return result
        }
    }
}
}
/**
 * Returns a new string obtained by replacing all occurrences of the [oldValue] substring in this string with the specified [newValue] string.
 * @sample samples.text.Strings.replace
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String.replace(oldValue: String, newValue: String, ignoreCase: Boolean = false): String =
    nativeReplace(Regex(Regex.escape(oldValue)), if (ignoreCase) "gui" else "gu"),
    Regex.nativeEscapeReplacement(newValue))
}
/**
 * Returns a new string with all occurrences of [oldChar] replaced with [newChar].
 * @sample samples.text.Strings.replace
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun

```

```

String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean = false): String =\n
nativeReplace(RegExp(Regex.escape(oldChar.toString()), if (ignoreCase) \"gui\" else \"gu\"),
newChar.toString())\n\n@Suppress(\"ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS\")\npublic actual
fun String.replaceFirst(oldValue: String, newValue: String, ignoreCase: Boolean = false): String =\n
nativeReplace(RegExp(Regex.escape(oldValue), if (ignoreCase) \"ui\" else \"u\"),
Regex.nativeEscapeReplacement(newValue))\n\n@Suppress(\"ACTUAL_FUNCTION_WITH_DEFAULT_ARGU
MENTS\")\npublic
actual fun String.replaceFirst(oldChar: Char, newChar: Char, ignoreCase: Boolean = false): String =\n
nativeReplace(RegExp(Regex.escape(oldChar.toString()), if (ignoreCase) \"ui\" else \"u\"),
newChar.toString())\n\n\"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/** Returns the negative [size] if [throwOnMalformed] is
false, throws [CharacterCodingException] otherwise. */\nprivate fun malformed(size: Int, index: Int,
throwOnMalformed: Boolean): Int {\n    if (throwOnMalformed) throw CharacterCodingException(\"Malformed
sequence starting at ${index - 1}\")\n    return -size\n}\n\n/** Returns code point corresponding to UTF-16
surrogate pair,\n * where the first of the pair is the [high] and the second
is in the [string] at the [index].\n * Returns zero if the pair is malformed and [throwOnMalformed] is false.\n *
*\n * @throws CharacterCodingException if the pair is malformed and [throwOnMalformed] is true.\n */\nprivate fun
codePointFromSurrogate(string: String, high: Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int {\n
if (high !in 0xD800..0xDBFF || index >= endIndex) {\n    return malformed(0, index, throwOnMalformed)\n }
\n    val low = string[index].code\n    if (low !in 0xDC00..0xDFFF) {\n        return malformed(0, index,
throwOnMalformed)\n    }\n    return 0x10000 + ((high and 0x3FF) shl 10) or (low and 0x3FF)\n}\n\n/** Returns
code point corresponding to UTF-8 sequence of two bytes,\n * where the first byte of the sequence is the
[byte1] and the second byte is in the [bytes] array at the [index].\n * Returns zero if the sequence is malformed
and [throwOnMalformed] is false.\n *
*\n * @throws CharacterCodingException if the sequence of two bytes is
malformed and [throwOnMalformed] is true.\n */\nprivate fun codePointFrom2(bytes: ByteArray, byte1: Int, index:
Int, endIndex: Int, throwOnMalformed: Boolean): Int {\n    if (byte1 and 0x1E == 0 || index >= endIndex) {\n
return malformed(0, index, throwOnMalformed)\n }
\n    val byte2 = bytes[index].toInt()\n    if (byte2 and 0xC0 != 0x80) {\n        return malformed(0, index,
throwOnMalformed)\n    }\n    return (byte1 shl 6) xor byte2 xor 0xF8\n}\n\n/** Returns code point corresponding
to UTF-8 sequence of three bytes,\n * where the first byte of the sequence is the [byte1] and the others are in
the [bytes] array starting from the [index].\n * Returns a non-positive value indicating number of bytes from
[bytes] included in malformed sequence\n * if the sequence is malformed and [throwOnMalformed] is false.\n *
*\n * @throws CharacterCodingException if the sequence of three
bytes is malformed and [throwOnMalformed] is true.\n */\nprivate fun codePointFrom3(bytes: ByteArray,
byte1: Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int {\n    if (index >= endIndex) {\n       
return malformed(0, index, throwOnMalformed)\n    }\n    val byte2 = bytes[index].toInt()\n    if (byte1 and
0xF == 0) {\n        if (byte2 and 0xE0 != 0xA0) {\n            // Non-shortest form\n            return
malformed(0, index, throwOnMalformed)\n        }\n    } else if (byte1 and 0xF == 0xD) {\n        if (byte2 and
0xE0 != 0x80) {\n            // Surrogate code point\n            return malformed(0, index, throwOnMalformed)\n
        }\n    } else if (byte2 and 0xC0 != 0x80) {\n        return malformed(0, index, throwOnMalformed)\n    }\n
\n    if (index + 1 == endIndex) {\n        return malformed(1, index, throwOnMalformed)\n    }\n    val byte3 =
bytes[index + 1].toInt()\n    if (byte3 and 0xC0 != 0x80) {\n        return malformed(1, index,
throwOnMalformed)\n    }\n    return (byte1 shl 12) xor (byte2
shl 6) xor byte3 xor -0x1E080\n}\n\n/** Returns code point
corresponding to UTF-8 sequence of four bytes,\n * where the first byte of the sequence is the [byte1] and the
others are in the [bytes] array starting from the [index].\n * Returns a non-positive value indicating number of
bytes from [bytes] included in malformed sequence\n * if the sequence is malformed and [throwOnMalformed] is
false.\n *
*\n * @throws CharacterCodingException if the sequence of four bytes is malformed and [throwOnMalformed] is
true.\n */\nprivate fun codePointFrom4(bytes: ByteArray, byte1: Int, index: Int, endIndex: Int, throwOnMalformed:

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```

Boolean): Int {\n  if (index >= endIndex) {\n    malformed(0, index, throwOnMalformed)\n  }\n  val byte2 =
bytes[index].toInt()\n  if (byte1 and 0xF == 0x0) {\n    if (byte2 and 0xF0 <= 0x80) {\n      // Non-shortest
form\n      return malformed(0, index, throwOnMalformed)\n    } else if (byte1 and 0xF == 0x4) {\n
if (byte2 and 0xF0 != 0x80) {\n      // Out of Unicode code points
domain (larger than U+10FFFF)\n      return malformed(0, index, throwOnMalformed)\n    } else if
(byte1 and 0xF > 0x4) {\n      return malformed(0, index, throwOnMalformed)\n    } else if (byte2 and 0xC0 !=
0x80) {\n      return malformed(0, index, throwOnMalformed)\n    }\n  }\n  if (index + 1 == endIndex) {\n    return
malformed(1, index, throwOnMalformed)\n  }\n  val byte3 = bytes[index + 1].toInt()\n  if (byte3 and 0xC0 !=
0x80) {\n    return malformed(1, index, throwOnMalformed)\n  }\n  if (index + 2 == endIndex) {\n    return
malformed(2, index, throwOnMalformed)\n  }\n  val byte4 = bytes[index + 2].toInt()\n  if (byte4 and 0xC0 !=
0x80) {\n    return malformed(2, index, throwOnMalformed)\n  }\n  return (byte1 shl 18) xor (byte2 shl 12) xor
(byte3 shl 6) xor byte4 xor 0x381F80\n}\n\n/**\n * Maximum number of bytes needed to encode a single char.\n
*\n * Code points in `0..0x7F` are encoded in a single byte.\n * Code
points in `0x80..0x7FF` are encoded in two bytes.\n * Code points in `0x800..0xD7FF` or in `0xE000..0xFFFF` are
encoded in three bytes.\n * Surrogate code points in `0xD800..0xDFFF` are not Unicode scalar values, therefore
aren't encoded.\n * Code points in `0x10000..0x10FFFF` are represented by a pair of surrogate `Char`'s and are
encoded in four bytes.\n */\nprivate const val MAX_BYTES_PER_CHAR = 3\n\n/**\n * The byte sequence a
malformed UTF-16 char sequence is replaced by.\n */\nprivate val REPLACEMENT_BYTE_SEQUENCE:
ByteArray = arrayOf(0xEF.toByte(), 0xBF.toByte(), 0xBD.toByte())\n\n/**\n * Encodes the [string] using
UTF-8 and returns the resulting [ByteArray].\n *\n * @param string the string to encode.\n * @param startIndex the
start offset (inclusive) of the substring to encode.\n * @param endIndex the end offset (exclusive) of the substring to
encode.\n * @param throwOnMalformed whether to throw on malformed char sequence or replace by the
[REPLACEMENT_BYTE_SEQUENCE].\n *\n * @throws CharacterCodingException if the char sequence is malformed and [throwOnMalformed] is true.\n
*/\n\ninternal fun encodeUtf8(string: String, startIndex: Int, endIndex: Int, throwOnMalformed: Boolean): ByteArray
{\n  require(startIndex >= 0 && endIndex <= string.length && startIndex <= endIndex)\n  val bytes =
ByteArray((endIndex - startIndex) * MAX_BYTES_PER_CHAR)\n  var byteIndex = 0\n  var charIndex =
startIndex\n\n  while (charIndex < endIndex) {\n    val code = string[charIndex++].code\n    when {\n
code < 0x80 ->\n      bytes[byteIndex++] = code.toByte()\n      code < 0x800 -> {\n
bytes[byteIndex++] = ((code shr 6) or 0xC0).toByte()\n      bytes[byteIndex++] = ((code and 0x3F) or
0x80).toByte()\n      }\n      code < 0xD800 || code >= 0xE000 -> {\n      bytes[byteIndex++] = ((code
shr 12) or 0xE0).toByte()\n      bytes[byteIndex++] = (((code shr 6) and 0x3F) or 0x80).toByte()\n
      bytes[byteIndex++] = ((code and 0x3F) or 0x80).toByte()\n      }\n      else -> { // Surrogate char
value\n      val codePoint = codePointFromSurrogate(string, code, charIndex, endIndex,
throwOnMalformed)\n      if (codePoint <= 0) {\n      bytes[byteIndex++] =
REPLACEMENT_BYTE_SEQUENCE[0]\n      bytes[byteIndex++] =
REPLACEMENT_BYTE_SEQUENCE[1]\n      bytes[byteIndex++] =
REPLACEMENT_BYTE_SEQUENCE[2]\n      } else {\n      bytes[byteIndex++] = ((codePoint shr
18) or 0xF0).toByte()\n      bytes[byteIndex++] = (((codePoint shr 12) and 0x3F) or 0x80).toByte()\n
      bytes[byteIndex++] = (((codePoint shr 6) and 0x3F) or 0x80).toByte()\n      bytes[byteIndex++] =
((codePoint and 0x3F) or 0x80).toByte()\n      charIndex++\n      }\n      }\n      }\n      }\n\n  return if (bytes.size == byteIndex) bytes
else bytes.copyOf(byteIndex)\n}\n\n/**\n * The character a malformed UTF-8 byte sequence is replaced by.\n
*/\nprivate const val REPLACEMENT_CHAR = "\\uFFFD"\n\n/**\n * Decodes the UTF-8 [bytes] array and returns
the resulting [String].\n *\n * @param bytes the byte array to decode.\n * @param startIndex the start offset
(inclusive) of the array to be decoded.\n * @param endIndex the end offset (exclusive) of the array to be encoded.\n
*\n * @param throwOnMalformed whether to throw on malformed byte sequence or replace by the
[REPLACEMENT_CHAR].\n *\n * @throws CharacterCodingException if the array is malformed UTF-8 byte

```

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sequence and [throwOnMalformed] is true.\n */\ninternal fun decodeUtf8(bytes: ByteArray, startIndex: Int,
endIndex: Int, throwOnMalformed: Boolean): String {\n    require(startIndex >= 0 && endIndex <= bytes.size &&
startIndex <= endIndex)\n    var byteIndex = startIndex\n    val stringBuilder = StringBuilder()\n    while
(byteIndex < endIndex) {\n        val byte
= bytes[byteIndex++].toInt()\n        when {\n            byte >= 0 -> {\n                stringBuilder.append(byte.toChar())\n
byte shr 5 == -2 -> {\n                    val code = codePointFrom2(bytes, byte, byteIndex, endIndex,
throwOnMalformed)\n                    if (code <= 0) {\n                        stringBuilder.append(REPLACEMENT_CHAR)\n
byteIndex += -code\n                    } else {\n                        stringBuilder.append(code.toChar())\n
byteIndex += 1\n                    }\n                }\n            byte shr 4 == -2 -> {\n                val code = codePointFrom3(bytes,
byte, byteIndex, endIndex, throwOnMalformed)\n                if (code <= 0) {\n                    stringBuilder.append(REPLACEMENT_CHAR)\n
byteIndex += -code\n                } else {\n                    stringBuilder.append(code.toChar())\n                    byteIndex += 2\n                }\n            }\n            byte shr 3 == -2 -
> {\n                val code = codePointFrom4(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n                if (code <= 0)
{\n                    stringBuilder.append(REPLACEMENT_CHAR)\n                    byteIndex += -code\n                } else
{\n                    val high = (code - 0x10000) shr 10 or 0xD800\n                    val low = (code and 0x3FF) or
0xDC00\n                    stringBuilder.append(high.toChar())\n                    stringBuilder.append(low.toChar())\n
byteIndex += 3\n                }\n            }\n            else -> {\n                malformed(0, byteIndex,
throwOnMalformed)\n                stringBuilder.append(REPLACEMENT_CHAR)\n            }\n        }\n    }\n    return stringBuilder.toString()\n}"/\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Returns the detailed description of this throwable with its stack trace.\n * The detailed description includes:\n * - the short description (see [Throwable.toString]) of this throwable;\n * - the complete stack trace;\n * - detailed
descriptions of the exceptions that were [suppressed][suppressedExceptions] in order to deliver this exception;\n * -
the detailed description of each throwable in the [Throwable.cause] chain.\n */\n@SinceKotlin("1.4")\npublic
actual fun Throwable.stackTraceToString(): String = ExceptionTraceBuilder().buildFor(this)\n\n/**\n * Prints the
[detailed description][Throwable.stackTraceToString] of this throwable to console error output.\n */\n@SinceKotlin("1.4")\npublic actual fun Throwable.printStackTrace() {\n
console.error(this.stackTraceToString())\n}\n\n/**\n * Adds the specified exception to the list of exceptions that
were\n * suppressed in order to deliver this exception.\n */\n@SinceKotlin("1.4")\npublic actual fun
Throwable.addSuppressed(exception:
Throwable) {\n    if (this !== exception) {\n        val suppressed =
this.asDynamic()._suppressed.unsafeCast<MutableList<Throwable?>>()\n        if (suppressed == null) {\n
this.asDynamic()._suppressed = mutableListOf(exception)\n        } else {\n            suppressed.add(exception)\n
}\n    }\n}\n\n/**\n * Returns a list of all exceptions that were suppressed in order to deliver this exception.\n
*/\n@SinceKotlin("1.4")\npublic actual val Throwable.suppressedExceptions: List<Throwable>\n    get() {\n
return this.asDynamic()._suppressed?.unsafeCast<List<Throwable?>>() ?: emptyList()\n    }\n\nprivate class
ExceptionTraceBuilder {\n    private val target = StringBuilder()\n    private val visited = arrayOf<Throwable>()\n
private var topStack: String = ""\n    private var topStackStart: Int = 0\n    fun buildFor(exception: Throwable):
String {\n        exception.dumpFullTrace("", "")\n        return target.toString()\n    }\n\n    private fun
hasSeen(exception: Throwable): Boolean = visited.any { it === exception }\n    private fun
Throwable.dumpFullTrace(indent: String, qualifier: String) {\n        this.dumpSelfTrace(indent, qualifier) ||
return\n        var cause = this.cause\n        while (cause != null) {\n            cause.dumpSelfTrace(indent, "Caused
by: ") || return\n            cause = cause.cause\n        }\n    }\n\n    private fun Throwable.dumpSelfTrace(indent:
String, qualifier: String): Boolean {\n        target.append(indent).append(qualifier)\n        val shortInfo =
this.toString()\n        if (hasSeen(this)) {\n            target.append("[CIRCULAR REFERENCE, SEE ABOVE:
").append(shortInfo).append("\\n")\n            return false\n        }\n        visited.asDynamic().push(this)\n        var

```

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stack = this.asDynamic().stack as String?
if (stack != null) {
    val stackStart = stack.indexOf(shortInfo).let { if (it < 0) 0 else it + shortInfo.length }
    if (stackStart == 0) target.append(shortInfo).append("\n")
    if (topStack.isEmpty()) {
        topStack = stack
        topStackStart = stackStart
    } else {
        stack = dropCommonFrames(stack, stackStart)
    }
    if (indent.isNotEmpty()) {
        // indent stack, but avoid indenting exception message lines
        val messageLines = if (stackStart == 0) 0 else 1 + shortInfo.count { c -> c == '\n' }
        stack.lineSequence().forEachIndexed { index: Int, line: String ->
            if (index >= messageLines) target.append(indent)
            target.append(line).append("\n")
        }
    } else {
        target.append(stack).append("\n")
    }
    if (suppressed.isNotEmpty()) {
        val suppressedIndent = indent + "  "
        for (s in suppressed) {
            s.dumpFullTrace(suppressedIndent, "Suppressed: ")
        }
        return true
    }
}

private fun dropCommonFrames(stack: String, stackStart: Int): String {
    var commonFrames: Int = 0
    var lastBreak: Int = 0
    var preLastBreak: Int = 0
    for (pos in 0 until minOf(topStack.length - topStackStart, stack.length - stackStart)) {
        val c = stack[stack.lastIndex - pos]
        if (c != topStack[topStack.lastIndex - pos]) {
            break
        }
        if (c == '\n') {
            commonFrames += 1
            preLastBreak = lastBreak
            lastBreak = pos
        }
    }
    if (commonFrames <= 1) return stack
    while (preLastBreak > 0 && stack[stack.lastIndex - (preLastBreak - 1)] == ' ') {
        preLastBreak -= 1
    }
    // leave 1 common frame to ease matching with the top exception
    return stack.dropLast(preLastBreak) + "... and ${commonFrames - 1} more common stack frames skipped"
}

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 */
package kotlin.time
import kotlin.js.json
import kotlin.math.*
internal actual inline val durationAssertionsEnabled: Boolean get() = true
internal actual fun formatToExactDecimals(value: Double, decimals: Int): String {
    val rounded = if (decimals == 0) {
        value
    } else {
        val pow = 10.0.pow(decimals)
        JsMath.round(abs(value) * pow) / pow * sign(value)
    }
    return if (abs(rounded) < 1e21) {
        // toFixed switches to scientific format after 1e21
        rounded.asDynamic().toFixed(decimals).unsafeCast<String>()
    } else {
        // toPrecision outputs the specified number of digits, but only for positive numbers
        val positive = abs(rounded)
        val positiveString = positive.asDynamic().toPrecision(ceil(log10(positive)) + decimals).unsafeCast<String>()
        if (rounded < 0) "-" + positiveString else positiveString
    }
}
internal actual fun formatUpToDecimals(value: Double, decimals: Int): String {
    return value.asDynamic().toLocaleString("en-us", json("maximumFractionDigits" to decimals)).unsafeCast<String>()
}

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 */
package kotlin.time
@SinceKotlin("1.6")
@WasExperimental(ExperimentalTime::class)
public actual enum class DurationUnit(internal val scale: Double) {
    /**
     * Time unit representing one nanosecond, which is 1/1000 of a microsecond.
     */
    NANoseconds(1e0),
    /**
     * Time unit representing one microsecond, which is 1/1000 of a millisecond.
     */
    MICROseconds(1e3),
    /**
     * Time unit representing one millisecond, which is 1/1000 of a second.
     */
    MILLIseconds(1e6),
    /**
     * Time unit representing one second.
     */
    SECONDS(1e9),
    /**
     * Time unit representing one minute.
     */
    MINUTES(60e9),
    /**
     * Time unit representing one hour.
     */
    HOURS(3600e9),
    /**
     * Time unit representing one day, which is always equal to 24 hours.
     */
    DAYS(86400e9)
}
internal actual fun convertDurationUnit(value: Double, sourceUnit: DurationUnit, targetUnit: DurationUnit): Double {
    val sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)
    return when {
        sourceCompareTarget > 0 -> value *

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(sourceUnit.scale / targetUnit.scale)\n    sourceCompareTarget < 0 -> value / (targetUnit.scale /
sourceUnit.scale)\n    else -> value\n
}\n}\n\n@SinceKotlin("1.5")\ninternal actual fun convertDurationUnitOverflow(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit): Long {\n    val sourceCompareTarget =
sourceUnit.scale.compareTo(targetUnit.scale)\n    return when {\n        sourceCompareTarget > 0 -> value *
(sourceUnit.scale / targetUnit.scale).toLong()\n        sourceCompareTarget < 0 -> value / (targetUnit.scale /
sourceUnit.scale).toLong()\n        else -> value\n    }\n}\n}\n\n@SinceKotlin("1.5")\ninternal actual fun
convertDurationUnit(value: Long, sourceUnit: DurationUnit, targetUnit: DurationUnit): Long {\n    val
sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n    return when {\n
sourceCompareTarget > 0 -> {\n        val scale = (sourceUnit.scale / targetUnit.scale).toLong()\n        val result
= value * scale\n        when {\n            result / scale == value -> result\n            value > 0 ->
Long.MAX_VALUE\n            else -> Long.MIN_VALUE\n        }\n    }\n    sourceCompareTarget < 0 -> value / (targetUnit.scale / sourceUnit.scale).toLong()\n
else -> value\n }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport org.w3c.performance.GlobalPerformance\nimport
org.w3c.performance.Performance\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal actual object
MonotonicTimeSource : TimeSource {\n    private val actualSource: TimeSource = run {\n        val isNode:
Boolean = js("typeof process !== 'undefined' && process.versions && !process.versions.node")\n        if
(isNode)\n            HrTimeSource(js("process").unsafeCast<Process>())\n        else\n            js("self").unsafeCast<GlobalPerformance?>()?.performance?.let(::PerformanceTimeSource)\n        ?:\n        DateNowTimeSource\n    }\n\n    override fun markNow(): TimeMark = actualSource.markNow()\n}\n}\n\ninternal external interface Process
{\n    fun hrtime(time: Array<Double> = definedExternally):
Array<Double>\n}\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal class HrTimeSource(val process:
Process) : TimeSource {\n    override fun markNow(): TimeMark = object : TimeMark() {\n        val startedAt =
process.hrtime()\n        override fun elapsedNow(): Duration =\n            process.hrtime(startedAt).let { (seconds,
nanos) -> seconds.toDuration(DurationUnit.SECONDS) + nanos.toDuration(DurationUnit.NANOSECONDS) }\n    }\n\n    override fun toString(): String =
\n    }\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal class
PerformanceTimeSource(val performance: Performance) : AbstractDoubleTimeSource(unit =
DurationUnit.MILLISECONDS) {\n    override fun read(): Double = performance.now()\n    override fun toString():
String =\n    }\n}\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal
object DateNowTimeSource : AbstractDoubleTimeSource(unit = DurationUnit.MILLISECONDS) {\n    override
fun read(): Double = kotlin.js.Date.now()\n    override fun toString(): String =\n    }\n}\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlinx.dom\n\nimport org.w3c.dom.*\nimport kotlin.contracts.*\n\n/*\n * Creates a new element with the
specified [name].\n * *\n * The element is initialized with the specified [init] function.\n */\n\n@SinceKotlin("1.4")\npublic fun Document.createElement(name: String, init: Element.() -> Unit): Element {\n
    contract { callsInPlace(init, InvocationKind.EXACTLY_ONCE) }\n    return
createElement(name).apply(init)\n}\n\n"/*\n * Appends a newly created element with the specified [name] to this
element.\n *\n * The element is initialized with the specified [init] function.\n */\n\n@SinceKotlin("1.4")\npublic fun
Element.appendChild(name: String, init: Element.() -> Unit): Element {\n    contract { callsInPlace(init,
InvocationKind.EXACTLY_ONCE) }\n    return ownerDocument!!.createElement(name, init).also {
appendChild(it) }\n}\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

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license/LICENSE.txt file.\n */\n\npackage kotlinx.dom\n\nimport org.w3c.dom.*\n\n/** Returns true if the element has the given CSS class style in its 'class' attribute */\n@SinceKotlin("1.4")\nfun Element.hasClass(cssClass: String): Boolean = className.matches("\\\\\\"(\\^.*\\|s+)\$cssClass(\\|s+.*)"\\.toRegex())\n\n/**\n * Adds CSS class to element. Has no effect if all specified classes are already in class attribute of the element\n * */\n * @return true if at least one class has

been added\n */\n@SinceKotlin("1.4")\nfun Element.addClass(vararg cssClasses: String): Boolean {\n val missingClasses = cssClasses.filterNot { hasClass(it) }\n if (missingClasses.isNotEmpty()) {\n val presentClasses = className.trim()\n className = buildString {\n append(presentClasses)\n if (!presentClasses.isEmpty()) {\n append(" ")\n }\n missingClasses.joinTo(this, " ")\n }\n return true\n }\n return false\n}\n\n/**\n * Removes all [cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the element\n * */\n * @return true if at least one class has been removed\n */\n@SinceKotlin("1.4")\nfun Element.removeClass(vararg cssClasses: String): Boolean {\n if (cssClasses.any { hasClass(it) }) {\n val toBeRemoved = cssClasses.toSet()\n className = className.trim().split("\\\\\\"s+\\.toRegex()).filter { it !in toBeRemoved }.joinToString("\\\\\\"")\n return true\n }\n return false\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n

*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage kotlinx.text\n\n/**\n * Converts the string into a regular expression [Regex] with the default options.\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(): Regex = Regex(this)\n\n/**\n * Converts the string into a regular expression [Regex] with the specified single [option].\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(option: RegexOption): Regex = Regex(this, option)\n\n/**\n * Converts the string into a regular expression [Regex] with the specified set of [options].\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(options: Set<RegexOption>): Regex = Regex(this, options)\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n

/\n\npackage kotlinx.dom\n\nimport org.w3c.dom.\n\n/**\n * Gets a value indicating whether this node is a TEXT_NODE or a CDATA_SECTION_NODE.\n */\n@SinceKotlin("1.4")\npublic val Node.isText: Boolean\n get() = nodeType == Node.TEXT_NODE || nodeType == Node.CDATA_SECTION_NODE\n\n/**\n * Gets a value indicating whether this node is an [Element].\n */\n@SinceKotlin("1.4")\npublic val Node.isElement: Boolean\n get() = nodeType == Node.ELEMENT_NODE\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlinx.dom\n\nimport org.w3c.dom.*\n\n/**\n * Removes all the children from this node.\n */\n@SinceKotlin("1.4")\npublic

fun Node.clear() {\n while (hasChildNodes()) {\n removeChild(firstChild!)\n }\n}\n\n/**\n * Creates text node and append it to the element.\n * */\n * @return this element\n */\n@SinceKotlin("1.4")\nfun Element.appendChild(text: String): Element {\n appendChild(ownerDocument!!.createTextNode(text))\n return this\n}\n\n"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n

*/\n\npackage org.w3c.dom\n\n@Deprecated("Use UnionMessagePortOrWindowProxy instead.")\nReplaceWith("UnionMessagePortOrWindowProxy")\nntypealias UnionMessagePortOrWindow = UnionMessagePortOrWindowProxy\n\n@Deprecated("Use `as` instead.", ReplaceWith("`as`"))\nvar HTMLLinkElement.as_:\n get() = `as`\n set(value) {\n `as` = value\n }\n\n@Deprecated("Use `is` instead.", ReplaceWith("`is`"))\nvar

ElementCreationOptions.is_:\n get() = `is`\n set(value) {\n `is` = value\n }\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage


```

org.khronos.webgl\n\nimport kotlin.js.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external
interface WebGLContextAttributes {\n    var alpha: Boolean? /* = true */\n        get() = definedExternally\n
set(value) = definedExternally\n    var depth: Boolean? /* = true */\n        get() = definedExternally\n        set(value)
= definedExternally\n    var stencil: Boolean? /* = false */\n        get() = definedExternally\n        set(value) =
definedExternally\n    var antialias: Boolean? /* = true */\n        get() = definedExternally\n        set(value)
= definedExternally\n    var premultipliedAlpha: Boolean? /* = true */\n        get() = definedExternally\n
set(value) = definedExternally\n    var preserveDrawingBuffer: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var preferLowPowerToHighPerformance: Boolean? /* =
false */\n        get() = definedExternally\n        set(value) = definedExternally\n    var failIfMajorPerformanceCaveat:
Boolean? /* = false */\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun WebGLContextAttributes(alpha:
Boolean? = true, depth: Boolean? = true, stencil: Boolean? = false, antialias: Boolean? = true, premultipliedAlpha:
Boolean? = true, preserveDrawingBuffer: Boolean? = false, preferLowPowerToHighPerformance: Boolean? = false,
failIfMajorPerformanceCaveat: Boolean? = false): WebGLContextAttributes {\n
    val o = js(\"({})\")\n    o[\"alpha\"] = alpha\n    o[\"depth\"] = depth\n    o[\"stencil\"] = stencil\n    o[\"antialias\"] =
antialias\n    o[\"premultipliedAlpha\"] = premultipliedAlpha\n    o[\"preserveDrawingBuffer\"] =
preserveDrawingBuffer\n    o[\"preferLowPowerToHighPerformance\"] = preferLowPowerToHighPerformance\n
    o[\"failIfMajorPerformanceCaveat\"] = failIfMajorPerformanceCaveat\n    return o\n}\n\npublic external abstract
class WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLBuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLBuffer) to Kotlin\n */\n\npublic external
abstract class WebGLBuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLFramebuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLFramebuffer) to Kotlin\n */\n\npublic
external abstract class WebGLFramebuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLProgram](https://developer.mozilla.org/en/docs/Web/API/WebGLProgram) to Kotlin\n */\n\npublic external
abstract class WebGLProgram
: WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLRenderbuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderbuffer) to Kotlin\n */\n\npublic
external abstract class WebGLRenderbuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLShader](https://developer.mozilla.org/en/docs/Web/API/WebGLShader) to Kotlin\n */\n\npublic external
abstract class WebGLShader : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLTexture](https://developer.mozilla.org/en/docs/Web/API/WebGLTexture) to Kotlin\n */\n\npublic external
abstract class WebGLTexture : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLUniformLocation](https://developer.mozilla.org/en/docs/Web/API/WebGLUniformLocation) to Kotlin\n
*/\n\npublic external abstract class WebGLUniformLocation\n\n/**\n * Exposes the JavaScript
[WebGLActiveInfo](https://developer.mozilla.org/en/docs/Web/API/WebGLActiveInfo) to Kotlin\n */\n\npublic
external abstract class WebGLActiveInfo {\n    open val size: Int\n    open val type: Int\n
    open val name: String\n}\n\n/**\n * Exposes the JavaScript
[WebGLShaderPrecisionFormat](https://developer.mozilla.org/en/docs/Web/API/WebGLShaderPrecisionFormat) to
Kotlin\n */\n\npublic external abstract class WebGLShaderPrecisionFormat {\n    open val rangeMin: Int\n    open val
rangeMax: Int\n    open val precision:
Int\n}\n\n}\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external interface
WebGLRenderingContextBase {\n    val canvas: HTMLCanvasElement\n    val drawingBufferWidth: Int\n    val
drawingBufferHeight: Int\n    fun getContextAttributes(): WebGLContextAttributes?\n    fun isContextLost():
Boolean\n    fun getSupportedExtensions(): Array<String>?\n    fun getExtension(name: String): dynamic\n    fun
activeTexture(texture: Int)\n    fun attachShader(program: WebGLProgram?, shader: WebGLShader?)\n    fun
bindAttribLocation(program: WebGLProgram?, index: Int, name: String)\n    fun bindBuffer(target: Int, buffer:
WebGLBuffer?)\n    fun bindFramebuffer(target: Int,

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framebuffer: WebGLFramebuffer?)\n fun bindRenderbuffer(target: Int, renderbuffer: WebGLRenderbuffer?)\n
fun bindTexture(target: Int, texture: WebGLTexture?)\n fun blendColor(red: Float, green: Float, blue: Float, alpha:
Float)\n fun blendEquation(mode: Int)\n fun blendEquationSeparate(modeRGB: Int, modeAlpha: Int)\n fun
blendFunc(sfactor: Int, dfactor: Int)\n fun blendFuncSeparate(srcRGB: Int, dstRGB: Int, srcAlpha: Int, dstAlpha:
Int)\n fun bufferData(target: Int, size: Int, usage: Int)\n fun bufferData(target: Int, data: BufferDataSource?,
usage: Int)\n fun bufferSubData(target: Int, offset: Int, data: BufferDataSource?)\n fun
checkFramebufferStatus(target: Int): Int\n fun clear(mask: Int)\n fun clearColor(red: Float, green: Float, blue:
Float, alpha: Float)\n fun clearDepth(depth: Float)\n fun clearStencil(s: Int)\n fun colorMask(red: Boolean,
green: Boolean, blue: Boolean, alpha: Boolean)\n fun compileShader(shader: WebGLShader?)\n
fun compressedTexImage2D(target: Int, level: Int, internalformat: Int, width: Int, height: Int, border: Int, data:
ArrayBufferView)\n fun compressedTexSubImage2D(target: Int, level: Int, xoffset: Int, yoffset: Int, width: Int,
height: Int, format: Int, data: ArrayBufferView)\n fun copyTexImage2D(target: Int, level: Int, internalformat: Int,
x: Int, y: Int, width: Int, height: Int, border: Int)\n fun copyTexSubImage2D(target: Int, level: Int, xoffset: Int,
yoffset: Int, x: Int, y: Int, width: Int, height: Int)\n fun createBuffer(): WebGLBuffer?\n fun createFramebuffer():
WebGLFramebuffer?\n fun createProgram(): WebGLProgram?\n fun createRenderbuffer():
WebGLRenderbuffer?\n fun createShader(type: Int): WebGLShader?\n fun createTexture(): WebGLTexture?\n
fun cullFace(mode: Int)\n fun deleteBuffer(buffer: WebGLBuffer?)\n fun deleteFramebuffer(framebuffer:
WebGLFramebuffer?)\n fun deleteProgram(program: WebGLProgram?)\n fun deleteRenderbuffer(renderbuffer:
WebGLRenderbuffer?)\n fun deleteShader(shader: WebGLShader?)\n fun deleteTexture(texture:
WebGLTexture?)\n fun depthFunc(func: Int)\n fun depthMask(flag: Boolean)\n fun depthRange(zNear: Float,
zFar: Float)\n fun detachShader(program: WebGLProgram?, shader: WebGLShader?)\n fun disable(cap: Int)\n
fun disableVertexArray(index: Int)\n fun drawArrays(mode: Int, first: Int, count: Int)\n fun
drawElements(mode: Int, count: Int, type: Int, offset: Int)\n fun enable(cap: Int)\n fun
enableVertexArray(index: Int)\n fun finish()\n fun flush()\n fun framebufferRenderbuffer(target: Int,
attachment: Int, renderbuffertarget: Int, renderbuffer: WebGLRenderbuffer?)\n fun framebufferTexture2D(target:
Int, attachment: Int, textarget: Int, texture: WebGLTexture?, level: Int)\n fun frontFace(mode: Int)\n fun
generateMipmap(target: Int)\n fun getActiveAttrib(program: WebGLProgram?, index: Int): WebGLActiveInfo?\n
fun getActiveUniform(program:
WebGLProgram?, index: Int): WebGLActiveInfo?\n fun getAttachedShaders(program: WebGLProgram?):
Array<WebGLShader?>\n fun getAttribLocation(program: WebGLProgram?, name: String): Int\n fun
getBufferParameter(target: Int, pname: Int): Any?\n fun getParameter(pname: Int): Any?\n fun getError(): Int\n
fun getFramebufferAttachmentParameter(target: Int, attachment: Int, pname: Int): Any?\n fun
getProgramParameter(program: WebGLProgram?, pname: Int): Any?\n fun getProgramInfoLog(program:
WebGLProgram?): String?\n fun getRenderbufferParameter(target: Int, pname: Int): Any?\n fun
getShaderParameter(shader: WebGLShader?, pname: Int): Any?\n fun getShaderPrecisionFormat(shader: Int,
precisiontype: Int): WebGLShaderPrecisionFormat?\n fun getShaderInfoLog(shader: WebGLShader?): String?\n
fun getShaderSource(shader: WebGLShader?): String?\n fun getTexParameter(target: Int, pname: Int): Any?\n
fun getUniform(program: WebGLProgram?,
location: WebGLUniformLocation?): Any?\n fun getUniformLocation(program: WebGLProgram?, name:
String): WebGLUniformLocation?\n fun getVertexAttrib(index: Int, pname: Int): Any?\n fun
getVertexAttribOffset(index: Int, pname: Int): Int\n fun hint(target: Int, mode: Int)\n fun isBuffer(buffer:
WebGLBuffer?): Boolean\n fun isEnabled(cap: Int): Boolean\n fun isFramebuffer(framebuffer:
WebGLFramebuffer?): Boolean\n fun isProgram(program: WebGLProgram?): Boolean\n fun
isRenderbuffer(renderbuffer: WebGLRenderbuffer?): Boolean\n fun isShader(shader: WebGLShader?): Boolean\n
fun isTexture(texture: WebGLTexture?): Boolean\n fun lineWidth(width: Float)\n fun linkProgram(program:
WebGLProgram?)\n fun pixelStorei(pname: Int, param: Int)\n fun polygonOffset(factor: Float, units: Float)\n
fun readPixels(x: Int, y: Int, width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)\n fun
renderbufferStorage(target: Int, internalformat: Int,

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width: Int, height: Int)\n fun sampleCoverage(value: Float, invert: Boolean)\n fun scissor(x: Int, y: Int, width:
Int, height: Int)\n fun shaderSource(shader: WebGLShader?, source: String)\n fun stencilFunc(func: Int, ref: Int,
mask: Int)\n fun stencilFuncSeparate(face: Int, func: Int, ref: Int, mask: Int)\n fun stencilMask(mask: Int)\n fun
stencilMaskSeparate(face: Int, mask: Int)\n fun stencilOp(fail: Int, zfail: Int, zpass: Int)\n fun
stencilOpSeparate(face: Int, fail: Int, zfail: Int, zpass: Int)\n fun texImage2D(target: Int, level: Int, internalformat:
Int, width: Int, height: Int, border: Int, format: Int, type: Int, pixels: ArrayBufferView?)\n fun texImage2D(target:
Int, level: Int, internalformat: Int, format: Int, type: Int, source: TexImageSource?)\n fun texParameterf(target: Int,
pname: Int, param: Float)\n fun texParameteri(target: Int, pname: Int, param: Int)\n fun texSubImage2D(target:
Int, level: Int, xoffset: Int, yoffset: Int,
width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)\n fun texSubImage2D(target: Int, level:
Int, xoffset: Int, yoffset: Int, format: Int, type: Int, source: TexImageSource?)\n fun uniform1f(location:
WebGLUniformLocation?, x: Float)\n fun uniform1fv(location: WebGLUniformLocation?, v: Float32Array)\n
fun uniform1fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun uniform1i(location:
WebGLUniformLocation?, x: Int)\n fun uniform1iv(location: WebGLUniformLocation?, v: Int32Array)\n fun
uniform1iv(location: WebGLUniformLocation?, v: Array<Int>)\n fun uniform2f(location:
WebGLUniformLocation?, x: Float, y: Float)\n fun uniform2fv(location: WebGLUniformLocation?, v:
Float32Array)\n fun uniform2fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun
uniform2i(location: WebGLUniformLocation?, x: Int, y: Int)\n fun uniform2iv(location:
WebGLUniformLocation?, v: Int32Array)\n fun uniform2iv(location: WebGLUniformLocation?,
v: Array<Int>)\n fun uniform3f(location: WebGLUniformLocation?, x: Float, y: Float, z: Float)\n fun
uniform3fv(location: WebGLUniformLocation?, v: Float32Array)\n fun uniform3fv(location:
WebGLUniformLocation?, v: Array<Float>)\n fun uniform3i(location: WebGLUniformLocation?, x: Int, y: Int, z:
Int)\n fun uniform3iv(location: WebGLUniformLocation?, v: Int32Array)\n fun uniform3iv(location:
WebGLUniformLocation?, v: Array<Int>)\n fun uniform4f(location: WebGLUniformLocation?, x: Float, y: Float,
z: Float, w: Float)\n fun uniform4fv(location: WebGLUniformLocation?, v: Float32Array)\n fun
uniform4fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun uniform4i(location:
WebGLUniformLocation?, x: Int, y: Int, z: Int, w: Int)\n fun uniform4iv(location: WebGLUniformLocation?, v:
Int32Array)\n fun uniform4iv(location: WebGLUniformLocation?, v: Array<Int>)\n fun
uniformMatrix2fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n
fun uniformMatrix2fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
uniformMatrix3fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix3fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
uniformMatrix4fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix4fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
useProgram(program: WebGLProgram?)\n fun validateProgram(program: WebGLProgram?)\n fun
vertexAttrib1f(index: Int, x: Float)\n fun vertexAttrib1fv(index: Int, values: dynamic)\n fun
vertexAttrib2f(index: Int, x: Float, y: Float)\n fun vertexAttrib2fv(index: Int, values: dynamic)\n fun
vertexAttrib3f(index: Int, x: Float, y: Float, z: Float)\n fun vertexAttrib3fv(index: Int, values: dynamic)\n fun
vertexAttrib4f(index: Int, x: Float, y: Float, z: Float, w: Float)\n
fun vertexAttrib4fv(index: Int, values: dynamic)\n fun vertexAttribPointer(index: Int, size: Int, type: Int,
normalized: Boolean, stride: Int, offset: Int)\n fun viewport(x: Int, y: Int, width: Int, height: Int)\n\n companion
object {\n val DEPTH_BUFFER_BIT: Int\n val STENCIL_BUFFER_BIT: Int\n val
COLOR_BUFFER_BIT: Int\n val POINTS: Int\n val LINES: Int\n val LINE_LOOP: Int\n val
LINE_STRIP: Int\n val TRIANGLES: Int\n val TRIANGLE_STRIP: Int\n val TRIANGLE_FAN:
Int\n val ZERO: Int\n val ONE: Int\n val SRC_COLOR: Int\n val ONE_MINUS_SRC_COLOR:
Int\n val SRC_ALPHA: Int\n val ONE_MINUS_SRC_ALPHA: Int\n val DST_ALPHA: Int\n val
ONE_MINUS_DST_ALPHA: Int\n val DST_COLOR: Int\n val ONE_MINUS_DST_COLOR: Int\n
val SRC_ALPHA_SATURATE: Int\n val FUNC_ADD: Int\n val BLEND_EQUATION: Int\n val

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BLEND_EQUATION_RGB: Int\n
 val BLEND_EQUATION_ALPHA: Int\n val FUNC_SUBTRACT: Int\n val
 FUNC_REVERSE_SUBTRACT: Int\n val BLEND_DST_RGB: Int\n val BLEND_SRC_RGB: Int\n
 val BLEND_DST_ALPHA: Int\n val BLEND_SRC_ALPHA: Int\n val CONSTANT_COLOR: Int\n
 val ONE_MINUS_CONSTANT_COLOR: Int\n val CONSTANT_ALPHA: Int\n val
 ONE_MINUS_CONSTANT_ALPHA: Int\n val BLEND_COLOR: Int\n val ARRAY_BUFFER: Int\n
 val ELEMENT_ARRAY_BUFFER: Int\n val ARRAY_BUFFER_BINDING: Int\n val
 ELEMENT_ARRAY_BUFFER_BINDING: Int\n val STREAM_DRAW: Int\n val STATIC_DRAW: Int\n
 val DYNAMIC_DRAW: Int\n val BUFFER_SIZE: Int\n val BUFFER_USAGE: Int\n val
 CURRENT_VERTEX_ATTRIB: Int\n val FRONT: Int\n val BACK: Int\n val FRONT_AND_BACK:
 Int\n val CULL_FACE: Int\n val BLEND: Int\n val DITHER: Int\n val STENCIL_TEST: Int\n
 val DEPTH_TEST: Int\n val
 SCISSOR_TEST: Int\n val POLYGON_OFFSET_FILL: Int\n val SAMPLE_ALPHA_TO_COVERAGE:
 Int\n val SAMPLE_COVERAGE: Int\n val NO_ERROR: Int\n val INVALID_ENUM: Int\n val
 INVALID_VALUE: Int\n val INVALID_OPERATION: Int\n val OUT_OF_MEMORY: Int\n val CW:
 Int\n val CCW: Int\n val LINE_WIDTH: Int\n val ALIASED_POINT_SIZE_RANGE: Int\n val
 ALIASED_LINE_WIDTH_RANGE: Int\n val CULL_FACE_MODE: Int\n val FRONT_FACE: Int\n
 val DEPTH_RANGE: Int\n val DEPTH_WRITEMASK: Int\n val DEPTH_CLEAR_VALUE: Int\n val
 DEPTH_FUNC: Int\n val STENCIL_CLEAR_VALUE: Int\n val STENCIL_FUNC: Int\n val
 STENCIL_FAIL: Int\n val STENCIL_PASS_DEPTH_FAIL: Int\n val STENCIL_PASS_DEPTH_PASS:
 Int\n val STENCIL_REF: Int\n val STENCIL_VALUE_MASK: Int\n val STENCIL_WRITEMASK:
 Int\n val STENCIL_BACK_FUNC: Int\n val STENCIL_BACK_FAIL: Int\n
 val STENCIL_BACK_PASS_DEPTH_FAIL: Int\n val STENCIL_BACK_PASS_DEPTH_PASS: Int\n
 val STENCIL_BACK_REF: Int\n val STENCIL_BACK_VALUE_MASK: Int\n val
 STENCIL_BACK_WRITEMASK: Int\n val VIEWPORT: Int\n val SCISSOR_BOX: Int\n val
 COLOR_CLEAR_VALUE: Int\n val COLOR_WRITEMASK: Int\n val UNPACK_ALIGNMENT: Int\n
 val PACK_ALIGNMENT: Int\n val MAX_TEXTURE_SIZE: Int\n val MAX_VIEWPORT_DIMS: Int\n
 val SUBPIXEL_BITS: Int\n val RED_BITS: Int\n val GREEN_BITS: Int\n val BLUE_BITS: Int\n
 val ALPHA_BITS: Int\n val DEPTH_BITS: Int\n val STENCIL_BITS: Int\n val
 POLYGON_OFFSET_UNITS: Int\n val POLYGON_OFFSET_FACTOR: Int\n val
 TEXTURE_BINDING_2D: Int\n val SAMPLE_BUFFERS: Int\n val SAMPLES: Int\n val
 SAMPLE_COVERAGE_VALUE: Int\n val SAMPLE_COVERAGE_INVERT: Int\n val
 COMPRESSED_TEXTURE_FORMATS: Int\n val DONT_CARE:
 Int\n val FASTEST: Int\n val NICEST: Int\n val GENERATE_MIPMAP_HINT: Int\n val BYTE:
 Int\n val UNSIGNED_BYTE: Int\n val SHORT: Int\n val UNSIGNED_SHORT: Int\n val INT:
 Int\n val UNSIGNED_INT: Int\n val FLOAT: Int\n val DEPTH_COMPONENT: Int\n val
 ALPHA: Int\n val RGB: Int\n val RGBA: Int\n val LUMINANCE: Int\n val
 LUMINANCE_ALPHA: Int\n val UNSIGNED_SHORT_4_4_4_4: Int\n val
 UNSIGNED_SHORT_5_5_5_1: Int\n val UNSIGNED_SHORT_5_6_5: Int\n val
 FRAGMENT_SHADER: Int\n val VERTEX_SHADER: Int\n val MAX_VERTEX_ATTRIBS: Int\n
 val MAX_VERTEX_UNIFORM_VECTORS: Int\n val MAX_VARYING_VECTORS: Int\n val
 MAX_COMBINED_TEXTURE_IMAGE_UNITS: Int\n val MAX_VERTEX_TEXTURE_IMAGE_UNITS:
 Int\n val MAX_TEXTURE_IMAGE_UNITS: Int\n val MAX_FRAGMENT_UNIFORM_VECTORS: Int\n
 val SHADER_TYPE: Int\n val DELETE_STATUS:
 Int\n val LINK_STATUS: Int\n val VALIDATE_STATUS: Int\n val ATTACHED_SHADERS: Int\n
 val ACTIVE_UNIFORMS: Int\n val ACTIVE_ATTRIBUTES: Int\n val
 SHADING_LANGUAGE_VERSION: Int\n val CURRENT_PROGRAM: Int\n val NEVER: Int\n val
 LESS: Int\n val EQUAL: Int\n val LEQUAL: Int\n val GREATER: Int\n val NOTEQUAL: Int\n

val GEQUAL: Int\n val ALWAYS: Int\n val KEEP: Int\n val REPLACE: Int\n val INCR: Int\n
 val DECR: Int\n val INVERT: Int\n val INCR_WRAP: Int\n val DECR_WRAP: Int\n val
 VENDOR: Int\n val RENDERER: Int\n val VERSION: Int\n val NEAREST: Int\n val LINEAR:
 Int\n val NEAREST_MIPMAP_NEAREST: Int\n val LINEAR_MIPMAP_NEAREST: Int\n val
 NEAREST_MIPMAP_LINEAR: Int\n val LINEAR_MIPMAP_LINEAR: Int\n val
 TEXTURE_MAG_FILTER: Int\n val TEXTURE_MIN_FILTER: Int\n
 val TEXTURE_WRAP_S: Int\n val TEXTURE_WRAP_T: Int\n val TEXTURE_2D: Int\n val
 TEXTURE: Int\n val TEXTURE_CUBE_MAP: Int\n val TEXTURE_BINDING_CUBE_MAP: Int\n
 val TEXTURE_CUBE_MAP_POSITIVE_X: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_X: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Y: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Y: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Z: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Z: Int\n val
 MAX_CUBE_MAP_TEXTURE_SIZE: Int\n val TEXTURE0: Int\n val TEXTURE1: Int\n val
 TEXTURE2: Int\n val TEXTURE3: Int\n val TEXTURE4: Int\n val TEXTURE5: Int\n val
 TEXTURE6: Int\n val TEXTURE7: Int\n val TEXTURE8: Int\n val TEXTURE9: Int\n val
 TEXTURE10: Int\n val TEXTURE11: Int\n val TEXTURE12: Int\n val TEXTURE13: Int\n val
 TEXTURE14: Int\n val TEXTURE15: Int\n val TEXTURE16: Int\n val TEXTURE17:
 Int\n val TEXTURE18: Int\n val TEXTURE19: Int\n val TEXTURE20: Int\n val TEXTURE21:
 Int\n val TEXTURE22: Int\n val TEXTURE23: Int\n val TEXTURE24: Int\n val TEXTURE25:
 Int\n val TEXTURE26: Int\n val TEXTURE27: Int\n val TEXTURE28: Int\n val TEXTURE29:
 Int\n val TEXTURE30: Int\n val TEXTURE31: Int\n val ACTIVE_TEXTURE: Int\n val
 REPEAT: Int\n val CLAMP_TO_EDGE: Int\n val MIRRORED_REPEAT: Int\n val FLOAT_VEC2:
 Int\n val FLOAT_VEC3: Int\n val FLOAT_VEC4: Int\n val INT_VEC2: Int\n val INT_VEC3:
 Int\n val INT_VEC4: Int\n val BOOL: Int\n val BOOL_VEC2: Int\n val BOOL_VEC3: Int\n
 val BOOL_VEC4: Int\n val FLOAT_MAT2: Int\n val FLOAT_MAT3: Int\n val FLOAT_MAT4: Int\n
 val SAMPLER_2D: Int\n val SAMPLER_CUBE: Int\n val VERTEX_ATTRIB_ARRAY_ENABLED:
 Int\n
 val VERTEX_ATTRIB_ARRAY_SIZE: Int\n val VERTEX_ATTRIB_ARRAY_STRIDE: Int\n val
 VERTEX_ATTRIB_ARRAY_TYPE: Int\n val VERTEX_ATTRIB_ARRAY_NORMALIZED: Int\n val
 VERTEX_ATTRIB_ARRAY_POINTER: Int\n val VERTEX_ATTRIB_ARRAY_BUFFER_BINDING: Int\n
 val IMPLEMENTATION_COLOR_READ_TYPE: Int\n val
 IMPLEMENTATION_COLOR_READ_FORMAT: Int\n val COMPILE_STATUS: Int\n val
 LOW_FLOAT: Int\n val MEDIUM_FLOAT: Int\n val HIGH_FLOAT: Int\n val LOW_INT: Int\n
 val MEDIUM_INT: Int\n val HIGH_INT: Int\n val FRAMEBUFFER: Int\n val RENDERBUFFER:
 Int\n val RGBA4: Int\n val RGB5_A1: Int\n val RGB565: Int\n val DEPTH_COMPONENT16:
 Int\n val STENCIL_INDEX: Int\n val STENCIL_INDEX8: Int\n val DEPTH_STENCIL: Int\n val
 RENDERBUFFER_WIDTH: Int\n val RENDERBUFFER_HEIGHT: Int\n val
 RENDERBUFFER_INTERNAL_FORMAT: Int\n val RENDERBUFFER_RED_SIZE:
 Int\n val RENDERBUFFER_GREEN_SIZE: Int\n val RENDERBUFFER_BLUE_SIZE: Int\n val
 RENDERBUFFER_ALPHA_SIZE: Int\n val RENDERBUFFER_DEPTH_SIZE: Int\n val
 RENDERBUFFER_STENCIL_SIZE: Int\n val FRAMEBUFFER_ATTACHMENT_OBJECT_TYPE: Int\n
 val FRAMEBUFFER_ATTACHMENT_OBJECT_NAME: Int\n val
 FRAMEBUFFER_ATTACHMENT_TEXTURE_LEVEL: Int\n val
 FRAMEBUFFER_ATTACHMENT_TEXTURE_CUBE_MAP_FACE: Int\n val COLOR_ATTACHMENT0:
 Int\n val DEPTH_ATTACHMENT: Int\n val STENCIL_ATTACHMENT: Int\n val
 DEPTH_STENCIL_ATTACHMENT: Int\n val NONE: Int\n val FRAMEBUFFER_COMPLETE: Int\n
 val FRAMEBUFFER_INCOMPLETE_ATTACHMENT: Int\n val
 FRAMEBUFFER_INCOMPLETE_MISSING_ATTACHMENT: Int\n val
 FRAMEBUFFER_INCOMPLETE_DIMENSIONS: Int\n val FRAMEBUFFER_UNSUPPORTED: Int\n

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val FRAMEBUFFER_BINDING: Int\n    val RENDERBUFFER_BINDING: Int\n    val
MAX_RENDERBUFFER_SIZE: Int\n    val INVALID_FRAMEBUFFER_OPERATION:
Int\n    val UNPACK_FLIP_Y_WEBGL: Int\n    val UNPACK_PREMULTIPLY_ALPHA_WEBGL: Int\n
val CONTEXT_LOST_WEBGL: Int\n    val UNPACK_COLORSPACE_CONVERSION_WEBGL: Int\n
val BROWSER_DEFAULT_WEBGL: Int\n }}\n\n/**\n * Exposes the JavaScript
[WebGLRenderingContext](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderingContext) to Kotlin\n
*\npublic external abstract class WebGLRenderingContext : WebGLRenderingContextBase, RenderingContext {\n
companion object {\n    val DEPTH_BUFFER_BIT: Int\n    val STENCIL_BUFFER_BIT: Int\n    val
COLOR_BUFFER_BIT: Int\n    val POINTS: Int\n    val LINES: Int\n    val LINE_LOOP: Int\n    val
LINE_STRIP: Int\n    val TRIANGLES: Int\n    val TRIANGLE_STRIP: Int\n    val TRIANGLE_FAN:
Int\n    val ZERO: Int\n    val ONE: Int\n    val SRC_COLOR: Int\n    val ONE_MINUS_SRC_COLOR:
Int\n    val SRC_ALPHA: Int\n    val ONE_MINUS_SRC_ALPHA:
Int\n    val DST_ALPHA: Int\n    val ONE_MINUS_DST_ALPHA: Int\n    val DST_COLOR: Int\n    val
ONE_MINUS_DST_COLOR: Int\n    val SRC_ALPHA_SATURATE: Int\n    val FUNC_ADD: Int\n    val
BLEND_EQUATION: Int\n    val BLEND_EQUATION_RGB: Int\n    val BLEND_EQUATION_ALPHA:
Int\n    val FUNC_SUBTRACT: Int\n    val FUNC_REVERSE_SUBTRACT: Int\n    val
BLEND_DST_RGB: Int\n    val BLEND_SRC_RGB: Int\n    val BLEND_DST_ALPHA: Int\n    val
BLEND_SRC_ALPHA: Int\n    val CONSTANT_COLOR: Int\n    val ONE_MINUS_CONSTANT_COLOR:
Int\n    val CONSTANT_ALPHA: Int\n    val ONE_MINUS_CONSTANT_ALPHA: Int\n    val
BLEND_COLOR: Int\n    val ARRAY_BUFFER: Int\n    val ELEMENT_ARRAY_BUFFER: Int\n    val
ARRAY_BUFFER_BINDING: Int\n    val ELEMENT_ARRAY_BUFFER_BINDING: Int\n    val
STREAM_DRAW: Int\n    val STATIC_DRAW: Int\n    val DYNAMIC_DRAW: Int\n    val
BUFFER_SIZE: Int\n    val BUFFER_USAGE:
Int\n    val CURRENT_VERTEX_ATTRIB: Int\n    val FRONT: Int\n    val BACK: Int\n    val
FRONT_AND_BACK: Int\n    val CULL_FACE: Int\n    val BLEND: Int\n    val DITHER: Int\n    val
STENCIL_TEST: Int\n    val DEPTH_TEST: Int\n    val SCISSOR_TEST: Int\n    val
POLYGON_OFFSET_FILL: Int\n    val SAMPLE_ALPHA_TO_COVERAGE: Int\n    val
SAMPLE_COVERAGE: Int\n    val NO_ERROR: Int\n    val INVALID_ENUM: Int\n    val
INVALID_VALUE: Int\n    val INVALID_OPERATION: Int\n    val OUT_OF_MEMORY: Int\n    val CW:
Int\n    val CCW: Int\n    val LINE_WIDTH: Int\n    val ALIASED_POINT_SIZE_RANGE: Int\n    val
ALIASED_LINE_WIDTH_RANGE: Int\n    val CULL_FACE_MODE: Int\n    val FRONT_FACE: Int\n
val DEPTH_RANGE: Int\n    val DEPTH_WRITEMASK: Int\n    val DEPTH_CLEAR_VALUE: Int\n    val
DEPTH_FUNC: Int\n    val STENCIL_CLEAR_VALUE: Int\n    val STENCIL_FUNC: Int\n    val
STENCIL_FAIL:
Int\n    val STENCIL_PASS_DEPTH_FAIL: Int\n    val STENCIL_PASS_DEPTH_PASS: Int\n    val
STENCIL_REF: Int\n    val STENCIL_VALUE_MASK: Int\n    val STENCIL_WRITEMASK: Int\n    val
STENCIL_BACK_FUNC: Int\n    val STENCIL_BACK_FAIL: Int\n    val
STENCIL_BACK_PASS_DEPTH_FAIL: Int\n    val STENCIL_BACK_PASS_DEPTH_PASS: Int\n    val
STENCIL_BACK_REF: Int\n    val STENCIL_BACK_VALUE_MASK: Int\n    val
STENCIL_BACK_WRITEMASK: Int\n    val VIEWPORT: Int\n    val SCISSOR_BOX: Int\n    val
COLOR_CLEAR_VALUE: Int\n    val COLOR_WRITEMASK: Int\n    val UNPACK_ALIGNMENT: Int\n
val PACK_ALIGNMENT: Int\n    val MAX_TEXTURE_SIZE: Int\n    val MAX_VIEWPORT_DIMS: Int\n
val SUBPIXEL_BITS: Int\n    val RED_BITS: Int\n    val GREEN_BITS: Int\n    val BLUE_BITS: Int\n
val ALPHA_BITS: Int\n    val DEPTH_BITS: Int\n    val STENCIL_BITS: Int\n    val
POLYGON_OFFSET_UNITS: Int\n
    val POLYGON_OFFSET_FACTOR: Int\n    val TEXTURE_BINDING_2D: Int\n    val
SAMPLE_BUFFERS: Int\n    val SAMPLES: Int\n    val SAMPLE_COVERAGE_VALUE: Int\n    val
SAMPLE_COVERAGE_INVERT: Int\n    val COMPRESSED_TEXTURE_FORMATS: Int\n    val

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DONT_CARE: Int\n val FASTEST: Int\n val NICEST: Int\n val GENERATE_MIPMAP_HINT: Int\n
 val BYTE: Int\n val UNSIGNED_BYTE: Int\n val SHORT: Int\n val UNSIGNED_SHORT: Int\n
 val INT: Int\n val UNSIGNED_INT: Int\n val FLOAT: Int\n val DEPTH_COMPONENT: Int\n
val ALPHA: Int\n val RGB: Int\n val RGBA: Int\n val LUMINANCE: Int\n val
LUMINANCE_ALPHA: Int\n val UNSIGNED_SHORT_4_4_4_4: Int\n val
UNSIGNED_SHORT_5_5_5_1: Int\n val UNSIGNED_SHORT_5_6_5: Int\n val
FRAGMENT_SHADER: Int\n val VERTEX_SHADER: Int\n val MAX_VERTEX_ATTRIBS: Int\n
val MAX_VERTEX_UNIFORM_VECTORS: Int\n
 val MAX_VARYING_VECTORS: Int\n val MAX_COMBINED_TEXTURE_IMAGE_UNITS: Int\n
val MAX_VERTEX_TEXTURE_IMAGE_UNITS: Int\n val MAX_TEXTURE_IMAGE_UNITS: Int\n val
MAX_FRAGMENT_UNIFORM_VECTORS: Int\n val SHADER_TYPE: Int\n val DELETE_STATUS:
Int\n val LINK_STATUS: Int\n val VALIDATE_STATUS: Int\n val ATTACHED_SHADERS: Int\n
 val ACTIVE_UNIFORMS: Int\n val ACTIVE_ATTRIBUTES: Int\n val
SHADING_LANGUAGE_VERSION: Int\n val CURRENT_PROGRAM: Int\n val NEVER: Int\n val
LESS: Int\n val EQUAL: Int\n val LEQUAL: Int\n val GREATER: Int\n val NOTEQUAL: Int\n
 val GEQUAL: Int\n val ALWAYS: Int\n val KEEP: Int\n val REPLACE: Int\n val INCR: Int\n
 val DECR: Int\n val INVERT: Int\n val INCR_WRAP: Int\n val DECR_WRAP: Int\n val
VENDOR: Int\n val RENDERER: Int\n val VERSION: Int\n val
NEAREST: Int\n val LINEAR: Int\n val NEAREST_MIPMAP_NEAREST: Int\n val
LINEAR_MIPMAP_NEAREST: Int\n val NEAREST_MIPMAP_LINEAR: Int\n val
LINEAR_MIPMAP_LINEAR: Int\n val TEXTURE_MAG_FILTER: Int\n val TEXTURE_MIN_FILTER:
Int\n val TEXTURE_WRAP_S: Int\n val TEXTURE_WRAP_T: Int\n val TEXTURE_2D: Int\n
val TEXTURE: Int\n val TEXTURE_CUBE_MAP: Int\n val TEXTURE_BINDING_CUBE_MAP: Int\n
 val TEXTURE_CUBE_MAP_POSITIVE_X: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_X: Int\n
val TEXTURE_CUBE_MAP_POSITIVE_Y: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Y: Int\n val
TEXTURE_CUBE_MAP_POSITIVE_Z: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Z: Int\n val
MAX_CUBE_MAP_TEXTURE_SIZE: Int\n val TEXTURE0: Int\n val TEXTURE1: Int\n val
TEXTURE2: Int\n val TEXTURE3: Int\n val TEXTURE4: Int\n val TEXTURE5: Int\n val
TEXTURE6: Int\n val TEXTURE7:
Int\n val TEXTURE8: Int\n val TEXTURE9: Int\n val TEXTURE10: Int\n val TEXTURE11:
Int\n val TEXTURE12: Int\n val TEXTURE13: Int\n val TEXTURE14: Int\n val TEXTURE15:
Int\n val TEXTURE16: Int\n val TEXTURE17: Int\n val TEXTURE18: Int\n val TEXTURE19:
Int\n val TEXTURE20: Int\n val TEXTURE21: Int\n val TEXTURE22: Int\n val TEXTURE23:
Int\n val TEXTURE24: Int\n val TEXTURE25: Int\n val TEXTURE26: Int\n val TEXTURE27:
Int\n val TEXTURE28: Int\n val TEXTURE29: Int\n val TEXTURE30: Int\n val TEXTURE31:
Int\n val ACTIVE_TEXTURE: Int\n val REPEAT: Int\n val CLAMP_TO_EDGE: Int\n val
MIRRORED_REPEAT: Int\n val FLOAT_VEC2: Int\n val FLOAT_VEC3: Int\n val FLOAT_VEC4:
Int\n val INT_VEC2: Int\n val INT_VEC3: Int\n val INT_VEC4: Int\n val BOOL: Int\n
 val BOOL_VEC2: Int\n val BOOL_VEC3: Int\n val BOOL_VEC4: Int\n val FLOAT_MAT2: Int\n
 val FLOAT_MAT3: Int\n val FLOAT_MAT4: Int\n val SAMPLER_2D: Int\n val
SAMPLER_CUBE: Int\n val VERTEX_ATTRIB_ARRAY_ENABLED: Int\n val
VERTEX_ATTRIB_ARRAY_SIZE: Int\n val VERTEX_ATTRIB_ARRAY_STRIDE: Int\n val
VERTEX_ATTRIB_ARRAY_TYPE: Int\n val VERTEX_ATTRIB_ARRAY_NORMALIZED: Int\n val
VERTEX_ATTRIB_ARRAY_POINTER: Int\n val VERTEX_ATTRIB_ARRAY_BUFFER_BINDING: Int\n
 val IMPLEMENTATION_COLOR_READ_TYPE: Int\n val
IMPLEMENTATION_COLOR_READ_FORMAT: Int\n val COMPILE_STATUS: Int\n val
LOW_FLOAT: Int\n val MEDIUM_FLOAT: Int\n val HIGH_FLOAT: Int\n val LOW_INT: Int\n
val MEDIUM_INT: Int\n val HIGH_INT: Int\n val FRAMEBUFFER: Int\n val RENDERBUFFER:

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Int\n    val RGBA4: Int\n    val RGB5_A1: Int\n    val RGB565: Int\n    val
DEPTH_COMPONENT16: Int\n    val STENCIL_INDEX: Int\n    val STENCIL_INDEX8: Int\n    val
DEPTH_STENCIL: Int\n    val RENDERBUFFER_WIDTH: Int\n    val RENDERBUFFER_HEIGHT: Int\n
    val RENDERBUFFER_INTERNAL_FORMAT: Int\n    val RENDERBUFFER_RED_SIZE: Int\n    val
RENDERBUFFER_GREEN_SIZE: Int\n    val RENDERBUFFER_BLUE_SIZE: Int\n    val
RENDERBUFFER_ALPHA_SIZE: Int\n    val RENDERBUFFER_DEPTH_SIZE: Int\n    val
RENDERBUFFER_STENCIL_SIZE: Int\n    val FRAMEBUFFER_ATTACHMENT_OBJECT_TYPE: Int\n
val FRAMEBUFFER_ATTACHMENT_OBJECT_NAME: Int\n    val
FRAMEBUFFER_ATTACHMENT_TEXTURE_LEVEL: Int\n    val
FRAMEBUFFER_ATTACHMENT_TEXTURE_CUBE_MAP_FACE: Int\n    val COLOR_ATTACHMENT0:
Int\n    val DEPTH_ATTACHMENT: Int\n    val STENCIL_ATTACHMENT: Int\n    val
DEPTH_STENCIL_ATTACHMENT: Int\n    val NONE: Int\n    val FRAMEBUFFER_COMPLETE: Int\n
val FRAMEBUFFER_INCOMPLETE_ATTACHMENT: Int\n    val
FRAMEBUFFER_INCOMPLETE_MISSING_ATTACHMENT:
Int\n    val FRAMEBUFFER_INCOMPLETE_DIMENSIONS: Int\n    val
FRAMEBUFFER_UNSUPPORTED: Int\n    val FRAMEBUFFER_BINDING: Int\n    val
RENDERBUFFER_BINDING: Int\n    val MAX_RENDERBUFFER_SIZE: Int\n    val
INVALID_FRAMEBUFFER_OPERATION: Int\n    val UNPACK_FLIP_Y_WEBGL: Int\n    val
UNPACK_PREMULTIPLY_ALPHA_WEBGL: Int\n    val CONTEXT_LOST_WEBGL: Int\n    val
UNPACK_COLORSPACE_CONVERSION_WEBGL: Int\n    val BROWSER_DEFAULT_WEBGL: Int\n
}\n}\n\n/**\n * Exposes the JavaScript
[WebGLContextEvent](https://developer.mozilla.org/en/docs/Web/API/WebGLContextEvent) to Kotlin\n
*/\npublic external open class WebGLContextEvent(type: String, eventInit: WebGLContextEventInit =
definedExternally) : Event {\n    open val statusMessage: String\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\npublic external
interface WebGLContextEventInit : EventInit {\n    var statusMessage: String? /* = "" */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
WebGLContextEventInit(statusMessage: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): WebGLContextEventInit {\n    val o = js("{}")\n    o["statusMessage"] =
statusMessage\n    o["bubbles"] = bubbles\n    o["cancelable"] = cancelable\n    o["composed"] = composed\n
return o\n}\n\n/**\n * Exposes the JavaScript
[ArrayBuffer](https://developer.mozilla.org/en/docs/Web/API/ArrayBuffer) to Kotlin\n
*/\npublic external open
class ArrayBuffer(length: Int) : BufferDataSource {\n    open val byteLength: Int\n    fun slice(begin: Int, end: Int =
definedExternally): ArrayBuffer\n\n    companion object {\n        fun isView(value: Any?): Boolean\n    }\n}\n\n/**\n
* Exposes the JavaScript [ArrayBufferView](https://developer.mozilla.org/en/docs/Web/API/ArrayBufferView) to
Kotlin\n
*/\npublic external interface ArrayBufferView : BufferDataSource {\n    val buffer: ArrayBuffer\n    val
byteOffset: Int\n    val byteLength: Int\n}\n\n/**\n * Exposes the JavaScript
[Int8Array](https://developer.mozilla.org/en/docs/Web/API/Int8Array) to Kotlin\n
*/\npublic external open class
Int8Array : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array: Int8Array)\n    constructor(array:
Array<Byte>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int =
definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n    override val byteOffset: Int\n
override val byteLength: Int\n    fun set(array: Int8Array, offset: Int = definedExternally)\n    fun set(array:
Array<Byte>, offset: Int = definedExternally)\n    fun subarray(start: Int, end: Int): Int8Array\n\n    companion
object {\n

```



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    val BYTES_PER_ELEMENT: Int\n    }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Int8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Int8Array.set(index: Int,
value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint8Array](https://developer.mozilla.org/en/docs/Web/API/Uint8Array) to Kotlin\n *\n\npublic external open class
Uint8Array : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array: Uint8Array)\n
constructor(array: Array<Byte>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n    override val byteOffset:
Int\n    override val byteLength: Int\n    fun set(array: Uint8Array, offset: Int = definedExternally)\n    fun
set(array: Array<Byte>, offset: Int = definedExternally)\n    fun subarray(start: Int, end: Int): Uint8Array\n\n
companion object {\n    val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Uint8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Uint8Array.set(index: Int,
value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint8ClampedArray](https://developer.mozilla.org/en/docs/Web/API/Uint8ClampedArray) to Kotlin\n *\n\npublic
external open class Uint8ClampedArray : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array:
Uint8ClampedArray)\n    constructor(array: Array<Byte>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n    open val length: Int\n    override val
buffer: ArrayBuffer\n    override val byteOffset: Int\n    override val byteLength: Int\n    fun set(array:
Uint8ClampedArray, offset: Int = definedExternally)\n    fun set(array: Array<Byte>, offset: Int =
definedExternally)\n    fun subarray(start: Int, end: Int): Uint8ClampedArray\n\n    companion object {\n    val
BYTES_PER_ELEMENT: Int\n    }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun
Uint8ClampedArray.get(index: Int): Byte = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun
Uint8ClampedArray.set(index: Int, value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Int16Array](https://developer.mozilla.org/en/docs/Web/API/Int16Array) to Kotlin\n *\n\npublic external open class
Int16Array : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array: Int16Array)\n
constructor(array:
Array<Short>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int =
definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n    override val byteOffset: Int\n
override val byteLength: Int\n    fun set(array: Int16Array, offset: Int = definedExternally)\n    fun set(array:
Array<Short>, offset: Int = definedExternally)\n    fun subarray(start: Int, end: Int): Int16Array\n\n    companion
object {\n    val BYTES_PER_ELEMENT: Int\n    }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Int16Array.get(index: Int):
Short = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Int16Array.set(index: Int,
value: Short) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint16Array](https://developer.mozilla.org/en/docs/Web/API/Uint16Array) to Kotlin\n *\n\npublic
external open class Uint16Array : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array:
Uint16Array)\n    constructor(array: Array<Short>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n
override val byteOffset: Int\n    override val byteLength: Int\n    fun set(array: Uint16Array, offset: Int =
definedExternally)\n    fun set(array: Array<Short>, offset: Int = definedExternally)\n    fun subarray(start: Int, end:
Int): Uint16Array\n\n    companion object {\n    val BYTES_PER_ELEMENT: Int\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Uint16Array.get(index: Int):
Short = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Uint16Array.set(index: Int,
value: Short) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript

```

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    }
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint16Array.get(index: Int): Short = asDynamic()[index]

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint16Array.set(index: Int, value: Short) { asDynamic()[index] = value }

/** Exposes the JavaScript [Int32Array](https://developer.mozilla.org/en/docs/Web/API/Int32Array) to Kotlin */
public external open class Int32Array : ArrayBufferView {
    constructor(length: Int)
    constructor(array: Int32Array)
    constructor(array: Array<Int>)
    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
    open val length: Int
    override val buffer: ArrayBuffer
    override val byteOffset: Int
    override val byteLength: Int
    fun set(array: Int32Array, offset: Int = definedExternally)
    fun set(array: Array<Int>, offset: Int = definedExternally)
    fun subarray(start: Int, end: Int): Int32Array

    companion object {
        val BYTES_PER_ELEMENT: Int
    }
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Int32Array.get(index: Int): Int = asDynamic()[index]

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Int32Array.set(index: Int, value: Int) { asDynamic()[index] = value }

/** Exposes the JavaScript [Uint32Array](https://developer.mozilla.org/en/docs/Web/API/Uint32Array) to Kotlin */
public external open class Uint32Array : ArrayBufferView {
    constructor(length: Int)
    constructor(array: Uint32Array)
    constructor(array: Array<Int>)
    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
    open val length: Int
    override val buffer: ArrayBuffer
    override val byteOffset: Int
    override val byteLength: Int
    fun set(array: Uint32Array, offset: Int = definedExternally)
    fun set(array: Array<Int>, offset: Int = definedExternally)
    fun subarray(start: Int, end: Int): Uint32Array

    companion object {
        val BYTES_PER_ELEMENT: Int
    }
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint32Array.get(index: Int): Int = asDynamic()[index]

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint32Array.set(index: Int, value: Int) { asDynamic()[index] = value }

/** Exposes the JavaScript [Float32Array](https://developer.mozilla.org/en/docs/Web/API/Float32Array) to Kotlin */
public external open class Float32Array : ArrayBufferView {
    constructor(length: Int)
    constructor(array: Float32Array)
    constructor(array: Array<Float>)
    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
    open val length: Int
    override val buffer: ArrayBuffer
    override val byteOffset: Int
    override val byteLength: Int
    fun set(array: Float32Array, offset: Int = definedExternally)
    fun set(array: Array<Float>, offset: Int = definedExternally)
    fun subarray(start: Int, end: Int): Float32Array

    companion object {
        val BYTES_PER_ELEMENT: Int
    }
}

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Float32Array.get(index: Int): Float = asDynamic()[index]

@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Float32Array.set(index: Int, value: Float) { asDynamic()[index] = value }

/** Exposes the JavaScript [Float64Array](https://developer.mozilla.org/en/docs/Web/API/Float64Array) to Kotlin */
public external open class Float64Array : ArrayBufferView {
    constructor(length: Int)
    constructor(array: Float64Array)
    constructor(array: Array<Double>)
    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
    open val length: Int
    override val buffer: ArrayBuffer
    override val byteOffset: Int
    override val byteLength: Int
    fun set(array: Float64Array, offset: Int = definedExternally)
    fun set(array: Array<Double>, offset: Int = definedExternally)
    fun subarray(start: Int, end: Int): Float64Array

    companion object {
        val BYTES_PER_ELEMENT: Int
    }
}

```


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for details\n\npackage org.w3c.dom.css\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\n\npublic external abstract class MediaList : ItemArrayLike<String> {\n    open var mediaText: String\n    fun appendMedium(medium: String)\n    fun deleteMedium(medium: String)\n    override fun item(index: Int): String?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun MediaList.get(index: Int): String? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [StyleSheet](https://developer.mozilla.org/en/docs/Web/API/StyleSheet) to Kotlin\n */\n\npublic external abstract class StyleSheet {\n    open val type: String\n    open val href: String?\n    open val ownerNode: UnionElementOrProcessingInstruction?\n    open val parentStyleSheet: StyleSheet?\n    open val title: String?\n    open val media: MediaList\n    open var disabled: Boolean\n}\n\n/**\n * Exposes the JavaScript [CSSStyleSheet](https://developer.mozilla.org/en/docs/Web/API/CSSStyleSheet) to Kotlin\n */\n\npublic external abstract class CSSStyleSheet : StyleSheet {\n    open val ownerRule: CSSRule?\n    open val cssRules: CSSRuleList\n    fun insertRule(rule: String, index: Int): Int\n    fun deleteRule(index: Int)\n}\n\n/**\n * Exposes the JavaScript [StyleSheetList](https://developer.mozilla.org/en/docs/Web/API/StyleSheetList) to Kotlin\n */\n\npublic external abstract class StyleSheetList : ItemArrayLike<StyleSheet> {\n    override fun item(index: Int): StyleSheet?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun StyleSheetList.get(index: Int): StyleSheet? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [LinkStyle](https://developer.mozilla.org/en/docs/Web/API/LinkStyle) to Kotlin\n */\n\npublic external interface LinkStyle {\n    val sheet: StyleSheet?\n    get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript [CSSRuleList](https://developer.mozilla.org/en/docs/Web/API/CSSRuleList) to Kotlin\n */\n\npublic external abstract class CSSRuleList : ItemArrayLike<CSSRule> {\n    override fun item(index: Int): CSSRule?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun CSSRuleList.get(index: Int): CSSRule? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [CSSRule](https://developer.mozilla.org/en/docs/Web/API/CSSRule) to Kotlin\n */\n\npublic external abstract class CSSRule {\n    open val type: Short\n    open var cssText: String\n    open val parentRule: CSSRule?\n    open val parentStyleSheet: CSSStyleSheet?\n\n    companion object {\n        val STYLE_RULE: Short\n        val CHARSET_RULE: Short\n        val IMPORT_RULE: Short\n        val MEDIA_RULE: Short\n        val FONT_FACE_RULE: Short\n        val PAGE_RULE: Short\n        val MARGIN_RULE: Short\n        val NAMESPACE_RULE: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [CSSStyleRule](https://developer.mozilla.org/en/docs/Web/API/CSSStyleRule) to Kotlin\n */\n\npublic external abstract class CSSStyleRule : CSSRule {\n    open var selectorText: String\n    open val style: CSSStyleDeclaration\n\n    companion object {\n        val STYLE_RULE: Short\n        val CHARSET_RULE: Short\n        val IMPORT_RULE: Short\n        val MEDIA_RULE: Short\n        val FONT_FACE_RULE: Short\n        val PAGE_RULE: Short\n        val MARGIN_RULE: Short\n        val NAMESPACE_RULE: Short\n    }\n}\n\npublic external abstract class CSSImportRule : CSSRule {\n    open val href: String\n    open val media: MediaList\n    open val styleSheet: CSSStyleSheet\n\n    companion object {\n        val STYLE_RULE: Short\n        val CHARSET_RULE: Short\n        val IMPORT_RULE: Short\n        val MEDIA_RULE: Short\n        val FONT_FACE_RULE: Short\n        val PAGE_RULE: Short\n        val MARGIN_RULE: Short\n        val NAMESPACE_RULE: Short\n    }\n}\n\n/**\n * Exposes the JavaScript [CSSGroupingRule](https://developer.mozilla.org/en/docs/Web/API/CSSGroupingRule) to Kotlin\n */\n\npublic external abstract class CSSGroupingRule : CSSRule {\n    open val cssRules: CSSRuleList\n    fun insertRule(rule: String, index: Int): Int\n    fun deleteRule(index: Int)\n\n    companion object {\n        val STYLE_RULE: Short\n        val CHARSET_RULE: Short\n        val IMPORT_RULE: Short\n        val

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MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n    val PAGE_RULE: Short\n    val
MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n } \n \n /** \n * Exposes the JavaScript
[CSSMediaRule](https://developer.mozilla.org/en/docs/Web/API/CSSMediaRule) to Kotlin \n * \n public external
abstract class CSSMediaRule : CSSGroupingRule { \n    open val media: MediaList \n \n    companion object { \n
val STYLE_RULE: Short\n    val CHARSET_RULE: Short\n    val IMPORT_RULE: Short\n    val
MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n    val PAGE_RULE: Short\n
    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n } \n \n \n /** \n * Exposes the JavaScript
[CSSPageRule](https://developer.mozilla.org/en/docs/Web/API/CSSPageRule) to Kotlin \n * \n public external
abstract class CSSPageRule : CSSGroupingRule { \n    open var selectorText: String \n    open val style:
CSSStyleDeclaration \n \n    companion object { \n    val STYLE_RULE: Short\n    val CHARSET_RULE:
Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n
    val PAGE_RULE: Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n
} \n \n \n public external abstract class CSSMarginRule : CSSRule { \n    open val name: String \n    open val style:
CSSStyleDeclaration \n \n    companion object { \n    val STYLE_RULE: Short\n    val CHARSET_RULE:
Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n
    val PAGE_RULE: Short\n    val MARGIN_RULE:
Short\n    val NAMESPACE_RULE: Short\n } \n \n \n /** \n * Exposes the JavaScript
[CSSNamespaceRule](https://developer.mozilla.org/en/docs/Web/API/CSSNamespaceRule) to Kotlin \n * \n public
external abstract class CSSNamespaceRule : CSSRule { \n    open val namespaceURI: String \n    open val prefix:
String \n \n    companion object { \n    val STYLE_RULE: Short\n    val CHARSET_RULE: Short\n    val
IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n    val
PAGE_RULE: Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n } \n \n \n /** \n *
Exposes the JavaScript
[CSSStyleDeclaration](https://developer.mozilla.org/en/docs/Web/API/CSSStyleDeclaration) to Kotlin \n * \n public
external abstract class CSSStyleDeclaration : ItemArrayLike<String> { \n    open var cssText: String \n    open val
parentRule: CSSRule? \n    open var cssFloat: String \n    open var alignContent: String \n    open var alignItems:
String \n    open
var alignSelf: String \n    open var animation: String \n    open var animationDelay: String \n    open var
animationDirection: String \n    open var animationDuration: String \n    open var animationFillMode: String \n    open
var animationIterationCount: String \n    open var animationName: String \n    open var animationPlayState: String \n
open var animationTimingFunction: String \n    open var backfaceVisibility: String \n    open var background:
String \n    open var backgroundAttachment: String \n    open var backgroundClip: String \n    open var
backgroundColor: String \n    open var backgroundImage: String \n    open var backgroundOrigin: String \n    open var
backgroundPosition: String \n    open var backgroundRepeat: String \n    open var backgroundSize: String \n    open
var border: String \n    open var borderBottom: String \n    open var borderBottomColor: String \n    open var
borderBottomLeftRadius: String \n    open var borderBottomRightRadius: String \n    open var borderBottomStyle:
String \n
    open var borderBottomWidth: String \n    open var borderCollapse: String \n    open var borderColor: String \n
open var borderImage: String \n    open var borderImageOutset: String \n    open var borderImageRepeat: String \n
open var borderImageSlice: String \n    open var borderImageSource: String \n    open var borderImageWidth:
String \n    open var borderLeft: String \n    open var borderLeftColor: String \n    open var borderLeftStyle: String \n
open var borderLeftWidth: String \n    open var borderRadius: String \n    open var borderRight: String \n    open var
borderRightColor: String \n    open var borderRightStyle: String \n    open var borderRightWidth: String \n    open var
borderSpacing: String \n    open var borderStyle: String \n    open var borderTop: String \n    open var
borderTopColor: String \n    open var borderTopLeftRadius: String \n    open var borderTopRightRadius: String \n
open var borderTopStyle: String \n    open var borderTopWidth: String \n    open var borderWidth:
String \n    open var bottom: String \n    open var boxDecorationBreak: String \n    open var boxShadow: String \n
open var boxSizing: String \n    open var breakAfter: String \n    open var breakBefore: String \n    open var

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breakInside: String\n open var captionSide: String\n open var clear: String\n open var clip: String\n open var color: String\n open var columnCount: String\n open var columnFill: String\n open var columnGap: String\n open var columnRule: String\n open var columnRuleColor: String\n open var columnRuleStyle: String\n open var columnRuleWidth: String\n open var columnSpan: String\n open var columnWidth: String\n open var columns: String\n open var content: String\n open var counterIncrement: String\n open var counterReset: String\n open var cursor: String\n open var direction: String\n open var display: String\n open var emptyCells: String\n open var filter: String\n open var flex: String\n open var flexBasis: String\n open var flexDirection: String\n open var flexFlow: String\n open var flexGrow: String\n open var flexShrink: String\n open var flexWrap: String\n open var font: String\n open var fontFamily: String\n open var fontFeatureSettings: String\n open var fontKerning: String\n open var fontLanguageOverride: String\n open var fontSize: String\n open var fontSizeAdjust: String\n open var fontStretch: String\n open var fontStyle: String\n open var fontSynthesis: String\n open var fontVariant: String\n open var fontVariantAlternates: String\n open var fontVariantCaps: String\n open var fontVariantEastAsian: String\n open var fontVariantLigatures: String\n open var fontVariantNumeric: String\n open var fontVariantPosition: String\n open var fontWeight: String\n open var hangingPunctuation: String\n open var height: String\n open var hyphens: String\n open var imageOrientation: String\n open var imageRendering: String\n open var imageResolution: String\n open var imeMode: String\n open var justifyContent: String\n open var left: String\n open var letterSpacing: String\n open var lineBreak: String\n open var lineHeight: String\n open var listStyle: String\n open var listStyleImage: String\n open var listStylePosition: String\n open var listStyleType: String\n open var margin: String\n open var marginBottom: String\n open var marginLeft: String\n open var marginRight: String\n open var marginTop: String\n open var mark: String\n open var markAfter: String\n open var markBefore: String\n open var marks: String\n open var marqueeDirection: String\n open var marqueePlayCount: String\n open var marqueeSpeed: String\n open var marqueeStyle: String\n open var mask: String\n open var maskType: String\n open var maxHeight: String\n open var maxWidth: String\n open var minHeight: String\n open var minWidth: String\n open var navDown: String\n open var navIndex: String\n open var navLeft: String\n open var navRight: String\n open var navUp: String\n open var objectFit: String\n open var objectPosition: String\n open var opacity: String\n open var order: String\n open var orphans: String\n open var outline: String\n open var outlineColor: String\n open var outlineOffset: String\n open var outlineStyle: String\n open var outlineWidth: String\n open var overflowWrap: String\n open var overflowX: String\n open var overflowY: String\n open var padding: String\n open var paddingBottom: String\n open var paddingLeft: String\n open var paddingRight: String\n open var paddingTop: String\n open var pageBreakAfter: String\n open var pageBreakBefore: String\n open var pageBreakInside: String\n open var perspective: String\n open var perspectiveOrigin: String\n open var phonemes: String\n open var position: String\n open var quotes: String\n open var resize: String\n open var rest: String\n open var restAfter: String\n open var restBefore: String\n open var right: String\n open var tabSize: String\n open var tableLayout: String\n open var textAlign: String\n open var textAlignLast: String\n open var textCombineUpright: String\n open var textDecoration: String\n open var textDecorationColor: String\n open var textDecorationLine: String\n open var textDecorationStyle: String\n open var textIndent: String\n open var textJustify: String\n open var textOrientation: String\n open var textOverflow: String\n open var textShadow: String\n open var textTransform: String\n open var textUnderlinePosition: String\n open var top: String\n open var transform: String\n open var transformOrigin: String\n open var transformStyle: String\n open var transition: String\n open var transitionDelay: String\n open var transitionDuration: String\n open var transitionProperty: String\n open var transitionTimingFunction: String\n open var unicodeBidi: String\n open var verticalAlign: String\n open var visibility: String\n open var voiceBalance: String\n open var voiceDuration: String\n open var voicePitch: String\n open var voicePitchRange: String\n open var voiceRate: String\n open var voiceStress: String\n open var voiceVolume: String\n open var whiteSpace: String\n open var widows: String\n open var width: String\n open var

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wordBreak: String\n  open var wordSpacing: String\n  open var wordWrap: String\n  open var writingMode:
String\n  open var zIndex: String\n  open var _dashed_attribute: String\n  open var _camel_cased_attribute:
String\n  open var _webkit_cased_attribute: String\n  fun getProperty(property: String): String\n  fun
getPropertyPriority(property: String): String\n  fun setProperty(property: String, value: String,
priority: String = definedExternally)\n  fun setPropertyValue(property: String, value: String)\n  fun
setPropertyPriority(property: String, priority: String)\n  fun removeProperty(property: String): String\n  override
fun item(index: Int): String\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
CSSStyleDeclaration.get(index: Int): String? = asDynamic()[index]\n\npublic external interface
ElementCSSInlineStyle {\n  val style: CSSStyleDeclaration\n}\n\n/**\n * Exposes the JavaScript
[CSS](https://developer.mozilla.org/en/docs/Web/API/CSS) to Kotlin\n */\npublic external abstract class CSS {\n
companion object {\n  fun escape(ident: String): String\n  }\n}\n\npublic external interface
UnionElementOrProcessingInstruction, "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in
the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.encryptedmedia\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes the JavaScript
[MediaKeySystemConfiguration](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemConfiguration)
to Kotlin\n */\npublic external interface MediaKeySystemConfiguration {\n  var label: String? /* = "" */\n
get() = definedExternally\n  set(value) = definedExternally\n  var initDataTypes: Array<String>? /* = arrayOf()
*/\n  get() = definedExternally\n  set(value) = definedExternally\n  var audioCapabilities:
Array<MediaKeySystemMediaCapability>? /* = arrayOf() */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var videoCapabilities: Array<MediaKeySystemMediaCapability>? /* = arrayOf() */\n
get() = definedExternally\n
set(value) = definedExternally\n  var distinctiveIdentifier: MediaKeysRequirement? /* =
MediaKeysRequirement.OPTIONAL */\n  get() = definedExternally\n  set(value) = definedExternally\n
var persistentState: MediaKeysRequirement? /* = MediaKeysRequirement.OPTIONAL */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var sessionTypes: Array<String>?\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MediaKeySystemConfiguration(label:
String? = "", initDataTypes: Array<String>? = arrayOf(), audioCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), videoCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), distinctiveIdentifier: MediaKeysRequirement? =
MediaKeysRequirement.OPTIONAL, persistentState: MediaKeysRequirement? =
MediaKeysRequirement.OPTIONAL, sessionTypes: Array<String>?
= undefined): MediaKeySystemConfiguration {\n  val o = js("{}")\n  o["label"] = label\n
o["initDataTypes"] = initDataTypes\n  o["audioCapabilities"] = audioCapabilities\n  o["videoCapabilities"] =
videoCapabilities\n  o["distinctiveIdentifier"] = distinctiveIdentifier\n  o["persistentState"] = persistentState\n
o["sessionTypes"] = sessionTypes\n  return o\n}\n\npublic external interface MediaKeySystemMediaCapability
{\n  var contentType: String? /* = "" */\n  get() = definedExternally\n  set(value) = definedExternally\n
var robustness: String? /* = "" */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaKeySystemMediaCapability(contentType: String? = "", robustness: String? = ""):
MediaKeySystemMediaCapability {\n  val o = js("{}")\n  o["contentType"] = contentType\n
o["robustness"] = robustness\n  return o\n}\n\n/**\n * Exposes the JavaScript
[MediaKeySystemAccess](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemAccess) to Kotlin\n
*/\npublic external abstract class MediaKeySystemAccess {\n  open val keySystem: String\n  fun

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getConfiguration(): MediaKeySystemConfiguration\n fun createMediaKeys(): Promise<MediaKeys>\n}\n\n/**\n
* Exposes the JavaScript [MediaKeys](https://developer.mozilla.org/en/docs/Web/API/MediaKeys) to Kotlin\n
*\n\npublic external abstract class MediaKeys {\n fun createSession(sessionType: MediaKeySessionType =
definedExternally): MediaKeySession\n fun setServerCertificate(serverCertificate: dynamic):
Promise<Boolean>\n}\n\n/**\n
* Exposes the JavaScript
[MediaKeySession](https://developer.mozilla.org/en/docs/Web/API/MediaKeySession) to Kotlin\n *\n\npublic
external abstract class MediaKeySession : EventTarget {\n open val sessionId: String\n open val expiration:
Double\n open val closed:
Promise<Unit>\n open val keyStatuses: MediaKeyStatusMap\n open var onkeystatuseschange: ((Event) ->
dynamic)?\n open var onmessage: ((MessageEvent) -> dynamic)?\n fun generateRequest(initDataType: String,
initData: dynamic): Promise<Unit>\n fun load(sessionId: String): Promise<Boolean>\n fun update(response:
dynamic): Promise<Unit>\n fun close(): Promise<Unit>\n fun remove(): Promise<Unit>\n}\n\n/**\n
* Exposes the JavaScript
the JavaScript [MediaKeyStatusMap](https://developer.mozilla.org/en/docs/Web/API/MediaKeyStatusMap) to
Kotlin\n *\n\npublic external abstract class MediaKeyStatusMap {\n open val size: Int\n fun has(keyId: dynamic):
Boolean\n fun get(keyId: dynamic): Any?\n}\n\n/**\n
* Exposes the JavaScript
[MediaKeyMessageEvent](https://developer.mozilla.org/en/docs/Web/API/MediaKeyMessageEvent) to Kotlin\n
*\n\npublic external open class MediaKeyMessageEvent(type: String, eventInitDict: MediaKeyMessageEventInit) :
Event {\n open val messageType: MediaKeyMessageType\n
open val message: ArrayBuffer\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface MediaKeyMessageEventInit : EventInit {\n var messageType:
MediaKeyMessageType\n var message: ArrayBuffer?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun
MediaKeyMessageEventInit(messageType: MediaKeyMessageType?, message: ArrayBuffer?, bubbles: Boolean? =
false, cancelable: Boolean? = false, composed: Boolean? = false): MediaKeyMessageEventInit {\n val o =
js(\"({})\")\n o[\"messageType\"] = messageType\n o[\"message\"] = message\n o[\"bubbles\"] = bubbles\n
o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n return o\n}\n\n\npublic external open class
MediaEncryptedEvent(type: String, eventInitDict: MediaEncryptedEventInit = definedExternally) : Event {\n
open val initDataType: String\n open val initData: ArrayBuffer?\n\n companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE:
Short\n }\n}\n\npublic external interface MediaEncryptedEventInit : EventInit {\n var initDataType: String? /* =
\"\" */\n get() = definedExternally\n set(value) = definedExternally\n var initData: ArrayBuffer? /* = null
*/\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun
MediaEncryptedEventInit(initDataType: String? = \"\", initData: ArrayBuffer? = null, bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): MediaEncryptedEventInit {\n val o = js(\"({})\")\n
o[\"initDataType\"] = initDataType\n o[\"initData\"] = initData\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"]
=
cancelable\n o[\"composed\"] = composed\n return o\n}\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface MediaKeysRequirement {\n companion object\n}\n\n\npublic inline val
MediaKeysRequirement.Companion.REQUIRED: MediaKeysRequirement get() =
\"required\".asDynamic().unsafeCast<MediaKeysRequirement>()\n\n\npublic inline val
MediaKeysRequirement.Companion.OPTIONAL: MediaKeysRequirement get() =
\"optional\".asDynamic().unsafeCast<MediaKeysRequirement>()\n\n\npublic inline val
MediaKeysRequirement.Companion.NOT_ALLOWED: MediaKeysRequirement get() = \"not-
allowed\".asDynamic().unsafeCast<MediaKeysRequirement>()\n\n/* please, don't implement this interface!

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*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaKeySessionType {\n  companion object\n}\n\npublic inline val
MediaKeySessionType.Companion.TEMPORARY: MediaKeySessionType get() =
"temporary".asDynamic().unsafeCast<MediaKeySessionType>()\n\npublic
inline val MediaKeySessionType.Companion.PERSISTENT_LICENSE: MediaKeySessionType get() =
"persistent-license".asDynamic().unsafeCast<MediaKeySessionType>()\n\n/* please, don't implement this
interface! */\n*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface MediaKeyStatus {\n  companion object\n}\n\npublic inline val
MediaKeyStatus.Companion.USABLE: MediaKeyStatus get() =
"usable".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.EXPIRED: MediaKeyStatus get() =
"expired".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.RELEASED: MediaKeyStatus get() =
"released".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.OUTPUT_RESTRICTED: MediaKeyStatus get() = "output-
restricted".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.OUTPUT_DOWNSCALED:
MediaKeyStatus get() = "output-downscaled".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.STATUS_PENDING: MediaKeyStatus get() = "status-
pending".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.INTERNAL_ERROR: MediaKeyStatus get() = "internal-
error".asDynamic().unsafeCast<MediaKeyStatus>()\n\n/* please, don't implement this interface!
*/\n*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaKeyMessageType {\n  companion object\n}\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_REQUEST: MediaKeyMessageType get() = "license-
request".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RENEWAL: MediaKeyMessageType get() = "license-
renewal".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RELEASE: MediaKeyMessageType
get() = "license-release".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.INDIVIDUALIZATION_REQUEST: MediaKeyMessageType get() =
"individualization-request".asDynamic().unsafeCast<MediaKeyMessageType>())"/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage
org.w3c.dom.events\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\n\n/**\n * Exposes
the JavaScript [UIEvent](https://developer.mozilla.org/en/docs/Web/API/UIEvent) to Kotlin\n */\n\npublic external
open class UIEvent(type: String, eventInitDict: UIEventInit = definedExternally) : Event {\n  open val view:
Window?\n  open val detail: Int\n\n  companion object {\n    val NONE: Short\n
val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface UIEventInit : EventInit {\n  var view: Window? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var detail: Int? /* = 0 */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun UIEventInit(view: Window? = null,
detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): UIEventInit
{\n  val o = js("{}")\n  o["view"] = view\n  o["detail"] = detail\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[FocusEvent](https://developer.mozilla.org/en/docs/Web/API/FocusEvent) to Kotlin\n */\n\npublic external open class

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FocusEvent(type:
String, eventInitDict: FocusEventInit = definedExternally) : UIEvent {\n  open val relatedTarget:
EventTarget?\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n\n\npublic external interface FocusEventInit :
UIEventInit {\n  var relatedTarget: EventTarget? /* = null */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun FocusEventInit(relatedTarget:
EventTarget? = null, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? =
false, composed: Boolean? = false): FocusEventInit {\n  val o = js(\\"({})\")\n  o[\"relatedTarget\"] =
relatedTarget\n  o[\"view\"] = view\n  o[\"detail\"] = detail\n  o[\"bubbles\"] = bubbles\n  o[\"cancelable\"] =
cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript [MouseEvent](https://developer.mozilla.org/en/docs/Web/API/MouseEvent) to Kotlin\n */\n\npublic external open class MouseEvent(type: String, eventInitDict: MouseEventInit = definedExternally) :
UIEvent, UnionElementOrMouseEvent {\n  open val screenX: Int\n  open val screenY: Int\n  open val clientX:
Int\n  open val clientY: Int\n  open val ctrlKey: Boolean\n  open val shiftKey: Boolean\n  open val altKey:
Boolean\n  open val metaKey: Boolean\n  open val button: Short\n  open val buttons: Short\n  open val
relatedTarget: EventTarget?\n  open val region: String?\n  open val pageX: Double\n  open val pageY: Double\n
open val x: Double\n  open val y: Double\n  open val offsetX: Double\n  open val offsetY: Double\n  fun
getModifierState(keyArg: String): Boolean\n\n  companion object {\n    val NONE: Short\n    val
CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n\n\npublic
external interface MouseEventInit : EventModifierInit {\n  var screenX: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n  var screenY: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n  var clientX: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n  var clientY: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n  var button: Short? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n  var buttons: Short? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n  var relatedTarget: EventTarget? /* = null */\n    get()
= definedExternally\n    set(value) = definedExternally\n  var region: String? /* = null */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MouseEventInit(screenX: Int? = 0,
screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget:
EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean?
= false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false,
modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): MouseEventInit {\n  val o =
js(\\"({})\")\n  o[\"screenX\"] = screenX\n  o[\"screenY\"] = screenY\n  o[\"clientX\"] = clientX\n  o[\"clientY\"]
= clientY\n  o[\"button\"] = button\n  o[\"buttons\"] = buttons\n  o[\"relatedTarget\"] = relatedTarget\n  o[\"region\"] =
region\n  o[\"ctrlKey\"] = ctrlKey\n  o[\"shiftKey\"] = shiftKey\n  o[\"altKey\"] = altKey\n  o[\"metaKey\"] =
metaKey\n  o[\"modifierAltGraph\"] = modifierAltGraph\n  o[\"modifierCapsLock\"] = modifierCapsLock\n  o[\"modifierFn\"]
= modifierFn\n  o[\"modifierFnLock\"] = modifierFnLock\n  o[\"modifierHyper\"] =
modifierHyper\n  o[\"modifierNumLock\"] = modifierNumLock\n  o[\"modifierScrollLock\"] =
modifierScrollLock\n  o[\"modifierSuper\"] = modifierSuper\n  o[\"modifierSymbol\"] = modifierSymbol\n  o[\"modifierSymbolLock\"]
= modifierSymbolLock\n  o[\"view\"] = view\n  o[\"detail\"] = detail\n  o[\"bubbles\"] = bubbles\n  o[\"cancelable\"]
= cancelable\n  o[\"composed\"] = composed\n  return

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o\n}\n\npublic external interface EventModifierInit : UIEventInit {\n  var ctrlKey: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var shiftKey: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var altKey: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var metaKey: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierAltGraph: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierCapsLock: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierFn: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierFnLock: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierHyper: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierNumLock: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierScrollLock: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierSuper: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierSymbol: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var modifierSymbolLock: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun EventModifierInit(ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): EventModifierInit {\n  val o = js(\"({})\")\n  o[\"ctrlKey\"] = ctrlKey\n  o[\"shiftKey\"] = shiftKey\n  o[\"altKey\"] = altKey\n  o[\"metaKey\"] = metaKey\n  o[\"modifierAltGraph\"] = modifierAltGraph\n  o[\"modifierCapsLock\"] = modifierCapsLock\n  o[\"modifierFn\"] = modifierFn\n  o[\"modifierFnLock\"] = modifierFnLock\n  o[\"modifierHyper\"] = modifierHyper\n  o[\"modifierNumLock\"] = modifierNumLock\n  o[\"modifierScrollLock\"] = modifierScrollLock\n  o[\"modifierSuper\"] = modifierSuper\n  o[\"modifierSymbol\"] = modifierSymbol\n  o[\"modifierSymbolLock\"] = modifierSymbolLock\n  o[\"view\"] = view\n  o[\"detail\"] = detail\n  o[\"bubbles\"] = bubbles\n  o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript [WheelEvent](https://developer.mozilla.org/en/docs/Web/API/WheelEvent) to Kotlin\n */\npublic external open class WheelEvent(type: String, eventInitDict: WheelEventInit = definedExternally) : MouseEvent {\n  open val deltaX: Double\n  open val deltaY: Double\n  open val deltaZ: Double\n  open val deltaMode: Int\n  companion object {\n    val DOM_DELTA_PIXEL: Int\n    val DOM_DELTA_LINE: Int\n    val DOM_DELTA_PAGE: Int\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface WheelEventInit : MouseEventInit {\n  var deltaX: Double? /* = 0.0 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var deltaY: Double? /* = 0.0 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var deltaZ: Double? /* = 0.0 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var deltaMode: Int? /* = 0 */\n  get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun WheelEventInit(deltaX: Double? = 0.0, deltaY: Double? = 0.0, deltaZ: Double? = 0.0, deltaMode: Int? = 0, screenX: Int? = 0, screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false,

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modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false,
modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): WheelEventInit {
    val o = js("{}")
    o["deltaX"] = deltaX
    o["deltaY"] = deltaY
    o["deltaZ"] = deltaZ
    o["deltaMode"] = deltaMode
    o["screenX"] = screenX
    o["screenY"] =
screenY
    o["clientX"] = clientX
    o["clientY"] = clientY
    o["button"] = button
    o["buttons"] =
buttons
    o["relatedTarget"] = relatedTarget
    o["region"] = region
    o["ctrlKey"] = ctrlKey
    o["shiftKey"] = shiftKey
    o["altKey"] = altKey
    o["metaKey"] = metaKey
    o["modifierAltGraph"] =
modifierAltGraph
    o["modifierCapsLock"] = modifierCapsLock
    o["modifierFn"] = modifierFn
    o["modifierFnLock"] = modifierFnLock
    o["modifierHyper"] = modifierHyper
    o["modifierNumLock"]
= modifierNumLock
    o["modifierScrollLock"] = modifierScrollLock
    o["modifierSuper"] =
modifierSuper
    o["modifierSymbol"] = modifierSymbol
    o["modifierSymbolLock"] =
modifierSymbolLock
    o["view"] = view
    o["detail"] = detail
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

/** Exposes the JavaScript
[InputEvent](https://developer.mozilla.org/en/docs/Web/API/InputEvent) to Kotlin
*/
public external open class
InputEvent(type: String, eventInitDict: InputEventInit = definedExternally) : UIEvent {
    open val data: String
    open val isComposing: Boolean

    companion object {
        val NONE: Short
        val
CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }

    public external interface InputEventInit : UIEventInit {
        var data: String? /* = "" */
        get() =
definedExternally
        set(value) = definedExternally

        var isComposing: Boolean? /* = false */
        get() = definedExternally
        set(value) =
definedExternally
    }

    @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
    @kotlin.internal.InlineOnly
    public inline fun InputEventInit(data: String? = "",
isComposing: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): InputEventInit {
        val o = js("{}")
        o["data"] = data
        o["isComposing"] = isComposing
        o["view"] = view
        o["detail"] = detail
        o["bubbles"] = bubbles
        o["cancelable"] = cancelable
        o["composed"] = composed
        return o
    }

    /** Exposes the JavaScript
[KeyboardEvent](https://developer.mozilla.org/en/docs/Web/API/KeyboardEvent) to Kotlin
*/
    public external
open class KeyboardEvent(type: String, eventInitDict: KeyboardEventInit = definedExternally) : UIEvent {
        open val key: String
        open val
code: String
        open val location: Int
        open val ctrlKey: Boolean
        open val shiftKey: Boolean
        open val
altKey: Boolean
        open val metaKey: Boolean
        open val repeat: Boolean
        open val isComposing: Boolean
        open val charCode: Int
        open val keyCode: Int
        open val which: Int

        fun getModifierState(keyArg:
String): Boolean

        companion object {
            val DOM_KEY_LOCATION_STANDARD: Int
            val
DOM_KEY_LOCATION_LEFT: Int
            val DOM_KEY_LOCATION_RIGHT: Int
            val
DOM_KEY_LOCATION_NUMPAD: Int
            val NONE: Short
            val CAPTURING_PHASE: Short
            val
AT_TARGET: Short
            val BUBBLING_PHASE: Short
        }

        public external interface
KeyboardEventInit : EventModifierInit {
            var key: String? /* = "" */
            get() = definedExternally
            set(value) = definedExternally

            var code: String? /* = "" */
            get() = definedExternally
            set(value) =
definedExternally

            var location:
Int? /* = 0 */
            get() = definedExternally
            set(value) = definedExternally

            var repeat: Boolean? /* =
false */
            get() = definedExternally
            set(value) = definedExternally

            var isComposing: Boolean? /* =
false */
            get() = definedExternally
            set(value) =
definedExternally
        }

        @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
        @kotlin.internal.InlineOnly
        public inline fun KeyboardEventInit(key: String? = "",
code: String? = "", location: Int? = 0, repeat: Boolean? = false, isComposing: Boolean? = false, ctrlKey: Boolean?
= false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph:

```

```

Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? =
false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock:
Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): KeyboardEventInit {
    val o = js("{}")
    o["key"] = key
    o["code"] = code
    o["location"] = location
    o["repeat"] = repeat
    o["isComposing"] = isComposing
    o["ctrlKey"] = ctrlKey
    o["shiftKey"] = shiftKey
    o["altKey"] = altKey
    o["metaKey"] = metaKey
    o["modifierAltGraph"] = modifierAltGraph
    o["modifierCapsLock"] = modifierCapsLock
    o["modifierFn"] = modifierFn
    o["modifierFnLock"] = modifierFnLock
    o["modifierHyper"] = modifierHyper
    o["modifierNumLock"] = modifierNumLock
    o["modifierScrollLock"] = modifierScrollLock
    o["modifierSuper"] = modifierSuper
    o["modifierSymbol"] = modifierSymbol
    o["modifierSymbolLock"] = modifierSymbolLock
    o["view"] = view
    o["detail"] = detail
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

/** Exposes the JavaScript [CompositionEvent](https://developer.mozilla.org/en/docs/Web/API/CompositionEvent) to Kotlin */
@public external open class CompositionEvent(type: String, eventInitDict: CompositionEventInit = definedExternally) :
    UIEvent {
    open val data: String
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

@public external interface CompositionEventInit : UIEventInit {
    var data: String? = ""
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
@public inline fun CompositionEventInit(data: String? = "", view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): CompositionEventInit {
    val o = js("{}")
    o["data"] = data
    o["view"] = view
    o["detail"] = detail
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

/** Exposes the JavaScript [Event](https://developer.mozilla.org/en/docs/Web/API/Event) to Kotlin */
@public external open class Event(type: String, eventInitDict: EventInit = definedExternally) {
    open val type: String
    open val target: EventTarget?
    open val currentTarget: EventTarget?
    open val eventPhase: Short
    open val bubbles: Boolean
    open val cancelable: Boolean
    open val defaultPrevented: Boolean
    open val composed: Boolean
    open val isTrusted: Boolean
    open val timeStamp: Number
    fun composedPath(): Array<EventTarget>
    fun stopPropagation()
    fun stopImmediatePropagation()
    fun preventDefault()
    fun initEvent(type: String, bubbles: Boolean, cancelable: Boolean)
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

/** Exposes the JavaScript [EventTarget](https://developer.mozilla.org/en/docs/Web/API/EventTarget) to Kotlin */
@public external abstract class EventTarget {
    fun addEventListener(type: String, callback: EventListener?, options: dynamic = definedExternally)
    fun addEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic = definedExternally)
    fun removeEventListener(type: String, callback: EventListener?, options: dynamic = definedExternally)
    fun removeEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic = definedExternally)
    fun dispatchEvent(event: Event): Boolean
}

/** Exposes the JavaScript [EventListener](https://developer.mozilla.org/en/docs/Web/API/EventListener) to Kotlin */
@public external interface EventListener {
    fun handleEvent(event: Event)
}

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* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
* NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!
* See github.com/kotlin/dukat for details
package org.w3c.dom
import kotlin.js.*
import org.khronos.webgl.*
import org.w3c.dom.clipboard.*
import org.w3c.dom.css.*
import org.w3c.dom.encryptedmedia.*
import org.w3c.dom.events.*
import org.w3c.dom.mediacapture.*
import org.w3c.dom.mediasource.*
import org.w3c.dom.pointerevents.*

```

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org.w3c.dom.svg.*\nimport org.w3c.fetch.*\nimport org.w3c.files.*\nimport org.w3c.performance.*\nimport
org.w3c.workers.*\nimport org.w3c.xhr.*\n\npublic external abstract class HTMLAllCollection {\n  open val
length: Int\n  fun item(nameOrIndex: String = definedExternally): UnionElementOrHTMLCollection?\n  fun
namedItem(name: String): UnionElementOrHTMLCollection?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLAllCollection.get(index: Int): Element? =
asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLAllCollection.get(name: String): UnionElementOrHTMLCollection? = asDynamic()[name]\n\n**\n *
Exposes the JavaScript
[HTMLFormControlsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLFormControlsCollection)
to Kotlin\n *^\npublic external abstract class HTMLFormControlsCollection : HTMLCollection\n\n**\n * Exposes
the JavaScript [RadioNodeList](https://developer.mozilla.org/en/docs/Web/API/RadioNodeList) to Kotlin\n
*^\npublic external abstract class RadioNodeList : NodeList, UnionElementOrRadioNodeList {\n  open var value:
String\n}\n\n**\n * Exposes the JavaScript
[HTMLOptionsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionsCollection) to Kotlin\n
*^\npublic
external abstract class HTMLOptionsCollection : HTMLCollection {\n  override var length: Int\n  open var
selectedIndex: Int\n  fun add(element: UnionHTMLOptGroupElementOrHTMLOptionElement, before: dynamic =
definedExternally)\n  fun remove(index: Int)\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLOptionsCollection.set(index: Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n**\n *
Exposes the JavaScript [HTMLInputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLInputElement) to
Kotlin\n *^\npublic external abstract class HTMLInputElement : Element, GlobalEventHandlers,
DocumentAndElementEventHandlers, ElementContentEditable, ElementCSSInlineStyle {\n  open var title:
String\n  open var lang: String\n  open var translate: Boolean\n  open var dir: String\n  open val dataset:
DOMStringMap\n  open var hidden: Boolean\n  open var tabIndex: Int\n  open var accessKey: String\n
  open val accessKeyLabel: String\n  open var draggable: Boolean\n  open val dropzone: DOMTokenList\n
  open var contextMenu: HTMLMenuElement?\n  open var spellcheck: Boolean\n  open var innerText: String\n
  open val offsetParent: Element?\n  open val offsetTop: Int\n  open val offsetLeft: Int\n  open val offsetWidth:
Int\n  open val offsetHeight: Int\n  fun click()\n  fun focus()\n  fun blur()\n  fun forceSpellCheck()\n}\n
companion object {\n  val ELEMENT_NODE: Short\n  val ATTRIBUTE_NODE: Short\n  val
TEXT_NODE: Short\n  val CDATA_SECTION_NODE: Short\n  val ENTITY_REFERENCE_NODE:
Short\n  val ENTITY_NODE: Short\n  val PROCESSING_INSTRUCTION_NODE: Short\n  val
COMMENT_NODE: Short\n  val DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n
  val DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING:
Short\n  val DOCUMENT_POSITION_FOLLOWING: Short\n  val
DOCUMENT_POSITION_CONTAINS: Short\n  val DOCUMENT_POSITION_CONTAINED_BY: Short\n
  val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n}\n}\n\n**\n * Exposes the
JavaScript [HTMLUnknownElement](https://developer.mozilla.org/en/docs/Web/API/HTMLUnknownElement) to
Kotlin\n *^\npublic external abstract class HTMLUnknownElement : HTMLInputElement {\n  companion object {\n
val ELEMENT_NODE: Short\n  val ATTRIBUTE_NODE: Short\n  val TEXT_NODE: Short\n  val
CDATA_SECTION_NODE: Short\n  val ENTITY_REFERENCE_NODE: Short\n  val ENTITY_NODE:
Short\n  val PROCESSING_INSTRUCTION_NODE: Short\n  val COMMENT_NODE: Short\n  val
DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n  val
DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING:

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Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [DOMStringMap](https://developer.mozilla.org/en/docs/Web/API/DOMStringMap) to Kotlin\n
*\n\npublic external abstract class DOMStringMap\n\n@Suppress(\n"INVISIBLE_REFERENCE",
\n"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.get(name:
String): String? = asDynamic()[name]\n\n@Suppress(\n"INVISIBLE_REFERENCE",
\n"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.set(name:
String, value: String) { asDynamic()[name] = value }\n\n/**\n * Exposes the JavaScript
[HTMLHtmlElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHtmlElement) to Kotlin\n
*\n\npublic external abstract class HTMLHtmlElement : HTMLElement {\n    open var version: String\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLHeadElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadElement) to Kotlin\n
*\n\npublic external abstract class HTMLHeadElement : HTMLElement {\n    companion object {\n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTitleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTitleElement) to Kotlin\n
*\n\npublic external abstract class HTMLTitleElement : HTMLElement {\n    open var text: String\n\n    companion object
{\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n
        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLBaseElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBaseElement) to Kotlin\n
*\n\npublic external abstract class HTMLBaseElement : HTMLElement {\n    open var href: String\n    open var target:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n

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    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLLinkElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLinkElement) to Kotlin \n * \n public
external abstract class HTMLLinkElement : HTMLElement, LinkStyle { \n
    open var href: String \n    open var crossOrigin: String? \n    open var rel: String \n    open var `as`:
RequestDestination \n    open val relList: DOMTokenList \n    open var media: String \n    open var nonce: String \n
    open var hreflang: String \n    open var type: String \n    open val sizes: DOMTokenList \n    open var referrerPolicy:
String \n    open var charset: String \n    open var rev: String \n    open var target: String \n    open var scope: String \n
    open var workerType: WorkerType \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED:
Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val
DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLMetaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMetaElement) to Kotlin \n * \n public
external abstract class HTMLMetaElement : HTMLElement { \n    open var name: String \n    open var httpEquiv:
String \n    open var content: String \n    open var scheme: String \n \n    companion object { \n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLStyleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLStyleElement) to Kotlin \n * \n public
external abstract class HTMLStyleElement : HTMLElement, LinkStyle { \n    open var media: String \n    open var
nonce: String \n    open var type: String \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLBodyElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBodyElement) to Kotlin \n * \n public
external abstract class HTMLBodyElement : HTMLElement, WindowEventHandlers { \n    open var text: String \n

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open var link: String\n  open var vLink: String\n  open var aLink: String\n  open var bgColor: String\n  open
var background: String\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE:
Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLHeadingElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadingElement) to Kotlin\n
*\npublic external abstract class HTMLHeadingElement : HTMLElement {\n  open var align: String\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE:
Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLParagraphElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParagraphElement) to Kotlin\n
*\npublic external abstract class HTMLParagraphElement : HTMLElement {\n  open var align: String\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE:
Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLHRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHRElement) to Kotlin\n
*\npublic external abstract class HTMLHRElement : HTMLElement {\n  open var align: String\n  open var color: String\n
open var noShade: Boolean\n  open var size: String\n  open var width: String\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLPreElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPreElement) to Kotlin\n
*\npublic

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external abstract class HTMLPreElement : HTMLInputElement {
    open var width: Int
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

/** Exposes the JavaScript [HTMLQuoteElement](https://developer.mozilla.org/en/docs/Web/API/HTMLQuoteElement) to Kotlin */
@public external abstract class HTMLQuoteElement : HTMLInputElement {
    open var cite: String
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

/** Exposes the JavaScript [HTMLLOListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLOListElement) to Kotlin */
@public external abstract class HTMLLOListElement : HTMLInputElement {
    open var reversed: Boolean
    open var start: Int
    open var type: String
    open var compact: Boolean
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

/** Exposes the JavaScript [HTMLLUListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLUListElement) to Kotlin */
@public external abstract class HTMLLUListElement : HTMLInputElement {
    open var compact: Boolean
    open var type: String
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

/** Exposes the JavaScript [HTMLLIElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLIElement) to Kotlin */
@public external abstract class HTMLLIElement : HTMLInputElement {
    open var value: Int
    open var type: String
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE:

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Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDListElement)
to Kotlin\n * \npublic external abstract class HTMLDListElement : HTMLElement {\n    open var compact:
Boolean\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDivElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDivElement) to Kotlin\n * \npublic
external abstract class HTMLDivElement : HTMLElement {\n    open var align: String\n\n    companion object {\n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n}\n\n/**\n * Exposes the JavaScript
[HTMLAnchorElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAnchorElement) to Kotlin\n
* \npublic external abstract class HTMLAnchorElement : HTMLElement, HTMLHyperlinkElementUtils {\n    open
var target: String\n    open var download: String\n    open var ping: String\n    open var rel: String\n    open val
relList: DOMTokenList\n    open var hreflang: String\n    open var type: String\n    open var text: String\n    open
var referrerPolicy: String\n    open var coords: String\n    open var charset: String\n    open var name: String\n
open var rev: String\n    open var shape: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDataElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataElement) to Kotlin\n * \npublic
external abstract class HTMLDataElement : HTMLElement {\n    open var value: String\n\n    companion object {\n

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    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE:
Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLTimeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTimeElement) to Kotlin \n * \n public
external abstract class HTMLTimeElement : HTMLElement { \n    open var dateTime: String \n \n    companion
object { \n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLSpanElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSpanElement) to Kotlin \n * \n public
external abstract class HTMLSpanElement : HTMLElement { \n    companion object { \n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLBRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBRElement) to Kotlin \n * \n public
external abstract class HTMLBRElement : HTMLElement { \n    open var clear: String \n \n    companion object { \n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLHyperlinkElementUtils](https://developer.mozilla.org/en/docs/Web/API/HTMLHyperlinkElementUtils) to
Kotlin \n * \n public external interface HTMLHyperlinkElementUtils { \n    var href: String\n    val origin: String\n
var protocol: String\n    var username: String\n    var password: String\n    var host: String\n    var hostname:
String\n    var port: String\n    var pathname: String\n    var search: String\n    var hash: String \n} \n \n /** \n * Exposes
the JavaScript [HTMLModElement](https://developer.mozilla.org/en/docs/Web/API/HTMLModElement) to
Kotlin \n * \n public

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external abstract class HTMLModElement : HTMLInputElement {\n  open var cite: String\n  open var dateTime:
String\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLPictureElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPictureElement)
to Kotlin\n\n */\npublic external abstract class HTMLPictureElement : HTMLInputElement {\n  companion object {\n
val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSourceElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSourceElement)
to Kotlin\n\n */\npublic external abstract class HTMLSourceElement : HTMLInputElement {\n  open var src: String\n
open var type: String\n  open var srcset: String\n  open var sizes: String\n  open var media: String\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLImageElement](https://developer.mozilla.org/en/docs/Web/API/HTMLImageElement) to Kotlin\n\n
*/\npublic external abstract class HTMLImageElement : HTMLInputElement, HTMLORSVGImageElement,
TexImageSource {\n  open var alt: String\n  open var src: String\n  open var srcset: String\n  open var sizes:
String\n  open var crossOrigin: String?\n  open var useMap: String\n  open var isMap: Boolean\n  open var
width: Int\n  open var height: Int\n  open val naturalWidth: Int\n  open val naturalHeight: Int\n  open val
complete: Boolean\n  open val currentSrc: String\n  open var referrerPolicy: String\n  open var name: String\n
open var lowsrc: String\n  open var align: String\n  open var hspace: Int\n  open var vspace: Int\n  open var
longDesc: String\n  open var border: String\n  open val x: Int\n  open val y: Int\n\n  companion object {\n
val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val

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DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}\n\n/**\n * Exposes the JavaScript
[HTMLIFrameElement](https://developer.mozilla.org/en/docs/Web/API/HTMLIFrameElement) to Kotlin\n
*\npublic external abstract class HTMLIFrameElement : HTMLInputElement {\n    open var src: String\n    open var
srcdoc: String\n    open var name: String\n    open val sandbox: DOMTokenList\n
    open var allowFullscreen: Boolean\n    open var allowUserMedia: Boolean\n    open var width: String\n    open
var height: String\n    open var referrerPolicy: String\n    open val contentDocument: Document?\n    open val
contentWindow: Window?\n    open var align: String\n    open var scrolling: String\n    open var frameborder:
String\n    open var longDesc: String\n    open var marginHeight: String\n    open var marginWidth: String\n    fun
getSVGDocument(): Document?\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n
            val DOCUMENT_POSITION_PRECEDING: Short\n            val DOCUMENT_POSITION_FOLLOWING:
Short\n            val DOCUMENT_POSITION_CONTAINS: Short\n            val
DOCUMENT_POSITION_CONTAINED_BY: Short\n            val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n            }n}\n\n/**\n * Exposes the JavaScript
[HTMLEmbedElement](https://developer.mozilla.org/en/docs/Web/API/HTMLEmbedElement) to Kotlin\n
*\npublic external abstract class HTMLEmbedElement : HTMLInputElement {\n    open var src: String\n    open var
type: String\n    open var width: String\n    open var height: String\n    open var align: String\n    open var name:
String\n    fun getSVGDocument(): Document?\n\n    companion object {\n        val ELEMENT_NODE: Short\n
        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE:
Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n
        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }n}\n\n/**\n * Exposes
the JavaScript [HTMLObjectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLObjectElement) to
Kotlin\n
*\npublic external abstract class HTMLObjectElement : HTMLInputElement {\n    open var data: String\n
    open var type: String\n    open var typeMustMatch: Boolean\n    open var name: String\n    open var useMap:
String\n    open val form: HTMLFormElement?\n    open var width: String\n    open var height: String\n    open val
contentDocument: Document?\n    open val contentWindow: Window?\n    open val willValidate:
Boolean\n    open val validity: ValidityState\n    open val validationMessage: String\n    open var align: String\n
    open var archive: String\n    open var code: String\n    open var declare: Boolean\n    open var hspace: Int\n
    open var standby: String\n    open var vspace: Int\n    open var codeBase: String\n    open var codeType: String\n
    open var border: String\n    fun getSVGDocument(): Document?\n    fun checkValidity(): Boolean\n    fun
reportValidity(): Boolean\n    fun setCustomValidity(error: String)\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val

```

DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n
val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the
JavaScript [HTMLParamElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParamElement) to
Kotlin\n */\npublic external abstract class HTMLParamElement : HTMLInputElement {\n open var name: String\n
open var value: String\n open var type: String\n open var valueType: String\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE:
Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the JavaScript
[HTMLVideoElement](https://developer.mozilla.org/en/docs/Web/API/HTMLVideoElement) to Kotlin\n */\npublic
external abstract class HTMLVideoElement : HTMLMediaElement, CanvasImageSource, TexImageSource {\n
open var width: Int\n open var height: Int\n open val videoWidth: Int\n open val videoHeight: Int\n open var
poster: String\n open var playsInline: Boolean\n\n companion object {\n val NETWORK_EMPTY: Short\n
val NETWORK_IDLE: Short\n val NETWORK_LOADING: Short\n val NETWORK_NO_SOURCE:
Short\n val HAVE_NOTHING:
Short\n val HAVE_METADATA: Short\n val HAVE_CURRENT_DATA: Short\n val
HAVE_FUTURE_DATA: Short\n val HAVE_ENOUGH_DATA: Short\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the JavaScript
[HTMLAudioElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAudioElement)
to Kotlin\n */\npublic external abstract class HTMLAudioElement : HTMLMediaElement {\n companion object
{\n val NETWORK_EMPTY: Short\n val NETWORK_IDLE: Short\n val NETWORK_LOADING:
Short\n val NETWORK_NO_SOURCE: Short\n val HAVE_NOTHING: Short\n val
HAVE_METADATA: Short\n val HAVE_CURRENT_DATA: Short\n val HAVE_FUTURE_DATA:
Short\n val HAVE_ENOUGH_DATA: Short\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:

```

Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [HTMLTrackElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTrackElement) to Kotlin\n
*\npublic external abstract class HTMLTrackElement : HTMLElement {\n    open var kind: String\n    open var src:
String\n    open var srclang: String\n    open var label: String\n    open var default: Boolean\n    open val readyState:
Short\n    open val track: TextTrack\n\n    companion object {\n        val NONE: Short\n        val LOADING: Short\n
        val LOADED: Short\n        val ERROR: Short\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE:
Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val
DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLMediaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMediaElement) to
Kotlin\n
*\npublic external abstract class HTMLMediaElement : HTMLElement {\n    open val error:
MediaError?\n    open var src: String\n    open var srcObject: MediaProvider?\n    open val currentSrc: String\n
open var crossOrigin: String?\n    open val networkState: Short\n    open var preload: String\n    open val buffered:
TimeRanges\n    open val readyState:
Short\n    open val seeking: Boolean\n    open var currentTime: Double\n    open val duration: Double\n    open val
paused: Boolean\n    open var defaultPlaybackRate: Double\n    open var playbackRate: Double\n    open val played:
TimeRanges\n    open val seekable: TimeRanges\n    open val ended: Boolean\n    open var autoplay: Boolean\n
open var loop: Boolean\n    open var controls: Boolean\n    open var volume: Double\n    open var muted: Boolean\n
open var defaultMuted: Boolean\n    open val audioTracks: AudioTrackList\n    open val videoTracks:
VideoTrackList\n    open val textTracks: TextTrackList\n    open val mediaKeys: MediaKeys?\n    open var
onencrypted: ((Event) -> dynamic)?\n    open var onwaitingforkey: ((Event) -> dynamic)?\n    fun load()\n    fun
canPlayType(type: String): CanPlayTypeResult\n    fun fastSeek(time: Double)\n    fun getStartDate(): dynamic\n
fun play(): Promise<Unit>\n    fun pause()\n    fun addTextTrack(kind: TextTrackKind, label: String
= definedExternally, language: String = definedExternally): TextTrack\n    fun setMediaKeys(mediaKeys:
MediaKeys?): Promise<Unit>\n\n    companion object {\n        val NETWORK_EMPTY: Short\n        val
NETWORK_IDLE: Short\n        val NETWORK_LOADING: Short\n        val NETWORK_NO_SOURCE: Short\n
        val HAVE_NOTHING: Short\n        val HAVE_METADATA: Short\n        val HAVE_CURRENT_DATA:
Short\n        val HAVE_FUTURE_DATA: Short\n        val HAVE_ENOUGH_DATA: Short\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING:
Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val
DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [MediaError](https://developer.mozilla.org/en/docs/Web/API/MediaError) to Kotlin\n
*\npublic external
abstract class MediaError {\n    open val code: Short\n\n    companion object {\n        val
MEDIA_ERR_ABORTED: Short\n        val MEDIA_ERR_NETWORK: Short\n        val MEDIA_ERR_DECODE:

```



```

Short\n    val MEDIA_ERR_SRC_NOT_SUPPORTED: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[AudioTrackList](https://developer.mozilla.org/en/docs/Web/API/AudioTrackList) to Kotlin\n *\npublic external
abstract class AudioTrackList : EventTarget {\n    open val length: Int\n    open var onchange: ((Event) ->
dynamic)?\n    open var onaddtrack: ((TrackEvent) -> dynamic)?\n    open var onremovetrack: ((TrackEvent) ->
dynamic)?\n
    fun getTrackById(id: String): AudioTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun AudioTrackList.get(index:
Int): AudioTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[AudioTrack](https://developer.mozilla.org/en/docs/Web/API/AudioTrack) to Kotlin\n *\npublic external abstract
class AudioTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n    open val id: String\n    open val kind:
String\n    open val label: String\n    open val language: String\n    open var enabled: Boolean\n    open val
sourceBuffer: SourceBuffer?\n}\n\n/**\n * Exposes the JavaScript
[VideoTrackList](https://developer.mozilla.org/en/docs/Web/API/VideoTrackList) to Kotlin\n *\npublic external
abstract class VideoTrackList : EventTarget {\n    open val length: Int\n    open val selectedIndex: Int\n    open var
onchange: ((Event) -> dynamic)?\n    open var onaddtrack: ((TrackEvent) -> dynamic)?\n    open var
onremovetrack:
((TrackEvent) -> dynamic)?\n    fun getTrackById(id: String):
VideoTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun VideoTrackList.get(index:
Int): VideoTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[VideoTrack](https://developer.mozilla.org/en/docs/Web/API/VideoTrack) to Kotlin\n *\npublic external abstract
class VideoTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n    open val id: String\n    open val kind:
String\n    open val label: String\n    open val language: String\n    open var selected: Boolean\n    open val
sourceBuffer: SourceBuffer?\n}\n\npublic external abstract class TextTrackList : EventTarget {\n    open val length:
Int\n    open var onchange: ((Event) -> dynamic)?\n    open var onaddtrack: ((TrackEvent) -> dynamic)?\n    open
var onremovetrack: ((TrackEvent) -> dynamic)?\n    fun getTrackById(id: String):
TextTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline operator fun TextTrackList.get(index: Int): TextTrack? = asDynamic()[index]\n\n/**\n * Exposes the
JavaScript [TextTrack](https://developer.mozilla.org/en/docs/Web/API/TextTrack) to Kotlin\n *\npublic external
abstract class TextTrack : EventTarget, UnionAudioTrackOrTextTrackOrVideoTrack {\n    open val kind:
TextTrackKind\n    open val label: String\n    open val language: String\n    open val id: String\n    open val
inBandMetadataTrackDispatchType: String\n    open var mode: TextTrackMode\n    open val cues:
TextTrackCueList?\n    open val activeCues: TextTrackCueList?\n    open var oncuechange: ((Event) ->
dynamic)?\n    open val sourceBuffer: SourceBuffer?\n    fun addCue(cue: TextTrackCue)\n    fun removeCue(cue:
TextTrackCue)\n}\n\npublic external abstract class TextTrackCueList {\n    open val length: Int\n    fun
getCueById(id: String): TextTrackCue?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline operator fun TextTrackCueList.get(index: Int): TextTrackCue? = asDynamic()[index]\n\n/**\n * Exposes the
JavaScript [TextTrackCue](https://developer.mozilla.org/en/docs/Web/API/TextTrackCue) to Kotlin\n *\npublic
external abstract class TextTrackCue : EventTarget {\n    open val track: TextTrack?\n    open var id: String\n
open var startTime: Double\n    open var endTime: Double\n    open var pauseOnExit: Boolean\n    open var
onenter: ((Event) -> dynamic)?\n    open var onexit: ((Event) -> dynamic)?\n}\n\n/**\n * Exposes the JavaScript
[TimeRanges](https://developer.mozilla.org/en/docs/Web/API/TimeRanges) to Kotlin\n *\npublic external abstract
class TimeRanges {\n    open val length: Int\n    fun start(index: Int): Double\n    fun end(index: Int):
Double\n}\n\n/**\n * Exposes the JavaScript
[TrackEvent](https://developer.mozilla.org/en/docs/Web/API/TrackEvent) to Kotlin\n *\npublic external open class
TrackEvent(type: String, eventInitDict: TrackEventInit

```

```

= definedExternally) : Event {\n  open val track: UnionAudioTrackOrTextTrackOrVideoTrack?\n\n  companion
object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n\n\npublic external interface TrackEventInit : EventInit {\n  var track:
UnionAudioTrackOrTextTrackOrVideoTrack? /* = null */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n\n@kotlin.internal.InlineOnly\n\npublic inline fun TrackEventInit(track:
UnionAudioTrackOrTextTrackOrVideoTrack? = null, bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): TrackEventInit {\n  val o = js(\"({})\")\n  o[\"track\"] = track\n  o[\"bubbles\"] =
bubbles\n  o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n\n/**\n * Exposes the
JavaScript [HTMLMapElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMapElement)
to Kotlin\n */\n\npublic external abstract class HTMLMapElement : HTMLElement {\n  open var name: String\n
open val areas: HTMLCollection\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n\n\n/**\n * Exposes the JavaScript
[HTMLAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAreaElement)
to Kotlin\n */\n\npublic external abstract class HTMLAreaElement : HTMLElement, HTMLHyperlinkElementUtils
{\n  open var alt: String\n  open var coords: String\n  open var shape: String\n  open var target: String\n  open
var download: String\n  open var ping: String\n  open var rel: String\n  open val relList: DOMTokenList\n
open var referrerPolicy: String\n  open var noHref: Boolean\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n
    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n\n\n\n/**\n * Exposes the JavaScript
[HTMLTableElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableElement) to Kotlin\n */\n\npublic
external abstract class HTMLTableElement : HTMLElement {\n  open var caption:
HTMLTableCaptionElement?\n  open var tHead: HTMLTableSectionElement?\n  open var tFoot:
HTMLTableSectionElement?\n  open val tBodies: HTMLCollection\n  open val rows: HTMLCollection\n  open
var align: String\n  open var border: String\n  open var frame: String\n  open var rules: String\n  open var
summary: String\n  open var width: String\n  open var bgColor: String\n  open var cellPadding: String\n  open
var cellSpacing: String\n  fun createCaption(): HTMLTableCaptionElement\n  fun deleteCaption()\n
    fun createTHead(): HTMLTableSectionElement\n  fun deleteTHead()\n  fun createTFoot():
HTMLTableSectionElement\n  fun deleteTFoot()\n  fun createTBody(): HTMLTableSectionElement\n  fun
insertRow(index: Int = definedExternally): HTMLTableRowElement\n  fun deleteRow(index: Int)\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:

```

```
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
```

```
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
```

```
[HTMLTableCaptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCaptionElement) to
```

```
Kotlin\n *  
\npublic external abstract class HTMLTableCaptionElement : HTMLElement {\n    open var align: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
```

```
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
```

```
[HTMLTableColElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableColElement) to Kotlin
```

```
\n *  
\npublic external abstract class HTMLTableColElement : HTMLElement {\n    open var span: Int\n    open var align: String\n    open var ch: String\n    open var chOff: String\n    open var vAlign: String\n    open var width: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED:
```

```
Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
```

```
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
```

```
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
```

```
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
```

```
[HTMLTableSectionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableSectionElement) to
```

```
Kotlin\n *  
\npublic external abstract class HTMLTableSectionElement : HTMLElement {\n    open val rows: HTMLCollection\n    open var align: String\n    open var ch: String\n    open var chOff: String\n    open var vAlign: String\n    fun insertRow(index: Int = definedExternally): HTMLElement\n    fun deleteRow(index: Int)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE:
```

```
Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val
```

```
DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val
```

```
NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
```

```
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
```

```
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
```

```
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
```

```
[HTMLTableRowElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableRowElement) to Kotlin
```

```
\n *  
\npublic external abstract class HTMLTableRowElement : HTMLElement {\n    open val rowIndex: Int\n    open
```

```

val sectionRowIndex: Int\n open val cells: HTMLCollection\n open var align: String\n open var ch: String\n
open var chOff: String\n open var vAlign: String\n open var bgColor: String\n fun insertCell(index: Int =
definedExternally):
    HTMLElement\n fun deleteCell(index: Int)\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableCellElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCellElement) to Kotlin\n
*/\npublic external
abstract class HTMLTableCellElement : HTMLElement {\n open var colSpan: Int\n open var rowSpan: Int\n
open var headers: String\n open val cellIndex: Int\n open var scope: String\n open var abbr: String\n open var
align: String\n open var axis: String\n open var height: String\n open var width: String\n open var ch:
String\n open var chOff: String\n open var noWrap: Boolean\n open var vAlign: String\n open var bgColor:
String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING:
Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLFormElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFormElement) to Kotlin\n
*/\npublic external abstract class HTMLFormElement : HTMLElement {\n open var acceptCharset: String\n open var
action: String\n open var autocomplete: String\n open var enctype: String\n open var encoding: String\n open
var method: String\n open var name: String\n open var noValidate: Boolean\n open var target: String\n open
val elements: HTMLFormControlsCollection\n open val length: Int\n fun submit()\n fun reset()\n fun
checkValidity(): Boolean\n fun reportValidity(): Boolean\n\n companion object {\n val ELEMENT_NODE:
Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLFormElement.get(index: Int): Element? =

```



```

    open var formEnctype: String\n    open var formMethod: String\n    open var formNoValidate: Boolean\n    open
var formTarget: String\n    open var name: String\n    open var type: String\n    open var value: String\n    open var
menu: HTMLMenuElement?\n    open val willValidate: Boolean\n    open val validity: ValidityState\n    open val
validationMessage: String\n    open val labels: NodeList\n    fun checkValidity(): Boolean\n    fun reportValidity():
Boolean\n    fun setCustomValidity(error: String)\n\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n\n\n    * Exposes the JavaScript
[HTMLSelectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSelectElement) to Kotlin\n    *^\n\npublic
external abstract class HTMLSelectElement : HTMLInputElement, ItemArrayLike<Element> {\n    open var
autocomplete: String\n
    open var autofocus: Boolean\n    open var disabled: Boolean\n    open val form: HTMLFormElement?\n    open
var multiple: Boolean\n    open var name: String\n    open var required: Boolean\n    open var size: Int\n    open val
type: String\n    open val options: HTMLOptionsCollection\n    override var length: Int\n    open val
selectedOptions: HTMLCollection\n    open var selectedIndex: Int\n    open var value: String\n    open val
willValidate: Boolean\n    open val validity: ValidityState\n    open val validationMessage: String\n    open val
labels: NodeList\n    fun namedItem(name: String): HTMLOptionElement?\n    fun add(element:
UnionHTMLOptGroupElementOrHTMLOptionElement, before: dynamic = definedExternally)\n    fun
remove(index: Int)\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun
setCustomValidity(error: String)\n    override fun item(index: Int): Element?\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n\n\n    @Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n    @kotlin.internal.InlineOnly\n    npublic inline operator fun
HTMLSelectElement.get(index: Int): Element? =
asDynamic()[index]\n\n\n    @Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n    @kotlin.internal.InlineOnly\n    npublic inline operator fun
HTMLSelectElement.set(index:
Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n\n    * Exposes the JavaScript
[HTMLDataListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataListElement) to Kotlin\n    *^\n\npublic
external abstract class HTMLDataListElement : HTMLInputElement {\n    open val options:
HTMLCollection\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val

```

```

PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptGroupElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptGroupElement) to Kotlin\n
*\n\npublic external abstract class HTMLOptGroupElement : HTMLInputElement,
UnionHTMLOptGroupElementOrHTMLOptionElement {\n    open var disabled: Boolean\n    open var label:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:
Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionElement) to Kotlin\n
*\n\npublic external abstract class HTMLOptionElement : HTMLInputElement,
UnionHTMLOptGroupElementOrHTMLOptionElement {\n    open var disabled: Boolean\n    open var form:
HTMLFormElement?\n    open var label: String\n    open var defaultSelected: Boolean\n    open var selected:
Boolean\n    open var value: String\n    open var text: String\n    open val index: Int\n\n    companion object {\n
val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n
        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTextAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTextAreaElement) to Kotlin\n
*\n\npublic external abstract class HTMLTextAreaElement : HTMLInputElement {\n    open var autocomplete: String\n
open var autofocus: Boolean\n    open var cols: Int\n    open var dirName: String\n    open var disabled: Boolean\n
open val form: HTMLFormElement?\n    open var inputMode: String\n    open var maxLength: Int\n    open var
minLength: Int\n    open var name:
String\n    open var placeholder: String\n    open var readOnly: Boolean\n    open var required: Boolean\n    open
var rows: Int\n    open var wrap: String\n    open val type: String\n    open var defaultValue: String\n    open var
value: String\n    open val textLength: Int\n    open val willValidate: Boolean\n    open val validity: ValidityState\n
open val validationMessage: String\n    open val labels: NodeList\n    open var selectionStart: Int?\n    open var
selectionEnd: Int?\n    open var selectionDirection: String?\n    fun checkValidity(): Boolean\n    fun
reportValidity(): Boolean\n    fun setCustomValidity(error: String)\n    fun select()\n    fun
setRangeText(replacement: String)\n    fun setRangeText(replacement: String, start: Int, end: Int, selectionMode:
SelectionMode = definedExternally)\n    fun setSelectionRange(start: Int, end: Int, direction: String =
definedExternally)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n

```

```

val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes the JavaScript
[HTMLKeygenElement](https://developer.mozilla.org/en/docs/Web/API/HTMLKeygenElement) to Kotlin \n
*/ \n public external abstract class HTMLKeygenElement : HTMLElement { \n    open var autofocus: Boolean \n
open var challenge: String \n    open var disabled: Boolean \n    open val
form: HTMLFormElement? \n    open var keytype: String \n    open var name: String \n    open val type: String \n
open val willValidate: Boolean \n    open val validity: ValidityState \n    open val validationMessage: String \n    open
val labels: NodeList \n    fun checkValidity(): Boolean \n    fun reportValidity(): Boolean \n    fun
setCustomValidity(error: String) \n \n    companion object { \n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:
Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLOutputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOutputElement) to Kotlin \n
*/ \n public external abstract class HTMLOutputElement : HTMLElement { \n    open val htmlFor: DOMTokenList \n
open val form: HTMLFormElement? \n    open var name: String \n    open val type: String \n    open var
defaultValue: String \n    open var value: String \n    open val willValidate: Boolean \n    open val validity:
ValidityState \n    open val validationMessage: String \n    open val labels: NodeList \n    fun checkValidity():
Boolean \n    fun reportValidity(): Boolean \n    fun setCustomValidity(error: String) \n \n    companion object { \n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLProgressElement](https://developer.mozilla.org/en/docs/Web/API/HTMLProgressElement) to Kotlin \n
*/ \n public external abstract class HTMLProgressElement : HTMLElement { \n    open var value: Double \n    open
var max: Double \n    open val position: Double \n    open val labels: NodeList \n \n    companion object { \n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n

```



```

DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}}n/n/**\n * Exposes the JavaScript
[HTMLMeterElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMeterElement) to Kotlin\n */npublic
external abstract class HTMLMeterElement : HTMLInputElement {\n    open var value: Double\n    open var min:
Double\n    open var max: Double\n    open var low: Double\n    open
    var high: Double\n    open var optimum: Double\n    open val labels: NodeList\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}}n/n/**\n * Exposes the JavaScript
[HTMLFieldSetElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFieldSetElement) to Kotlin\n
*/npublic external abstract class HTMLFieldSetElement : HTMLInputElement {\n    open var disabled: Boolean\n
open val form: HTMLFormElement?\n    open var name: String\n    open val type: String\n    open val elements:
HTMLCollection\n    open val willValidate: Boolean\n    open val validity: ValidityState\n    open val
validationMessage: String\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun
setCustomValidity(error: String)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING:
Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val
DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}}n/n/**\n * Exposes the
JavaScript [HTMLLegendElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLegendElement) to
Kotlin\n */npublic external abstract class HTMLLegendElement : HTMLInputElement {\n    open val form:
HTMLFormElement?\n    open var align: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n
        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED:
Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val
DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}}n/n/**\n * Exposes the JavaScript
[ValidityState](https://developer.mozilla.org/en/docs/Web/API/ValidityState) to Kotlin\n */npublic external
abstract class ValidityState {\n    open val valueMissing: Boolean\n    open val typeMismatch: Boolean\n    open val

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patternMismatch: Boolean\n open val tooLong: Boolean\n open val tooShort: Boolean\n open val
rangeUnderflow: Boolean\n open val rangeOverflow: Boolean\n open val stepMismatch: Boolean\n open val
badInput: Boolean\n open val customError: Boolean\n open val valid: Boolean\n}\n\n**\n * Exposes the
JavaScript [HTMLDetailsElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDetailsElement) to
Kotlin\n */\npublic external
abstract class HTMLDetailsElement : HTMLElement {\n open var open: Boolean\n\n companion object {\n
val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
HTMLMenuElement : HTMLElement {\n open var type: String\n open var label: String\n open var
compact: Boolean\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
HTMLMenuItemElement : HTMLElement {\n open var type: String\n open var label: String\n open var icon:
String\n open var disabled: Boolean\n open var
checked: Boolean\n open var radiogroup: String\n open var default: Boolean\n\n companion object {\n
val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external open class
RelatedEvent(type: String, eventInitDict: RelatedEventInit = definedExternally) : Event {\n open val
relatedTarget: EventTarget?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE:
Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
RelatedEventInit : EventInit {\n var relatedTarget: EventTarget? /* = null */\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun RelatedEventInit(relatedTarget:
EventTarget? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
RelatedEventInit {\n val o = js("{}")\n o["relatedTarget"] = relatedTarget\n o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\n**\n * Exposes the JavaScript
[HTMLDialogElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDialogElement) to Kotlin\n

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*\npublic external abstract class HTMLDialogElement
: HTMLElement {\n  open var open: Boolean\n  open var returnValue: String\n  fun show(anchor:
UnionElementOrMouseEvent = definedExternally)\n  fun showModal(anchor: UnionElementOrMouseEvent =
definedExternally)\n  fun close(returnValue: String = definedExternally)\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the
JavaScript [HTMLScriptElement](https://developer.mozilla.org/en/docs/Web/API/HTMLScriptElement) to Kotlin\n
*\npublic external abstract class HTMLScriptElement : HTMLElement, HTMLOrSVGScriptElement {\n  open
var src: String\n  open var type: String\n  open var charset: String\n  open var async: Boolean\n  open var defer:
Boolean\n  open var crossOrigin: String?\n  open var text: String\n  open var nonce: String\n  open var event:
String\n  open var htmlFor: String?\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE:
Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes
the JavaScript [HTMLTemplateElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTemplateElement)
to Kotlin\n
*\npublic external abstract class HTMLTemplateElement : HTMLElement {\n  open val content:
DocumentFragment\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE:
Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSlotElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSlotElement) to Kotlin\n
*\npublic external abstract class HTMLSlotElement : HTMLElement {\n  open var name: String\n  fun
assignedNodes(options: AssignedNodesOptions = definedExternally): Array<Node>\n\n  companion object {\n
val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n
val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE:
Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n

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    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external interface
AssignedNodesOptions {\n    var flatten: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun AssignedNodesOptions(flatten:
Boolean? = false): AssignedNodesOptions {\n    val o = js(\"({})\")\n    o[\"flatten\"] = flatten\n    return
o\n}\n\n/**\n * Exposes the JavaScript
[HTMLCanvasElement](https://developer.mozilla.org/en/docs/Web/API/HTMLCanvasElement)
to Kotlin\n */\npublic external abstract class HTMLCanvasElement : HTMLImageSource,
TexImageSource {\n    open var width: Int\n    open var height: Int\n    fun getContext(contextId: String, vararg
arguments: Any?): RenderingContext?\n    fun toDataURL(type: String = definedExternally, quality: Any? =
definedExternally): String\n    fun toBlob(_callback: (Blob?) -> Unit, type: String = definedExternally, quality:
Any? = definedExternally)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED:
Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val
DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external interface
CanvasRenderingContext2DSettings {\n    var alpha: Boolean? /* = true */\n    get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
CanvasRenderingContext2DSettings(alpha: Boolean? = true): CanvasRenderingContext2DSettings {\n    val o =
js(\"({})\")\n    o[\"alpha\"] = alpha\n    return o\n}\n\n/**\n * Exposes the JavaScript
[CanvasRenderingContext2D](https://developer.mozilla.org/en/docs/Web/API/CanvasRenderingContext2D) to
Kotlin\n */\npublic external abstract class CanvasRenderingContext2D : CanvasState, CanvasTransform,
CanvasCompositing, CanvasImageSmoothing,
CanvasFillStrokeStyles, CanvasShadowStyles, CanvasFilters, CanvasRect, CanvasDrawPath, CanvasUserInterface,
CanvasText, CanvasDrawImage, CanvasHitRegion, CanvasImageData, CanvasPathDrawingStyles,
CanvasTextDrawingStyles, CanvasPath, RenderingContext {\n    open val canvas:
HTMLCanvasElement\n}\n\npublic external interface CanvasState {\n    fun save()\n    fun restore()\n}\n\npublic
external interface CanvasTransform {\n    fun scale(x: Double, y: Double)\n    fun rotate(angle: Double)\n    fun
translate(x: Double, y: Double)\n    fun transform(a: Double, b: Double, c: Double, d: Double, e: Double, f:
Double)\n    fun getTransform(): DOMMatrix\n    fun setTransform(a: Double, b: Double, c: Double, d: Double, e:
Double, f: Double)\n    fun setTransform(transform: dynamic = definedExternally)\n    fun
resetTransform()\n}\n\npublic external interface CanvasCompositing {\n    var globalAlpha: Double\n    var
globalCompositeOperation: String\n}\n\npublic external interface CanvasImageSmoothing
{\n    var imageSmoothingEnabled: Boolean\n    var imageSmoothingQuality:
ImageSmoothingQuality\n}\n\npublic external interface CanvasFillStrokeStyles {\n    var strokeStyle: dynamic\n
get() = definedExternally\n    set(value) = definedExternally\n    var fillStyle: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n    fun createLinearGradient(x0: Double, y0: Double, x1:
Double, y1: Double): CanvasGradient\n    fun createRadialGradient(x0: Double, y0: Double, r0: Double, x1:
Double, y1: Double, r1: Double): CanvasGradient\n    fun createPattern(image: CanvasImageSource, repetition:

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String): CanvasPattern?}\n\npublic external interface CanvasShadowStyles {\n    var shadowOffsetX: Double\n    var shadowOffsetY: Double\n    var shadowBlur: Double\n    var shadowColor: String}\n\npublic external
interface CanvasFilters {\n    var filter: String}\n\npublic external interface CanvasRect {\n    fun clearRect(x:
Double, y: Double,
    w: Double, h: Double)\n    fun fillRect(x: Double, y: Double, w: Double, h: Double)\n    fun strokeRect(x: Double,
y: Double, w: Double, h: Double)\n\npublic external interface CanvasDrawPath {\n    fun beginPath()\n    fun
fill(fillRule: CanvasFillRule = definedExternally)\n    fun fill(path: Path2D, fillRule: CanvasFillRule =
definedExternally)\n    fun stroke()\n    fun stroke(path: Path2D)\n    fun clip(fillRule: CanvasFillRule =
definedExternally)\n    fun clip(path: Path2D, fillRule: CanvasFillRule = definedExternally)\n    fun resetClip()\n
fun isPointInPath(x: Double, y: Double, fillRule: CanvasFillRule = definedExternally): Boolean\n    fun
isPointInPath(path: Path2D, x: Double, y: Double, fillRule: CanvasFillRule = definedExternally): Boolean\n    fun
isPointInStroke(x: Double, y: Double): Boolean\n    fun isPointInStroke(path: Path2D, x: Double, y: Double):
Boolean}\n\npublic external interface CanvasUserInterface {\n    fun drawFocusIfNeeded(element: Element)\n
fun drawFocusIfNeeded(path: Path2D, element: Element)\n    fun scrollPathIntoView()\n    fun
scrollPathIntoView(path: Path2D)\n\npublic external interface CanvasText {\n    fun fillText(text: String, x:
Double, y: Double, maxWidth: Double = definedExternally)\n    fun strokeText(text: String, x: Double, y: Double,
maxWidth: Double = definedExternally)\n    fun measureText(text: String): TextMetrics}\n\npublic external
interface CanvasDrawImage {\n    fun drawImage(image: CanvasImageSource, dx: Double, dy: Double)\n    fun
drawImage(image: CanvasImageSource, dx: Double, dy: Double, dw: Double, dh: Double)\n    fun
drawImage(image: CanvasImageSource, sx: Double, sy: Double, sw: Double, sh: Double, dx: Double, dy: Double,
dw: Double, dh: Double)\n\npublic external interface CanvasHitRegion {\n    fun addHitRegion(options:
HitRegionOptions = definedExternally)\n    fun removeHitRegion(id: String)\n    fun clearHitRegions()\n\npublic
external interface CanvasImageData {\n    fun
createImageData(sw: Double, sh: Double): ImageData\n    fun createImageData(imagedata: ImageData):
ImageData\n    fun getImageData(sx: Double, sy: Double, sw: Double, sh: Double): ImageData\n    fun
putImageData(imagedata: ImageData, dx: Double, dy: Double)\n    fun putImageData(imagedata: ImageData, dx:
Double, dy: Double, dirtyX: Double, dirtyY: Double, dirtyWidth: Double, dirtyHeight: Double)\n\npublic
external interface CanvasPathDrawingStyles {\n    var lineWidth: Double\n    var lineCap: CanvasLineCap\n    var
lineJoin: CanvasLineJoin\n    var miterLimit: Double\n    var lineDashOffset: Double\n    fun setLineDash(segments:
Array<Double>)\n    fun getLineDash(): Array<Double>}\n\npublic external interface CanvasTextDrawingStyles
{\n    var font: String\n    var textAlign: CanvasTextAlign\n    var textBaseline: CanvasTextBaseline\n    var
direction: CanvasDirection}\n\npublic external interface CanvasPath {\n    fun closePath()\n    fun moveTo(x:
Double, y: Double)\n    fun
lineTo(x: Double, y: Double)\n    fun quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n    fun
bezierCurveTo(cp1x: Double, cp1y: Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n    fun arcTo(x1:
Double, y1: Double, x2: Double, y2: Double, radius: Double)\n    fun arcTo(x1: Double, y1: Double, x2: Double,
y2: Double, radiusX: Double, radiusY: Double, rotation: Double)\n    fun rect(x: Double, y: Double, w: Double, h:
Double)\n    fun arc(x: Double, y: Double, radius: Double, startAngle: Double, endAngle: Double, anticlockwise:
Boolean = definedExternally)\n    fun ellipse(x: Double, y: Double, radiusX: Double, radiusY: Double, rotation:
Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean = definedExternally)\n\n\n/**\n * Exposes
the JavaScript [CanvasGradient](https://developer.mozilla.org/en/docs/Web/API/CanvasGradient) to Kotlin\n
*/\n\npublic external abstract class CanvasGradient {\n    fun addColorStop(offset: Double, color: String)\n\n\n/**\n
* Exposes the JavaScript [CanvasPattern](https://developer.mozilla.org/en/docs/Web/API/CanvasPattern) to
Kotlin\n
*/\n\npublic external abstract class CanvasPattern {\n    fun setTransform(transform: dynamic =
definedExternally)\n\n\n\n/**\n * Exposes the JavaScript
[TextMetrics](https://developer.mozilla.org/en/docs/Web/API/TextMetrics) to Kotlin\n
*/\n\npublic external abstract
class TextMetrics {\n    open val width: Double\n    open val actualBoundingBoxLeft: Double\n    open val
actualBoundingBoxRight: Double\n    open val fontBoundingBoxAscent: Double\n    open val

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fontBoundingBoxDescent: Double\n    open val actualBoundingBoxAscent: Double\n    open val
actualBoundingBoxDescent: Double\n    open val emHeightAscent: Double\n    open val emHeightDescent:
Double\n    open val hangingBaseline: Double\n    open val alphabeticBaseline: Double\n    open val
ideographicBaseline: Double\n}\n\npublic external interface HitRegionOptions {\n    var path: Path2D? /* = null
*/\n    get()
= definedExternally\n    set(value) = definedExternally\n    var fillRule: CanvasFillRule? /* =
CanvasFillRule.NONZERO */\n    get() = definedExternally\n    set(value) = definedExternally\n    var id:
String? /* = \"\" */\n    get() = definedExternally\n    set(value) = definedExternally\n    var parentID: String? /*
= null */\n    get() = definedExternally\n    set(value) = definedExternally\n    var cursor: String? /* = \"inherit\"
*/\n    get() = definedExternally\n    set(value) = definedExternally\n    var control: Element? /* = null */\n
get() = definedExternally\n    set(value) = definedExternally\n    var label: String? /* = null */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var role: String? /* = null */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun HitRegionOptions(path:
Path2D? = null, fillRule: CanvasFillRule? = CanvasFillRule.NONZERO, id: String? = \"\", parentID: String? =
null, cursor: String? = \"inherit\", control: Element? = null, label: String? = null, role: String? = null):
HitRegionOptions {\n    val o = js(\"({})\")\n    o[\"path\"] = path\n    o[\"fillRule\"] = fillRule\n    o[\"id\"] = id\n
o[\"parentID\"] = parentID\n    o[\"cursor\"] = cursor\n    o[\"control\"] = control\n    o[\"label\"] = label\n
o[\"role\"] = role\n    return o\n}\n\n/**\n * Exposes the JavaScript
[ImageData](https://developer.mozilla.org/en/docs/Web/API/ImageData) to Kotlin\n */\npublic external open class
ImageData : ImageBitmapSource, TexImageSource {\n    constructor(sw: Int, sh: Int)\n    constructor(data:
Uint8ClampedArray, sw: Int, sh: Int = definedExternally)\n    open val width: Int\n    open val height: Int\n    open
val data: Uint8ClampedArray\n}\n\n/**\n * Exposes the JavaScript
[Path2D](https://developer.mozilla.org/en/docs/Web/API/Path2D)
to Kotlin\n */\npublic external open class Path2D() : CanvasPath {\n    constructor(path: Path2D)\n
constructor(paths: Array<Path2D>, fillRule: CanvasFillRule = definedExternally)\n    constructor(d: String)\n    fun
addPath(path: Path2D, transform: dynamic = definedExternally)\n    override fun closePath()\n    override fun
moveTo(x: Double, y: Double)\n    override fun lineTo(x: Double, y: Double)\n    override fun
quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n    override fun bezierCurveTo(cp1x: Double,
cp1y: Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n    override fun arcTo(x1: Double, y1: Double,
x2: Double, y2: Double, radius: Double)\n    override fun arcTo(x1: Double, y1: Double, x2: Double, y2: Double,
radiusX: Double, radiusY: Double, rotation: Double)\n    override fun rect(x: Double, y: Double, w: Double, h:
Double)\n    override fun arc(x: Double, y: Double, radius: Double, startAngle: Double, endAngle: Double,
anticlockwise:
Boolean /* = definedExternally */) \n    override fun ellipse(x: Double, y: Double, radiusX: Double, radiusY:
Double, rotation: Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean /* = definedExternally
*/)\n}\n\n/**\n * Exposes the JavaScript
[ImageBitmapRenderingContext](https://developer.mozilla.org/en/docs/Web/API/ImageBitmapRenderingContext)
to Kotlin\n */\npublic external abstract class ImageBitmapRenderingContext {\n    open val canvas:
HTMLCanvasElement\n    fun transferFromImageBitmap(bitmap: ImageBitmap?)\n}\n\npublic external interface
ImageBitmapRenderingContextSettings {\n    var alpha: Boolean? /* = true */\n    get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ImageBitmapRenderingContextSettings(alpha: Boolean? = true): ImageBitmapRenderingContextSettings {\n    val o
= js(\"({})\")\n    o[\"alpha\"] = alpha\n    return o\n}\n\n/**\n * Exposes the JavaScript
[CustomElementRegistry](https://developer.mozilla.org/en/docs/Web/API/CustomElementRegistry) to Kotlin\n
*/\npublic external abstract class CustomElementRegistry {\n    fun define(name: String, constructor: () -> dynamic,

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options: ElementDefinitionOptions = definedExternally)\n fun get(name: String): Any?\n fun
whenDefined(name: String): Promise<Unit>\n}\n\npublic external interface ElementDefinitionOptions {\n var
extends: String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ElementDefinitionOptions(extends:
String? = undefined): ElementDefinitionOptions {\n val o = js(\"({})\")\n o[\"extends\"] = extends\n return
o\n}\n\npublic external interface ElementContentEditable {\n var contentEditable: String\n val
isContentEditable: Boolean\n}\n\n/**\n * Exposes the JavaScript
[DataTransfer](https://developer.mozilla.org/en/docs/Web/API/DataTransfer)
to Kotlin\n */\npublic external abstract class DataTransfer {\n open var dropEffect: String\n open var
effectAllowed: String\n open val items: DataTransferItemList\n open val types: Array<out String>\n open val
files: FileList\n fun setDragImage(image: Element, x: Int, y: Int)\n fun getData(format: String): String\n fun
setData(format: String, data: String)\n fun clearData(format: String = definedExternally)\n}\n\n/**\n * Exposes
the JavaScript [DataTransferItemList](https://developer.mozilla.org/en/docs/Web/API/DataTransferItemList) to
Kotlin\n */\npublic external abstract class DataTransferItemList {\n open val length: Int\n fun add(data: String,
type: String): DataTransferItem?\n fun add(data: File): DataTransferItem?\n fun remove(index: Int)\n fun
clear()\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
DataTransferItemList.get(index:
Int): DataTransferItem? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DataTransferItem](https://developer.mozilla.org/en/docs/Web/API/DataTransferItem) to Kotlin\n */\npublic
external abstract class DataTransferItem {\n open val kind: String\n open val type: String\n fun
getAsString(_callback: ((String) -> Unit)?)\n fun getAsFile(): File?\n}\n\n/**\n * Exposes the JavaScript
[DragEvent](https://developer.mozilla.org/en/docs/Web/API/TouchEvent) to Kotlin\n */\npublic external open class
DragEvent(type: String, eventInitDict: DragEventInit = definedExternally) : MouseEvent {\n open val
dataTransfer: DataTransfer?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE:
Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
DragEventInit : MouseEventInit {\n var dataTransfer: DataTransfer? /* = null */\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun DragEventInit(dataTransfer:
DataTransfer? = null, screenX: Int? = 0, screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0,
buttons: Short? = 0, relatedTarget: EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false,
modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): DragEventInit {\n val o = js(\"({})\")\n o[\"dataTransfer\"]
= dataTransfer\n o[\"screenX\"] = screenX\n o[\"screenY\"] = screenY\n o[\"clientX\"] = clientX\n
o[\"clientY\"] = clientY\n o[\"button\"] = button\n o[\"buttons\"] = buttons\n o[\"relatedTarget\"] =
relatedTarget\n o[\"region\"] = region\n o[\"ctrlKey\"] = ctrlKey\n o[\"shiftKey\"] = shiftKey\n o[\"altKey\"]
= altKey\n o[\"metaKey\"] = metaKey\n o[\"modifierAltGraph\"] = modifierAltGraph\n
o[\"modifierCapsLock\"] = modifierCapsLock\n o[\"modifierFn\"] = modifierFn\n o[\"modifierFnLock\"] =
modifierFnLock\n o[\"modifierHyper\"] = modifierHyper\n o[\"modifierNumLock\"] = modifierNumLock\n
o[\"modifierScrollLock\"] = modifierScrollLock\n o[\"modifierSuper\"] = modifierSuper\n
o[\"modifierSymbol\"] = modifierSymbol\n o[\"modifierSymbolLock\"] = modifierSymbolLock\n o[\"view\"] =
view\n o[\"detail\"] = detail\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return

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o\n}\n\n/**\n * Exposes the JavaScript [Window](https://developer.mozilla.org/en/docs/Web/API/Window) to
Kotlin\n *\npublic external abstract class Window : EventTarget, GlobalEventHandlers, WindowEventHandlers,
WindowOrWorkerGlobalScope, WindowSessionStorage, WindowLocalStorage, GlobalPerformance,
UnionMessagePortOrWindowProxy {\n  open val window: Window\n  open val self: Window\n  open val
document: Document\n  open var name: String\n  open val location: Location\n  open val history: History\n
open val customElements: CustomElementRegistry\n  open val locationbar: BarProp\n  open val menubar:
BarProp\n  open val personalbar: BarProp\n  open val scrollbars: BarProp\n  open val statusbar: BarProp\n
open val toolbar: BarProp\n  open var status: String\n  open val closed: Boolean\n  open val frames: Window\n
open val length: Int\n  open val top: Window\n  open var opener: Any?\n  open val parent: Window\n  open val
frameElement: Element?\n
  open val navigator: Navigator\n  open val applicationCache: ApplicationCache\n  open val external: External\n
open val screen: Screen\n  open val innerWidth: Int\n  open val innerHeight: Int\n  open val scrollX: Double\n
open val pageXOffset: Double\n  open val scrollY: Double\n  open val pageYOffset: Double\n  open val
screenX: Int\n  open val screenY: Int\n  open val outerWidth: Int\n  open val outerHeight: Int\n  open val
devicePixelRatio: Double\n  fun close()\n  fun stop()\n  fun focus()\n  fun blur()\n  fun open(url: String =
definedExternally, target: String = definedExternally, features: String = definedExternally): Window?\n  fun
alert()\n  fun alert(message: String)\n  fun confirm(message: String = definedExternally): Boolean\n  fun
prompt(message: String = definedExternally, default: String = definedExternally): String?\n  fun print()\n  fun
requestAnimationFrame(callback: (Double) -> Unit): Int\n  fun cancelAnimationFrame(handle:
  Int)\n  fun postMessage(message: Any?, targetOrigin: String, transfer: Array<dynamic> = definedExternally)\n
fun captureEvents()\n  fun releaseEvents()\n  fun matchMedia(query: String): MediaQueryList\n  fun moveTo(x:
Int, y: Int)\n  fun moveBy(x: Int, y: Int)\n  fun resizeTo(x: Int, y: Int)\n  fun resizeBy(x: Int, y: Int)\n  fun
scroll(options: ScrollToOptions = definedExternally)\n  fun scroll(x: Double, y: Double)\n  fun scrollTo(options:
ScrollToOptions = definedExternally)\n  fun scrollTo(x: Double, y: Double)\n  fun scrollBy(options:
ScrollToOptions = definedExternally)\n  fun scrollBy(x: Double, y: Double)\n  fun getComputedStyle(elt:
Element, pseudoElt: String? = definedExternally):
  CSSStyleDeclaration\n}\n\n@Suppress("\nINVISIBLE_REFERENCE",
\nINVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Window.get(name: String):
dynamic = asDynamic()[name]\n\npublic external abstract class BarProp {\n  open val visible:
  Boolean\n}\n\n/**\n * Exposes the JavaScript [History](https://developer.mozilla.org/en/docs/Web/API/History) to
Kotlin\n *\npublic external abstract class History {\n  open val length: Int\n  open var scrollRestoration:
  ScrollRestoration\n  open val state: Any?\n  fun go(delta: Int = definedExternally)\n  fun back()\n  fun
  forward()\n  fun pushState(data: Any?, title: String, url: String? = definedExternally)\n  fun replaceState(data:
  Any?, title: String, url: String? = definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[Location](https://developer.mozilla.org/en/docs/Web/API/Location) to Kotlin\n *\npublic external abstract class
Location {\n  open var href: String\n  open val origin: String\n  open var protocol: String\n  open var host:
  String\n  open var hostname: String\n  open var port: String\n  open var pathname: String\n  open var search:
  String\n  open var hash: String\n  open val ancestorOrigins: Array<out String>\n  fun assign(url:
  String)\n  fun replace(url: String)\n  fun reload()\n}\n\n/**\n * Exposes the JavaScript
[PopStateEvent](https://developer.mozilla.org/en/docs/Web/API/PopStateEvent) to Kotlin\n *\npublic external
open class PopStateEvent(type: String, eventInitDict: PopStateEventInit = definedExternally) : Event {\n  open val
  state: Any?\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
    AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface PopStateEventInit
: EventInit {\n  var state: Any? /* = null */\n  get() = definedExternally\n  set(value) =
  definedExternally\n}\n\n@Suppress("\nINVISIBLE_REFERENCE",
\nINVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun PopStateEventInit(state: Any? = null,
  bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): PopStateEventInit {\n  val o
  = js("\n({})")\n  o["state"] = state\n  o["bubbles"] = bubbles\n

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o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[HashChangeEvent](https://developer.mozilla.org/en/docs/Web/API/HashChangeEvent) to Kotlin\n *\npublic
external open class HashChangeEvent(type: String, eventInitDict: HashChangeEventInit = definedExternally) :
Event {\n  open val oldURL: String\n  open val newURL: String\n\n  companion object {\n    val NONE:
Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE:
Short\n  }\n}\n\npublic external interface HashChangeEventInit : EventInit {\n  var oldURL: String? /* = "" *\n  get() = definedExternally\n  set(value) = definedExternally\n  var newURL: String? /* = "" *\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun HashChangeEventInit(oldURL:
String?
= "", newURL: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): HashChangeEventInit {\n  val o = js("{}")\n  o["oldURL"] = oldURL\n  o["newURL"] =
newURL\n  o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return
o\n}\n\n/**\n * Exposes the JavaScript
[PageTransitionEvent](https://developer.mozilla.org/en/docs/Web/API/PageTransitionEvent) to Kotlin\n *\npublic
external open class PageTransitionEvent(type: String, eventInitDict: PageTransitionEventInit = definedExternally) :
Event {\n  open val persisted: Boolean\n\n  companion object {\n    val NONE: Short\n    val
CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface PageTransitionEventInit : EventInit {\n  var persisted: Boolean? /* = false *\n  get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun PageTransitionEventInit(persisted:
Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
PageTransitionEventInit {\n  val o = js("{}")\n  o["persisted"] = persisted\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[BeforeUnloadEvent](https://developer.mozilla.org/en/docs/Web/API/BeforeUnloadEvent) to Kotlin\n *\npublic
external open class BeforeUnloadEvent : Event {\n  var returnValue: String\n\n  companion object {\n    val
NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}\n\npublic external abstract class ApplicationCache : EventTarget {\n  open
val status: Short\n  open var onchecking: ((Event) -> dynamic)?\n  open var onerror: ((Event) -> dynamic)?\n
  open var onnoupdate: ((Event) -> dynamic)?\n  open var ondownloading: ((Event) -> dynamic)?\n  open var
onprogress: ((ProgressEvent) -> dynamic)?\n  open var onupdateready: ((Event) -> dynamic)?\n  open var
oncached: ((Event) -> dynamic)?\n  open var onobsolete: ((Event) -> dynamic)?\n  fun update()\n  fun abort()\n
fun swapCache()\n\n  companion object {\n    val UNCACHED: Short\n    val IDLE: Short\n    val
CHECKING: Short\n    val DOWNLOADING: Short\n    val UPDATEREADY: Short\n    val OBSOLETE:
Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[NavigatorOnLine](https://developer.mozilla.org/en/docs/Web/API/NavigatorOnLine) to Kotlin\n *\npublic
external interface NavigatorOnLine {\n  val onLine: Boolean\n}\n\n/**\n * Exposes the JavaScript
[ErrorEvent](https://developer.mozilla.org/en/docs/Web/API/ErrorEvent) to Kotlin\n *\npublic external open class
ErrorEvent(type: String, eventInitDict: ErrorEventInit = definedExternally)
: Event {\n  open val message: String\n  open val filename: String\n  open val lineno: Int\n  open val colno:
Int\n  open val error: Any?\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE:
Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
ErrorEventInit : EventInit {\n  var message: String? /* = "" *\n  get() = definedExternally\n  set(value) =
definedExternally\n  var filename: String? /* = "" *\n  get() = definedExternally\n  set(value) =
definedExternally\n  var lineno: Int? /* = 0 *\n  get() = definedExternally\n  set(value) =
definedExternally\n  var colno: Int? /* = 0 *\n  get() = definedExternally\n  set(value) =
definedExternally\n  var error: Any? /* = null *\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",

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\invisible_member\@kotlin.internal.InlineOnly\npublic
inline fun ErrorEventInit(message: String? = "", filename: String? = "", lineno: Int? = 0, colno: Int? = 0, error:
Any? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ErrorEventInit
{
    val o = js("{}")
    o["message"] = message
    o["filename"] = filename
    o["lineno"] = lineno
    o["colno"] = colno
    o["error"] = error
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}
Exposes the JavaScript
[PromiseRejectionEvent](https://developer.mozilla.org/en/docs/Web/API/PromiseRejectionEvent) to Kotlin
\npublic external open class PromiseRejectionEvent(type: String, eventInitDict: PromiseRejectionEventInit) :
Event {
    open val promise: Promise<Any?>
    open val reason: Any?
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}
\npublic external interface PromiseRejectionEventInit : EventInit {
    var promise: Promise<Any?>
    var reason: Any?
    get() = definedExternally
    set(value) = definedExternally
}
\n@Suppress("invisible_reference",
invisible_member)@kotlin.internal.InlineOnly\npublic inline fun PromiseRejectionEventInit(promise: Promise<Any?>, reason: Any? = undefined, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): PromiseRejectionEventInit {
    val o = js("{}")
    o["promise"] = promise
    o["reason"] = reason
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}
Exposes the JavaScript
[GlobalEventHandlers](https://developer.mozilla.org/en/docs/Web/API/GlobalEventHandlers) to Kotlin
\npublic external interface GlobalEventHandlers {
    var onabort: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onblur: ((FocusEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oncancel: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oncanplay: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oncanplaythrough: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onchange: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onclick: ((MouseEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onclose: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oncontextmenu: ((MouseEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oncuechange: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondblclick: ((MouseEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondrag: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondragend: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondragenter: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondragexit: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondragleave: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondragover: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondragstart: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondrop: ((DragEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var ondurationchange: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onemptied: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onended: ((Event) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var onfocus: ((FocusEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oninput: ((InputEvent) -> dynamic)?
    get() = definedExternally
    set(value) = definedExternally
    var oninvalid: ((Event) ->

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dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n    var onkeydown: ((KeyboardEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onkeypress: ((KeyboardEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onkeyup: ((KeyboardEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onload: ((Event) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n    var onloadeddata: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onloadedmetadata: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onloadend: ((Event) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n    var onloadstart: ((ProgressEvent) -> dynamic)?\n
get() = definedExternally\n    set(value)
= definedExternally\n    var onmousedown: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onmouseenter: ((MouseEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onmouseleave: ((MouseEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onmousemove: ((MouseEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onmouseout:
((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onmouseover: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onmouseup: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onwheel: ((WheelEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n
    var onpause: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onplay: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onplaying: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onprogress: ((ProgressEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onratechange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onreset: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onresize: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onscroll: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onseeked: ((Event) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n    var onseeking: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onselect: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onshow: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onstalled: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onsubmit: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onsuspend: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var ontimeupdate: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var ontoggle: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n
    var onvolumechange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onwaiting: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var ongotpointercapture: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onlostpointercapture: ((PointerEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onpointerdown: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onpointermove: ((PointerEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onpointerup:
((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onpointercancel: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n

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var onpointerover: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n var onpointerout: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n var onpointerenter: ((PointerEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n var onpointerleave: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n\n\n**\n * Exposes the JavaScript
[WindowEventHandlers](https://developer.mozilla.org/en/docs/Web/API/WindowEventHandlers) to Kotlin\n
*\npublic external interface WindowEventHandlers {\n var onafterprint: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n var onbeforeprint: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n var onbeforeunload: ((BeforeUnloadEvent)
-> String?)?\n    get() = definedExternally\n    set(value) = definedExternally\n var onhashchange:
((HashChangeEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n var
onlanguagechange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onmessage: ((MessageEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n var onoffline: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n var ononline: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n var onpagehide: ((PageTransitionEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n var onpageshow: ((PageTransitionEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n var onpopstate: ((PopStateEvent)
-> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n var onrejectionhandled:
((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n var onstorage:
((StorageEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n var
onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n var onunload: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n\n\npublic external interface DocumentAndElementEventHandlers {\n var oncopy:
((ClipboardEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n var oncut:
((ClipboardEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n var
onpaste: ((ClipboardEvent) -> dynamic)?\n    get() = definedExternally\n
    set(value) = definedExternally\n\n\n**\n * Exposes the JavaScript
[WindowOrWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WindowOrWorkerGlobalScope)
to Kotlin\n
*\npublic external interface WindowOrWorkerGlobalScope {\n val origin: String\n val caches:
CacheStorage\n fun btoa(data: String): String\n fun atob(data: String): String\n fun setTimeout(handler:
dynamic, timeout: Int = definedExternally, vararg arguments: Any?): Int\n fun clearTimeout(handle: Int =
definedExternally)\n fun setInterval(handler: dynamic, timeout: Int = definedExternally, vararg arguments: Any?):
Int\n fun clearInterval(handle: Int = definedExternally)\n fun createImageBitmap(image: ImageBitmapSource,
options: ImageBitmapOptions = definedExternally): Promise<ImageBitmap>\n fun createImageBitmap(image:
ImageBitmapSource, sx: Int, sy: Int, sw: Int, sh: Int, options: ImageBitmapOptions = definedExternally):
Promise<ImageBitmap>\n fun fetch(input: dynamic,
init: RequestInit = definedExternally): Promise<Response>\n\n\n**\n * Exposes the JavaScript
[Navigator](https://developer.mozilla.org/en/docs/Web/API/Navigator) to Kotlin\n
*\npublic external abstract class
Navigator : NavigatorID, NavigatorLanguage, NavigatorOnLine, NavigatorContentUtils, NavigatorCookies,
NavigatorPlugins, NavigatorConcurrentHardware {\n open val clipboard: Clipboard\n open val mediaDevices:
MediaDevices\n open val maxTouchPoints: Int\n open val serviceWorker: ServiceWorkerContainer\n fun
requestMediaKeySystemAccess(keySystem: String, supportedConfigurations:
Array<MediaKeySystemConfiguration>): Promise<MediaKeySystemAccess>\n fun getUserMedia(constraints:
MediaStreamConstraints, successCallback: (MediaStream) -> Unit, errorCallback: (dynamic) -> Unit)\n fun
vibrate(pattern: dynamic): Boolean\n\n\n**\n * Exposes the JavaScript
[NavigatorID](https://developer.mozilla.org/en/docs/Web/API/NavigatorID) to Kotlin\n
*\npublic external interface

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NavigatorID {\n  val appCodeName: String\n  val appName: String\n  val appVersion: String\n  val platform:
String\n  val product: String\n  val productSub: String\n  val userAgent: String\n  val vendor: String\n  val
vendorSub: String\n  val oscpu: String\n  fun taintEnabled(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorLanguage](https://developer.mozilla.org/en/docs/Web/API/NavigatorLanguage) to Kotlin\n */\npublic
external interface NavigatorLanguage {\n  val language: String\n  val languages: Array<out String>\n}\n\npublic
external interface NavigatorContentUtils {\n  fun registerProtocolHandler(scheme: String, url: String, title:
String)\n  fun registerContentHandler(mimeType: String, url: String, title: String)\n  fun
isProtocolHandlerRegistered(scheme: String, url: String): String\n  fun isContentHandlerRegistered(mimeType:
String, url: String): String\n  fun unregisterProtocolHandler(scheme: String, url: String)\n  fun
unregisterContentHandler(mimeType:
String, url: String)\n}\n\npublic external interface NavigatorCookies {\n  val cookieEnabled: Boolean\n}\n\n/**\n
* Exposes the JavaScript [NavigatorPlugins](https://developer.mozilla.org/en/docs/Web/API/NavigatorPlugins) to
Kotlin\n */\npublic external interface NavigatorPlugins {\n  val plugins: PluginArray\n  val mimeTypes:
MimeTypeArray\n  fun javaEnabled(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[PluginArray](https://developer.mozilla.org/en/docs/Web/API/PluginArray) to Kotlin\n */\npublic external abstract
class PluginArray : ItemArrayLike<Plugin> {\n  fun refresh(reload: Boolean = definedExternally)\n  override fun
item(index: Int): Plugin?\n  fun namedItem(name: String):
Plugin?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun PluginArray.get(index: Int):
Plugin? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
inline operator fun PluginArray.get(name: String): Plugin? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[MimeTypeArray](https://developer.mozilla.org/en/docs/Web/API/MimeTypeArray) to Kotlin\n */\npublic external
abstract class MimeTypeArray : ItemArrayLike<MimeType> {\n  override fun item(index: Int): MimeType?\n
fun namedItem(name: String): MimeType?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun MimeTypeArray.get(index:
Int): MimeType? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun MimeTypeArray.get(name:
String): MimeType? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[Plugin](https://developer.mozilla.org/en/docs/Web/API/Plugin) to Kotlin\n */\npublic external abstract class Plugin
: ItemArrayLike<MimeType> {\n  open val name: String\n  open val description: String\n  open
val filename: String\n  override fun item(index: Int): MimeType?\n  fun namedItem(name: String):
MimeType?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Plugin.get(index: Int):
MimeType? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Plugin.get(name: String):
MimeType? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[MimeType](https://developer.mozilla.org/en/docs/Web/API/MimeType) to Kotlin\n */\npublic external abstract
class MimeType {\n  open val type: String\n  open val description: String\n  open val suffixes: String\n  open
val enabledPlugin: Plugin\n}\n\n/**\n * Exposes the JavaScript
[ImageBitmap](https://developer.mozilla.org/en/docs/Web/API/ImageBitmap) to Kotlin\n */\npublic external
abstract class ImageBitmap : CanvasImageSource, TexImageSource {\n  open val width: Int\n  open val height:
Int\n  fun close()\n}\n\npublic external interface ImageBitmapOptions {\n  var imageOrientation:
ImageOrientation? /* = ImageOrientation.NONE */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var premultiplyAlpha: PremultiplyAlpha? /* = PremultiplyAlpha.DEFAULT */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var colorSpaceConversion: ColorSpaceConversion? /* =
ColorSpaceConversion.DEFAULT */\n  get() = definedExternally\n  set(value) = definedExternally\n  var
resizeWidth: Int?\n  get() = definedExternally\n  set(value) = definedExternally\n  var resizeHeight: Int?\n
}

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definedExternally, reason: String = definedExternally)\n fun send(data: String)\n fun send(data: Blob)\n fun
send(data: ArrayBuffer)\n fun send(data: ArrayBufferView)\n\n companion object {\n val CONNECTING:
Short\n val OPEN: Short\n val CLOSING: Short\n val CLOSED: Short\n }\n}\n\n/**\n * Exposes the
JavaScript [CloseEvent](https://developer.mozilla.org/en/docs/Web/API/CloseEvent) to Kotlin\n *\npublic external
open class CloseEvent(type: String, eventInitDict: CloseEventInit = definedExternally)
: Event {\n open val wasClean: Boolean\n open val code: Short\n open val reason: String\n\n companion
object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface CloseEventInit : EventInit {\n var wasClean:
Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var code: Short? /*
= 0 */\n get() = definedExternally\n set(value) = definedExternally\n var reason: String? /* = "" */\n
get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CloseEventInit(wasClean: Boolean? =
false, code: Short? = 0, reason: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): CloseEventInit {\n val o = js("{}")\n o["wasClean"]
= wasClean\n o["code"] = code\n o["reason"] = reason\n o["bubbles"] = bubbles\n o["cancelable"] =
cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[MessageChannel](https://developer.mozilla.org/en/docs/Web/API/MessageChannel) to Kotlin\n *\npublic external
open class MessageChannel {\n open val port1: MessagePort\n open val port2: MessagePort\n}\n\n/**\n *
Exposes the JavaScript [MessagePort](https://developer.mozilla.org/en/docs/Web/API/MessagePort) to Kotlin\n
*\npublic external abstract class MessagePort : EventTarget, UnionMessagePortOrWindowProxy,
UnionMessagePortOrServiceWorker, UnionClientOrMessagePortOrServiceWorker {\n open var onmessage:
((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n fun start()\n fun close()\n}\n\n/**\n * Exposes the JavaScript
[BroadcastChannel](https://developer.mozilla.org/en/docs/Web/API/BroadcastChannel)
to Kotlin\n *\npublic external open class BroadcastChannel(name: String) : EventTarget {\n open val name:
String\n var onmessage: ((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?)\n fun
close()\n}\n\n/**\n * Exposes the JavaScript
[WorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WorkerGlobalScope) to Kotlin\n *\npublic
external abstract class WorkerGlobalScope : EventTarget, WindowOrWorkerGlobalScope, GlobalPerformance {\n
open val self: WorkerGlobalScope\n open val location: WorkerLocation\n open val navigator:
WorkerNavigator\n open var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n open var
onlanguagechange: ((Event) -> dynamic)?\n open var onoffline: ((Event) -> dynamic)?\n open var ononline:
((Event) -> dynamic)?\n open var onrejectionhandled: ((Event) -> dynamic)?\n open var onunhandledrejection:
((PromiseRejectionEvent) -> dynamic)?\n fun importScripts(vararg urls: String)\n}\n\n/**\n * Exposes
the JavaScript
[DedicatedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/DedicatedWorkerGlobalScope) to
Kotlin\n *\npublic external abstract class DedicatedWorkerGlobalScope : WorkerGlobalScope {\n open var
onmessage: ((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n fun close()\n}\n\n/**\n * Exposes the JavaScript
[SharedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/SharedWorkerGlobalScope) to
Kotlin\n *\npublic external abstract class SharedWorkerGlobalScope : WorkerGlobalScope {\n open val name:
String\n open val applicationCache: ApplicationCache\n open var onconnect: ((Event) -> dynamic)?\n fun
close()\n}\n\n/**\n * Exposes the JavaScript
[AbstractWorker](https://developer.mozilla.org/en/docs/Web/API/AbstractWorker) to Kotlin\n *\npublic external
interface AbstractWorker {\n var onerror: ((Event) -> dynamic)?\n get() = definedExternally\n set(value)
= definedExternally\n}\n\n/**\n * Exposes the JavaScript
[Worker](https://developer.mozilla.org/en/docs/Web/API/Worker) to Kotlin\n *\npublic external open class
Worker(scriptURL: String, options: WorkerOptions = definedExternally) : EventTarget, AbstractWorker {\n var

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onmessage: ((MessageEvent) -> dynamic)?\n  override var onerror: ((Event) -> dynamic)?\n  fun terminate()\n  fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\npublic external interface
WorkerOptions {\n  var type: WorkerType? /* = WorkerType.CLASSIC */\n  get() = definedExternally\n  set(value) = definedExternally\n  var credentials: RequestCredentials? /* = RequestCredentials.OMIT */\n  get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun WorkerOptions(type: WorkerType? =
WorkerType.CLASSIC, credentials: RequestCredentials?
= RequestCredentials.OMIT): WorkerOptions {\n  val o = js(\"({})\")\n  o[\"type\"] = type\n  o[\"credentials\"]
= credentials\n  return o\n}\n\n/**\n * Exposes the JavaScript
[SharedWorker](https://developer.mozilla.org/en/docs/Web/API/SharedWorker) to Kotlin\n */\npublic external open
class SharedWorker(scriptURL: String, name: String = definedExternally, options: WorkerOptions =
definedExternally) : EventTarget, AbstractWorker {\n  open val port: MessagePort\n  override var onerror:
((Event) -> dynamic)?\n}\n\n/**\n * Exposes the JavaScript
[NavigatorConcurrentHardware](https://developer.mozilla.org/en/docs/Web/API/NavigatorConcurrentHardware) to
Kotlin\n */\npublic external interface NavigatorConcurrentHardware {\n  val hardwareConcurrency:
Number\n}\n\n/**\n * Exposes the JavaScript
[WorkerNavigator](https://developer.mozilla.org/en/docs/Web/API/WorkerNavigator) to Kotlin\n */\npublic
external abstract class WorkerNavigator : NavigatorID, NavigatorLanguage, NavigatorOnLine,
NavigatorConcurrentHardware {\n  open val serviceWorker: ServiceWorkerContainer\n}\n\n/**\n * Exposes the
JavaScript [WorkerLocation](https://developer.mozilla.org/en/docs/Web/API/WorkerLocation) to Kotlin\n */\n
public external abstract class WorkerLocation {\n  open val href: String\n  open val origin: String\n  open val
protocol: String\n  open val host: String\n  open val hostname: String\n  open val port: String\n  open val
pathname: String\n  open val search: String\n  open val hash: String\n}\n\n/**\n * Exposes the JavaScript
[Storage](https://developer.mozilla.org/en/docs/Web/API/Storage) to Kotlin\n */\npublic external abstract class
Storage {\n  open val length: Int\n  fun key(index: Int): String?\n  fun removeItem(key: String)\n  fun clear()\n
fun getItem(key: String): String?\n  fun setItem(key: String, value:
String)\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
Storage.get(key: String): String? = asDynamic()[key]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Storage.set(key: String, value:
String) { asDynamic()[key] = value }\n\n/**\n * Exposes the JavaScript
[WindowSessionStorage](https://developer.mozilla.org/en/docs/Web/API/WindowSessionStorage) to Kotlin\n */\n
public external interface WindowSessionStorage {\n  val sessionStorage: Storage\n}\n\n/**\n * Exposes the
JavaScript [WindowLocalStorage](https://developer.mozilla.org/en/docs/Web/API/WindowLocalStorage) to
Kotlin\n */\npublic external interface WindowLocalStorage {\n  val localStorage: Storage\n}\n\n/**\n * Exposes
the JavaScript [StorageEvent](https://developer.mozilla.org/en/docs/Web/API/StorageEvent) to Kotlin\n */\n
public external open class StorageEvent(type: String, eventInitDict: StorageEventInit = definedExternally) : Event {\n
  open val key: String?\n  open val oldValue: String?\n  open val newValue:
String?\n  open val url: String\n  open val storageArea: Storage?\n\n  companion object {\n    val NONE:
Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE:
Short\n  }\n}\n\npublic external interface StorageEventInit : EventInit {\n  var key: String? /* = null */\n  get()
= definedExternally\n  set(value) = definedExternally\n  var oldValue: String? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var newValue: String? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var url: String? /* = \"\" */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var storageArea: Storage? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun StorageEventInit(key:

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var marginWidth: String\n\n companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE:
Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } }\n\npublic external abstract class
HTMLDirectoryElement : HTMLElement {\n    open var compact: Boolean\n\n    companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED:
Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } }\n\n/**\n * Exposes the JavaScript
[HTMLFontElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFontElement) to Kotlin\n *\npublic
external abstract class HTMLFontElement : HTMLElement {\n    open var color: String\n    open var face: String\n
open var size: String\n\n    companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n
    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } }\n\npublic external
interface External {\n    fun AddSearchProvider()\n    fun IsSearchProviderInstalled()\n}\n\npublic external interface
EventInit {\n    var bubbles: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n    var cancelable: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n    var composed: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun EventInit(bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): EventInit {\n    val o = js(\"({})\")\n    o[\"bubbles\"] =
bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return o\n}\n\n/**\n * Exposes the
JavaScript [CustomEvent](https://developer.mozilla.org/en/docs/Web/API/CustomEvent) to Kotlin\n *\npublic
external open class CustomEvent(type: String, eventInitDict: CustomEventInit = definedExternally) : Event {\n
open val detail: Any?\n    fun initCustomEvent(type: String, bubbles: Boolean, cancelable: Boolean, detail:
Any?)\n\n    companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n } }\n\npublic external interface CustomEventInit :
EventInit {\n    var detail: Any? /* = null */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",

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\ "INVISIBLE_MEMBER" \n @kotlin.internal.InlineOnly \n public
inline fun CustomEventInit(detail: Any? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): CustomEventInit { \n val o = js("{}") \n o["detail"] = detail \n o["bubbles"] = bubbles \n
o["cancelable"] = cancelable \n o["composed"] = composed \n return o \n } \n \n public external interface
EventListenerOptions { \n var capture: Boolean? /* = false */ \n get() = definedExternally \n set(value) =
definedExternally \n } \n \n @Suppress("INVISIBLE_REFERENCE"),
\ "INVISIBLE_MEMBER" \n @kotlin.internal.InlineOnly \n public inline fun EventListenerOptions(capture:
Boolean? = false): EventListenerOptions { \n val o = js("{}") \n o["capture"] = capture \n return
o \n } \n \n public external interface AddEventListenerOptions : EventListenerOptions { \n var passive: Boolean? /* =
false */ \n get() = definedExternally \n set(value) = definedExternally \n var once: Boolean? /* = false */ \n
get() = definedExternally \n
set(value) = definedExternally \n } \n \n @Suppress("INVISIBLE_REFERENCE"),
\ "INVISIBLE_MEMBER" \n @kotlin.internal.InlineOnly \n public inline fun AddEventListenerOptions(passive:
Boolean? = false, once: Boolean? = false, capture: Boolean? = false): AddEventListenerOptions { \n val o =
js("{}") \n o["passive"] = passive \n o["once"] = once \n o["capture"] = capture \n return o \n } \n \n public
external interface NonElementParentNode { \n fun getElementById(elementId: String): Element? \n } \n \n /** \n *
Exposes the JavaScript
[DocumentOrShadowRoot](https://developer.mozilla.org/en/docs/Web/API/DocumentOrShadowRoot) to Kotlin \n
*/ \n public external interface DocumentOrShadowRoot { \n val fullscreenElement: Element? \n get() =
definedExternally \n } \n \n /** \n * Exposes the JavaScript
[ParentNode](https://developer.mozilla.org/en/docs/Web/API/ParentNode) to Kotlin \n */ \n public external interface
ParentNode { \n val children: HTMLCollection \n val firstElementChild:
Element? \n get() = definedExternally \n val lastElementChild: Element? \n get() = definedExternally \n
val childElementCount: Int \n fun prepend(vararg nodes: dynamic) \n fun append(vararg nodes: dynamic) \n fun
querySelector(selectors: String): Element? \n fun querySelectorAll(selectors: String): NodeList \n } \n \n /** \n *
Exposes the JavaScript
[NonDocumentTypeChildNode](https://developer.mozilla.org/en/docs/Web/API/NonDocumentTypeChildNode) to
Kotlin \n */ \n public external interface NonDocumentTypeChildNode { \n val previousElementSibling: Element? \n
get() = definedExternally \n val nextElementSibling: Element? \n get() = definedExternally \n } \n \n /** \n *
Exposes the JavaScript [ChildNode](https://developer.mozilla.org/en/docs/Web/API/ChildNode) to Kotlin \n
*/ \n public external interface ChildNode { \n fun before(vararg nodes: dynamic) \n fun after(vararg nodes:
dynamic) \n fun replaceWith(vararg nodes: dynamic) \n fun remove() \n } \n \n /** \n *
Exposes the JavaScript [Slotable](https://developer.mozilla.org/en/docs/Web/API/Slotable) to Kotlin \n */ \n public
external interface Slotable { \n val assignedSlot: HTMLSlotElement? \n get() = definedExternally \n } \n \n /** \n *
Exposes the JavaScript [NodeList](https://developer.mozilla.org/en/docs/Web/API/NodeList) to Kotlin \n */ \n public
external abstract class NodeList : ItemArrayLike<Node> { \n override fun item(index: Int):
Node? \n } \n \n @Suppress("INVISIBLE_REFERENCE"),
\ "INVISIBLE_MEMBER" \n @kotlin.internal.InlineOnly \n public inline operator fun NodeList.get(index: Int):
Node? = asDynamic()[index] \n \n /** \n * Exposes the JavaScript
[HTMLCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLCollection) to Kotlin \n */ \n public
external abstract class HTMLCollection : ItemArrayLike<Element>, UnionElementOrHTMLCollection { \n
override fun item(index: Int): Element? \n fun namedItem(name: String):
Element? \n } \n \n @Suppress("INVISIBLE_REFERENCE"),
\ "INVISIBLE_MEMBER" \n @kotlin.internal.InlineOnly \n public
inline operator fun HTMLCollection.get(index: Int): Element? =
asDynamic()[index] \n \n @Suppress("INVISIBLE_REFERENCE"),
\ "INVISIBLE_MEMBER" \n @kotlin.internal.InlineOnly \n public inline operator fun HTMLCollection.get(name:
String): Element? = asDynamic()[name] \n \n /** \n * Exposes the JavaScript

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[MutationObserver](https://developer.mozilla.org/en/docs/Web/API/MutationObserver) to Kotlin\n *\npublic
external open class MutationObserver(callback: (Array<MutationRecord>, MutationObserver) -> Unit) {\n fun
observe(target: Node, options: MutationObserverInit = definedExternally)\n fun disconnect()\n fun
takeRecords(): Array<MutationRecord>\n}\n\n/**\n * Exposes the JavaScript
[MutationObserverInit](https://developer.mozilla.org/en/docs/Web/API/MutationObserverInit) to Kotlin\n
*\npublic external interface MutationObserverInit {\n var childList: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n
var attributes: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var
characterData: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var subtree:
Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var
attributeOldValue: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var
characterDataOldValue: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var
attributeFilter: Array<String>?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MutationObserverInit(childList:
Boolean? = false, attributes: Boolean? = undefined, characterData: Boolean? = undefined, subtree: Boolean? = false,
attributeOldValue: Boolean? = undefined, characterDataOldValue:
Boolean? = undefined, attributeFilter: Array<String>? = undefined): MutationObserverInit {\n val o =
js(\"({})\")\n o[\"childList\"] = childList\n o[\"attributes\"] = attributes\n o[\"characterData\"] =
characterData\n o[\"subtree\"] = subtree\n o[\"attributeOldValue\"] = attributeOldValue\n
o[\"characterDataOldValue\"] = characterDataOldValue\n o[\"attributeFilter\"] = attributeFilter\n return
o\n}\n\n/**\n * Exposes the JavaScript
[MutationRecord](https://developer.mozilla.org/en/docs/Web/API/MutationRecord) to Kotlin\n *\npublic external
abstract class MutationRecord {\n open val type: String\n open val target: Node\n open val addedNodes:
NodeList\n open val removedNodes: NodeList\n open val previousSibling: Node?\n open val nextSibling:
Node?\n open val attributeName: String?\n open val attributeNamespace: String?\n open val oldValue:
String?\n}\n\n/**\n * Exposes the JavaScript [Node](https://developer.mozilla.org/en/docs/Web/API/Node)
to Kotlin\n *\npublic external abstract class Node : EventTarget {\n open val nodeType: Short\n open val
nodeName: String\n open val baseURI: String\n open val isConnected: Boolean\n open val ownerDocument:
Document?\n open val parentNode: Node?\n open val parentElement: Element?\n open val childNodes:
NodeList\n open val firstChild: Node?\n open val lastChild: Node?\n open val previousSibling: Node?\n
open val nextSibling: Node?\n open var nodeValue: String?\n open var textContent: String?\n fun
getRootNode(options: GetRootNodeOptions = definedExternally): Node\n fun hasChildNodes(): Boolean\n fun
normalize()\n fun cloneNode(deep: Boolean = definedExternally): Node\n fun isEqualNode(otherNode: Node?):
Boolean\n fun isSameNode(otherNode: Node?): Boolean\n fun compareDocumentPosition(other: Node): Short\n
fun contains(other: Node?): Boolean\n fun lookupPrefix(namespace: String?): String?\n fun
lookupNamespaceURI(prefix: String?): String?\n fun isDefaultNamespace(namespace: String?): Boolean\n fun
insertBefore(node: Node, child: Node?): Node\n fun appendChild(node: Node): Node\n fun replaceChild(node:
Node, child: Node): Node\n fun removeChild(child: Node): Node\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n

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val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n\npublic external interface
GetRootNodeOptions {\n var composed: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun GetRootNodeOptions(composed:
Boolean? = false): GetRootNodeOptions {\n val o = js(\"({})\")\n o[\"composed\"] = composed\n return
o\n}\n\n/**\n * Exposes the JavaScript [Document](https://developer.mozilla.org/en/docs/Web/API/Document) to
Kotlin\n */\npublic external open class Document : Node, GlobalEventHandlers,
DocumentAndElementEventHandlers, NonElementParentNode, DocumentOrShadowRoot, ParentNode,
GeometryUtils {\n open val implementation: DOMImplementation\n open val URL: String\n open val
documentURI: String\n open val origin: String\n open val compatMode: String\n open val characterSet:
String\n open val
charset: String\n open val inputEncoding: String\n open val contentType: String\n open val doctype:
DocumentType?\n open val documentElement: Element?\n open val location: Location?\n var domain:
String\n open val referrer: String\n var cookie: String\n open val lastModified: String\n open val readyState:
DocumentReadyState\n var title: String\n var dir: String\n var body: HTMLElement?\n open val head:
HTMLHeadElement?\n open val images: HTMLCollection\n open val embeds: HTMLCollection\n open val
plugins: HTMLCollection\n open val links: HTMLCollection\n open val forms: HTMLCollection\n open val
scripts: HTMLCollection\n open val currentScript: HTMLScriptElement?\n open val defaultView:
Window?\n open val activeElement: Element?\n var designMode: String\n var onreadystatechange: ((Event) ->
dynamic)?\n var fgColor: String\n var linkColor: String\n var vlinkColor: String\n var alinkColor: String\n
var bgColor: String\n open val anchors: HTMLCollection\n open val applets: HTMLCollection\n open val
all: HTMLAllCollection\n open val scrollingElement: Element?\n open val styleSheets: StyleSheetList\n open
val rootElement: SVGSVGElement?\n open val fullscreenEnabled: Boolean\n open val fullscreen: Boolean\n
var onfullscreenchange: ((Event) -> dynamic)?\n var onfullscreenerror: ((Event) -> dynamic)?\n override var
onabort: ((Event) -> dynamic)?\n override var onblur: ((FocusEvent) -> dynamic)?\n override var oncancel:
((Event) -> dynamic)?\n override var oncanplay: ((Event) -> dynamic)?\n override var oncanplaythrough:
((Event) -> dynamic)?\n override var onchange: ((Event) -> dynamic)?\n override var onclick: ((MouseEvent) ->
dynamic)?\n override var onclose: ((Event) -> dynamic)?\n override var oncontextmenu: ((MouseEvent) ->
dynamic)?\n override var oncuechange: ((Event) -> dynamic)?\n override var ondblclick: ((MouseEvent)
-> dynamic)?\n override var ondrag: ((DragEvent) -> dynamic)?\n override var ondragend: ((DragEvent) ->
dynamic)?\n override var ondragenter: ((DragEvent) -> dynamic)?\n override var ondragexit: ((DragEvent) ->
dynamic)?\n override var ondragleave: ((DragEvent) -> dynamic)?\n override var ondragover: ((DragEvent) ->
dynamic)?\n override var ondragstart: ((DragEvent) -> dynamic)?\n override var ondrop: ((DragEvent) ->
dynamic)?\n override var ondurationchange: ((Event) -> dynamic)?\n override var onemptied: ((Event) ->
dynamic)?\n override var onended: ((Event) -> dynamic)?\n override var onerror: ((dynamic, String, Int, Int,
Any?) -> dynamic)?\n override var onfocus: ((FocusEvent) -> dynamic)?\n override var oninput: ((InputEvent) ->
dynamic)?\n override var oninvalid: ((Event) -> dynamic)?\n override var onkeydown: ((KeyboardEvent) ->
dynamic)?\n override var onkeypress: ((KeyboardEvent) -> dynamic)?\n override var onkeyup:
((KeyboardEvent) -> dynamic)?\n override var onload: ((Event) -> dynamic)?\n override var onloadeddata:
((Event) -> dynamic)?\n override var onloadedmetadata: ((Event) -> dynamic)?\n override var onloadend:
((Event) -> dynamic)?\n override var onloadstart: ((ProgressEvent) -> dynamic)?\n override var onmousedown:
((MouseEvent) -> dynamic)?\n override var onmouseenter: ((MouseEvent) -> dynamic)?\n override var
onmouseleave: ((MouseEvent) -> dynamic)?\n override var onmousemove: ((MouseEvent) -> dynamic)?\n
override var onmouseout: ((MouseEvent) -> dynamic)?\n override var onmouseover: ((MouseEvent) ->
dynamic)?\n override var onmouseup: ((MouseEvent) -> dynamic)?\n override var onwheel: ((WheelEvent) ->
dynamic)?\n override var onpause: ((Event) -> dynamic)?\n override var onplay: ((Event) -> dynamic)?\n
override var onplaying: ((Event) -> dynamic)?\n override var onprogress: ((ProgressEvent) -> dynamic)?\n
override var onratechange:

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((Event) -> dynamic)?\n  override var onreset: ((Event) -> dynamic)?\n  override var onresize: ((Event) ->
dynamic)?\n  override var onscroll: ((Event) -> dynamic)?\n  override var onseeked: ((Event) -> dynamic)?\n
override var onseeking: ((Event) -> dynamic)?\n  override var onselect: ((Event) -> dynamic)?\n  override var
onshow: ((Event) -> dynamic)?\n  override var onstalled: ((Event) -> dynamic)?\n  override var onsubmit:
((Event) -> dynamic)?\n  override var onsuspend: ((Event) -> dynamic)?\n  override var ontimeupdate: ((Event) -
> dynamic)?\n  override var ontoggle: ((Event) -> dynamic)?\n  override var onvolumechange: ((Event) ->
dynamic)?\n  override var onwaiting: ((Event) -> dynamic)?\n  override var ongotpointercapture: ((PointerEvent)
-> dynamic)?\n  override var onlostpointercapture: ((PointerEvent) -> dynamic)?\n  override var onpointerdown:
((PointerEvent) -> dynamic)?\n  override var onpointermove: ((PointerEvent) -> dynamic)?\n
  override var onpointerup: ((PointerEvent) -> dynamic)?\n  override var onpointercancel: ((PointerEvent) ->
dynamic)?\n  override var onpointerover: ((PointerEvent) -> dynamic)?\n  override var onpointerout:
((PointerEvent) -> dynamic)?\n  override var onpointerenter: ((PointerEvent) -> dynamic)?\n  override var
onpointerleave: ((PointerEvent) -> dynamic)?\n  override var oncopy: ((ClipboardEvent) -> dynamic)?\n  override
var oncut: ((ClipboardEvent) -> dynamic)?\n  override var onpaste: ((ClipboardEvent) -> dynamic)?\n  override
val fullscreenElement: Element?\n  override val children: HTMLCollection\n  override val firstElementChild:
Element?\n  override val lastElementChild: Element?\n  override val childElementCount: Int\n  fun
getElementsByTagName(qualifiedName: String): HTMLCollection\n  fun
getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection\n  fun
getElementsByClassName(classNames: String): HTMLCollection\n  fun createElement(localName:
String, options: ElementCreationOptions = definedExternally): Element\n  fun createElementNS(namespace:
String?, qualifiedName: String, options: ElementCreationOptions = definedExternally): Element\n  fun
createDocumentFragment(): DocumentFragment\n  fun createTextNode(data: String): Text\n  fun
createCDATASection(data: String): CDATASection\n  fun createComment(data: String): Comment\n  fun
createProcessingInstruction(target: String, data: String): ProcessingInstruction\n  fun importNode(node: Node,
deep: Boolean = definedExternally): Node\n  fun adoptNode(node: Node): Node\n  fun
createAttribute(localName: String): Attr\n  fun createAttributeNS(namespace: String?, qualifiedName: String):
Attr\n  fun createEvent(`interface`: String): Event\n  fun createRange(): Range\n  fun createNodeIterator(root:
Node, whatToShow: Int = definedExternally, filter: NodeFilter? = definedExternally): NodeIterator\n  fun
createNodeIterator(root: Node, whatToShow:
Int = definedExternally, filter: ((Node) -> Short)? = definedExternally): NodeIterator\n  fun
createTreeWalker(root: Node, whatToShow: Int = definedExternally, filter: NodeFilter? = definedExternally):
TreeWalker\n  fun createTreeWalker(root: Node, whatToShow: Int = definedExternally, filter: ((Node) -> Short)?
= definedExternally): TreeWalker\n  fun getElementsByName(elementName: String): NodeList\n  fun open(type:
String = definedExternally, replace: String = definedExternally): Document\n  fun open(url: String, name: String,
features: String): Window\n  fun close()\n  fun write(vararg text: String)\n  fun writeln(vararg text: String)\n
fun hasFocus(): Boolean\n  fun execCommand(commandId: String, showUI: Boolean = definedExternally, value:
String = definedExternally): Boolean\n  fun queryCommandEnabled(commandId: String): Boolean\n  fun
queryCommandIndeterm(commandId: String): Boolean\n  fun queryCommandState(commandId: String):
Boolean\n  fun queryCommandSupported(commandId:
String): Boolean\n  fun queryCommandValue(commandId: String): String\n  fun clear()\n  fun
captureEvents()\n  fun releaseEvents()\n  fun elementFromPoint(x: Double, y: Double): Element?\n  fun
elementsFromPoint(x: Double, y: Double): Array<Element>\n  fun caretPositionFromPoint(x: Double, y: Double):
CaretPosition?\n  fun createTouch(view: Window, target: EventTarget, identifier: Int, pageX: Int, pageY: Int,
screenX: Int, screenY: Int): Touch\n  fun createTouchList(vararg touches: Touch): TouchList\n  fun
exitFullscreen(): Promise<Unit>\n  override fun getElementById(elementId: String): Element?\n  override fun
prepend(vararg nodes: dynamic)\n  override fun append(vararg nodes: dynamic)\n  override fun
querySelector(selectors: String): Element?\n  override fun querySelectorAll(selectors: String): NodeList\n
override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n  override

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fun convertQuadFromNode(quad:
dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override
fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertPointFromNode(point: DOMPointInit, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Document.get(name: String):
dynamic = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[XMLDocument](https://developer.mozilla.org/en/docs/Web/API/XMLDocument) to Kotlin\n *\npublic external
open class XMLDocument : Document {\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n
    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external interface
ElementCreationOptions {\n  var `is`: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ElementCreationOptions(`is`: String?
= undefined): ElementCreationOptions {\n  val o = js(\"({})\")\n  o[\"is\"] = `is`\n  return o\n}\n\n/**\n *
Exposes the JavaScript
[DOMImplementation](https://developer.mozilla.org/en/docs/Web/API/DOMImplementation) to Kotlin\n\n
*\npublic external abstract class DOMImplementation {\n  fun createDocumentType(qualifiedName: String,
publicId: String, systemId: String):
DocumentType\n  fun createDocument(namespace: String?, qualifiedName: String, doctype: DocumentType? =
definedExternally): XMLDocument\n  fun createHTMLDocument(title: String = definedExternally): Document\n
fun hasFeature(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[DocumentType](https://developer.mozilla.org/en/docs/Web/API/DocumentType) to Kotlin\n\n
*\npublic external
abstract class DocumentType : Node, ChildNode {\n  open val name: String\n  open val publicId: String\n  open
val systemId: String\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val

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DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[DocumentFragment](https://developer.mozilla.org/en/docs/Web/API/DocumentFragment) to Kotlin \n * \n public
external open class DocumentFragment : Node, NonElementParentNode, ParentNode { \n    override val children:
HTMLCollection \n    override val firstElementChild: Element? \n    override val lastElementChild: Element? \n
    override val childElementCount: Int \n    override fun getElementById(elementId: String): Element? \n    override fun
prepend(vararg nodes: dynamic) \n    override fun append(vararg nodes: dynamic) \n    override fun
querySelector(selectors: String): Element? \n    override fun querySelectorAll(selectors: String): NodeList \n \n
companion
    object { \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n        val TEXT_NODE:
Short \n        val CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE: Short \n        val
ENTITY_NODE: Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE:
Short \n        val DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n * Exposes the JavaScript
[ShadowRoot](https://developer.mozilla.org/en/docs/Web/API/ShadowRoot) to Kotlin \n * \n public external open
class ShadowRoot : DocumentFragment, DocumentOrShadowRoot { \n    open val mode: ShadowRootMode \n
    open val host: Element \n    override val fullscreenElement: Element? \n \n    companion object { \n        val
ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n        val TEXT_NODE: Short \n        val
CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE: Short \n        val ENTITY_NODE:
Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE: Short \n        val
DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n * Exposes the JavaScript
[Element](https://developer.mozilla.org/en/docs/Web/API/Element) to Kotlin \n * \n public external abstract
class Element : Node, ParentNode, NonDocumentTypeChildNode, ChildNode, Slotable, GeometryUtils,
UnionElementOrHTMLCollection, UnionElementOrRadioNodeList, UnionElementOrMouseEvent,
UnionElementOrProcessingInstruction { \n    open val namespaceURI: String? \n    open val prefix: String? \n    open
val localName: String \n    open val tagName: String \n    open var id: String \n    open var className: String \n    open
val classList: DOMTokenList \n    open var slot: String \n    open val attributes: NamedNodeMap \n    open val
shadowRoot: ShadowRoot? \n    open var scrollTop: Double \n    open var scrollLeft: Double \n    open val
scrollWidth: Int \n    open val scrollHeight: Int \n    open val clientTop: Int \n    open val clientLeft: Int \n    open val
clientWidth: Int \n    open val clientHeight: Int \n    open var innerHTML: String \n    open var outerHTML: String \n
    fun hasAttributes(): Boolean \n    fun getAttributeNames(): Array<String> \n    fun getAttribute(qualifiedName:
String): String? \n
        fun getAttributeNS(namespace: String?, localName: String): String? \n    fun setAttribute(qualifiedName: String,
value: String) \n    fun setAttributeNS(namespace: String?, qualifiedName: String, value: String) \n    fun
removeAttribute(qualifiedName: String) \n    fun removeAttributeNS(namespace: String?, localName: String) \n
    fun hasAttribute(qualifiedName: String): Boolean \n    fun hasAttributeNS(namespace: String?, localName: String):
Boolean \n    fun getAttributeNode(qualifiedName: String): Attr? \n    fun getAttributeNodeNS(namespace: String?,

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localName: String): Attr? \n fun setAttributeNode(attr: Attr): Attr? \n fun setAttributeNodeNS(attr: Attr): Attr? \n
fun removeAttributeNode(attr: Attr): Attr \n fun attachShadow(init: ShadowRootInit): ShadowRoot \n fun
closest(selectors: String): Element? \n fun matches(selectors: String): Boolean \n fun
webkitMatchesSelector(selectors: String): Boolean \n fun getElementsByTagName(qualifiedName: String):
HTMLCollection \n
fun getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection \n fun
getElementsByTagName(className: String): HTMLCollection \n fun insertAdjacentElement(where: String,
element: Element): Element? \n fun insertAdjacentText(where: String, data: String) \n fun getClientRects():
Array<DOMRect> \n fun getBoundingClientRect(): DOMRect \n fun scrollIntoView() \n fun
scrollIntoView(arg: dynamic) \n fun scroll(options: ScrollToOptions = definedExternally) \n fun scroll(x: Double,
y: Double) \n fun scrollTo(options: ScrollToOptions = definedExternally) \n fun scrollTo(x: Double, y: Double) \n
fun scrollBy(options: ScrollToOptions = definedExternally) \n fun scrollBy(x: Double, y: Double) \n fun
insertAdjacentHTML(position: String, text: String) \n fun setPointerCapture(pointerId: Int) \n fun
releasePointerCapture(pointerId: Int) \n fun hasPointerCapture(pointerId: Int): Boolean \n fun requestFullscreen():
Promise<Unit> \n \n companion
object { \n val ELEMENT_NODE: Short \n val ATTRIBUTE_NODE: Short \n val TEXT_NODE:
Short \n val CDATA_SECTION_NODE: Short \n val ENTITY_REFERENCE_NODE: Short \n val
ENTITY_NODE: Short \n val PROCESSING_INSTRUCTION_NODE: Short \n val COMMENT_NODE:
Short \n val DOCUMENT_NODE: Short \n val DOCUMENT_TYPE_NODE: Short \n val
DOCUMENT_FRAGMENT_NODE: Short \n val NOTATION_NODE: Short \n val
DOCUMENT_POSITION_DISCONNECTED: Short \n val DOCUMENT_POSITION_PRECEDING: Short \n
val DOCUMENT_POSITION_FOLLOWING: Short \n val DOCUMENT_POSITION_CONTAINS: Short \n
val DOCUMENT_POSITION_CONTAINED_BY: Short \n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n } \n } \n \n public external interface
ShadowRootInit { \n var mode: ShadowRootMode? \n } \n \n @Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER" ) \n @kotlin.internal.InlineOnly \n public inline fun ShadowRootInit(mode:
ShadowRootMode?): ShadowRootInit
{ \n val o = js(\ "{ }" ) \n o[\ "mode" ] = mode \n return o \n } \n \n /** \n * Exposes the JavaScript
[NamedNodeMap](https://developer.mozilla.org/en/docs/Web/API/NamedNodeMap) to Kotlin \n * \n public external
abstract class NamedNodeMap : ItemArrayLike<Attr> { \n fun getNamedItemNS(namespace: String?, localName:
String): Attr? \n fun setNamedItem(attr: Attr): Attr? \n fun setNamedItemNS(attr: Attr): Attr? \n fun
removeNamedItem(qualifiedName: String): Attr \n fun removeNamedItemNS(namespace: String?, localName:
String): Attr \n override fun item(index: Int): Attr? \n fun getNamedItem(qualifiedName: String):
Attr? \n } \n \n @Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER" ) \n @kotlin.internal.InlineOnly \n public inline operator fun NamedNodeMap.get(index:
Int): Attr? = asDynamic()[index] \n \n @Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER" ) \n @kotlin.internal.InlineOnly \n public inline operator fun
NamedNodeMap.get(qualifiedName: String): Attr? = asDynamic()[qualifiedName] \n \n /** \n
* Exposes the JavaScript [Attr](https://developer.mozilla.org/en/docs/Web/API/Attr) to Kotlin \n * \n public external
abstract class Attr : Node { \n open val namespaceURI: String? \n open val prefix: String? \n open val
localName: String \n open val name: String \n open var value: String \n open val ownerElement: Element? \n
open val specified: Boolean \n \n companion object { \n val ELEMENT_NODE: Short \n val
ATTRIBUTE_NODE: Short \n val TEXT_NODE: Short \n val CDATA_SECTION_NODE: Short \n val
ENTITY_REFERENCE_NODE: Short \n val ENTITY_NODE: Short \n val
PROCESSING_INSTRUCTION_NODE: Short \n val COMMENT_NODE: Short \n val
DOCUMENT_NODE: Short \n val DOCUMENT_TYPE_NODE: Short \n val
DOCUMENT_FRAGMENT_NODE: Short \n val NOTATION_NODE: Short \n val
DOCUMENT_POSITION_DISCONNECTED: Short \n val DOCUMENT_POSITION_PRECEDING: Short \n

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val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[CharacterData](https://developer.mozilla.org/en/docs/Web/API/CharacterData) to Kotlin\n *\npublic external
abstract class CharacterData : Node, NonDocumentTypeChildNode, ChildNode {\n    open var data: String\n    open
val length: Int\n    fun substringData(offset: Int, count: Int): String\n    fun appendData(data: String)\n    fun
insertData(offset: Int, data: String)\n    fun deleteData(offset: Int, count: Int)\n    fun replaceData(offset: Int, count:
Int, data: String)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[Text](https://developer.mozilla.org/en/docs/Web/API/Text) to Kotlin\n *\npublic external open class Text(data:
String = definedExternally) : CharacterData, Slotable, GeometryUtils {\n    open val wholeText: String\n    override
val assignedSlot: HTMLSlotElement?\n    override val previousElementSibling: Element?\n    override val
nextElementSibling: Element?\n    fun splitText(offset: Int): Text\n    override fun getBoxQuads(options:
BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n
    override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n    override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n    override fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n    override fun before(vararg nodes: dynamic)\n    override fun after(vararg
nodes: dynamic)\n    override fun replaceWith(vararg nodes: dynamic)\n    override fun remove()\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[CDATASection](https://developer.mozilla.org/en/docs/Web/API/CDATASection) to Kotlin\n *\npublic external
open class CDATASection : Text {\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE:
Short\n        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n
        val DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:

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Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [ProcessingInstruction](https://developer.mozilla.org/en/docs/Web/API/ProcessingInstruction) to
Kotlin\n\n *\n\npublic external abstract class ProcessingInstruction : CharacterData, LinkStyle,
UnionElementOrProcessingInstruction {\n    open val target: String\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n
        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [Comment](https://developer.mozilla.org/en/docs/Web/API/Comment) to Kotlin\n\n *\n\npublic external
open class Comment(data: String = definedExternally) : CharacterData {\n    override val previousElementSibling:
Element?\n    override val nextElementSibling: Element?\n    override fun before(vararg nodes: dynamic)\n
override fun after(vararg nodes: dynamic)\n    override fun replaceWith(vararg nodes: dynamic)\n    override fun
remove()\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[Range](https://developer.mozilla.org/en/docs/Web/API/Range) to Kotlin\n\n *\n\npublic external open class Range {\n
    open val startContainer: Node\n    open val startOffset: Int\n    open val endContainer: Node\n    open val
endOffset: Int\n    open val collapsed: Boolean\n
    open val commonAncestorContainer: Node\n    fun setStart(node: Node, offset: Int)\n    fun setEnd(node: Node,
offset: Int)\n    fun setStartBefore(node: Node)\n    fun setStartAfter(node: Node)\n    fun setEndBefore(node:
Node)\n    fun setEndAfter(node: Node)\n    fun collapse(toStart: Boolean = definedExternally)\n    fun
selectNode(node: Node)\n    fun selectNodeContents(node: Node)\n    fun compareBoundaryPoints(how: Short,
sourceRange: Range): Short\n    fun deleteContents()\n    fun extractContents(): DocumentFragment\n    fun
cloneContents(): DocumentFragment\n    fun insertNode(node: Node)\n    fun surroundContents(newParent: Node)\n
    fun cloneRange(): Range\n    fun detach()\n    fun isPointInRange(node: Node, offset: Int): Boolean\n    fun
comparePoint(node: Node, offset: Int): Short\n    fun intersectsNode(node: Node): Boolean\n    fun getClientRects():
Array<DOMRect>\n    fun getBoundingClientRect(): DOMRect\n    fun createContextualFragment(fragment:
String): DocumentFragment\n\n    companion object {\n        val START_TO_START: Short\n        val START_TO_END: Short\n        val
END_TO_END: Short\n        val END_TO_START: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[NodeIterator](https://developer.mozilla.org/en/docs/Web/API/NodeIterator) to Kotlin\n\n *\n\npublic external abstract
class NodeIterator {\n    open val root: Node\n    open val referenceNode: Node\n    open val
pointerBeforeReferenceNode: Boolean\n    open val whatToShow: Int\n    open val filter: NodeFilter?\n    fun
nextNode(): Node?\n    fun previousNode(): Node?\n    fun detach()\n}\n\n/**\n * Exposes the JavaScript
[TreeWalker](https://developer.mozilla.org/en/docs/Web/API/TreeWalker) to Kotlin\n\n *\n\npublic external abstract
class TreeWalker {\n    open val root: Node\n    open val whatToShow: Int\n    open val filter: NodeFilter?\n    open

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var currentNode: Node\n fun parentNode(): Node?\n fun firstChild(): Node?\n fun lastChild(): Node?\n fun
previousSibling():
Node?\n fun nextSibling(): Node?\n fun previousNode(): Node?\n fun nextNode(): Node?\n}\n\n/**\n *
Exposes the JavaScript [NodeFilter](https://developer.mozilla.org/en/docs/Web/API/NodeFilter) to Kotlin\n
*\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external interface NodeFilter {\n
fun acceptNode(node: Node): Short\n\n companion object {\n val FILTER_ACCEPT: Short\n val
FILTER_REJECT: Short\n val FILTER_SKIP: Short\n val SHOW_ALL: Int\n val
SHOW_ELEMENT: Int\n val SHOW_ATTRIBUTE: Int\n val SHOW_TEXT: Int\n val
SHOW_CDATA_SECTION: Int\n val SHOW_ENTITY_REFERENCE: Int\n val SHOW_ENTITY: Int\n
val SHOW_PROCESSING_INSTRUCTION: Int\n val SHOW_COMMENT: Int\n val
SHOW_DOCUMENT: Int\n val SHOW_DOCUMENT_TYPE: Int\n val
SHOW_DOCUMENT_FRAGMENT: Int\n val SHOW_NOTATION: Int\n }\n}\n\n/**\n * Exposes the
JavaScript [DOMTokenList](https://developer.mozilla.org/en/docs/Web/API/DOMTokenList)
to Kotlin\n *\npublic external abstract class DOMTokenList : ItemArrayLike<String> {\n open var value:
String\n fun contains(token: String): Boolean\n fun add(vararg tokens: String)\n fun remove(vararg tokens:
String)\n fun toggle(token: String, force: Boolean = definedExternally): Boolean\n fun replace(token: String,
newToken: String)\n fun supports(token: String): Boolean\n override fun item(index: Int):
String?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMTokenList.get(index:
Int): String? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DOMPointReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMPointReadOnly) to Kotlin\n *\npublic
external open class DOMPointReadOnly(x: Double, y: Double, z: Double, w: Double) {\n open val x: Double\n
open val y: Double\n open val z: Double\n open val w: Double\n fun matrixTransform(matrix:
DOMMatrixReadOnly): DOMPoint}\n\n/**\n * Exposes the JavaScript
[DOMPoint](https://developer.mozilla.org/en/docs/Web/API/DOMPoint) to Kotlin\n *\npublic external open class
DOMPoint : DOMPointReadOnly {\n constructor(point: DOMPointInit)\n constructor(x: Double =
definedExternally, y: Double = definedExternally, z: Double = definedExternally, w: Double = definedExternally)\n
override var x: Double\n override var y: Double\n override var z: Double\n override var w:
Double}\n\n/**\n * Exposes the JavaScript
[DOMPointInit](https://developer.mozilla.org/en/docs/Web/API/DOMPointInit) to Kotlin\n *\npublic external
interface DOMPointInit {\n var x: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n var y: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n var z: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n
var w: Double? /* = 1.0 */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun DOMPointInit(x: Double? = 0.0, y:
Double? = 0.0, z: Double? = 0.0, w: Double? = 1.0): DOMPointInit {\n val o = js("{}")\n o["x"] = x\n
o["y"] = y\n o["z"] = z\n o["w"] = w\n return o}\n\n/**\n * Exposes the JavaScript
[DOMRect](https://developer.mozilla.org/en/docs/Web/API/DOMRect) to Kotlin\n *\npublic external open class
DOMRect(x: Double = definedExternally, y: Double = definedExternally, width: Double = definedExternally,
height: Double = definedExternally) : DOMRectReadOnly {\n override var x: Double\n override var y: Double\n
override var width: Double\n override var height: Double}\n\n/**\n * Exposes the JavaScript
[DOMRectReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMRectReadOnly) to Kotlin\n *\npublic
external
open class DOMRectReadOnly(x: Double, y: Double, width: Double, height: Double) {\n open val x: Double\n
open val y: Double\n open val width: Double\n open val height: Double\n open val top: Double\n open val
right: Double\n open val bottom: Double\n open val left: Double}\n\npublic external interface DOMRectInit

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{\n  var x: Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n  var y:
Double? /* = 0.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n  var width: Double? /*
= 0.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n  var height: Double? /* = 0.0 */\n
    get() = definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun DOMRectInit(x: Double? = 0.0, y:
Double? = 0.0, width: Double? = 0.0, height: Double? = 0.0): DOMRectInit
{\n  val o = js("{})"\n  o["x"] = x\n  o["y"] = y\n  o["width"] = width\n  o["height"] = height\n
return o}\n\npublic external interface DOMRectList : ItemArrayLike<DOMRect> {\n  override fun item(index:
Int): DOMRect?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMRectList.get(index: Int):
DOMRect? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DOMQuad](https://developer.mozilla.org/en/docs/Web/API/DOMQuad) to Kotlin\n */\npublic external open class
DOMQuad {\n  constructor(p1: DOMPointInit = definedExternally, p2: DOMPointInit = definedExternally, p3:
DOMPointInit = definedExternally, p4: DOMPointInit = definedExternally)\n  constructor(rect: DOMRectInit)\n
open val p1: DOMPoint\n  open val p2: DOMPoint\n  open val p3: DOMPoint\n  open val p4: DOMPoint\n
open val bounds: DOMRectReadOnly\n}\n\n/**\n * Exposes the JavaScript
[DOMMatrixReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMMatrixReadOnly)
to Kotlin\n */\npublic external open class DOMMatrixReadOnly(numberSequence: Array<Double>) {\n  open val
a: Double\n  open val b: Double\n  open val c: Double\n  open val d: Double\n  open val e: Double\n  open val
f: Double\n  open val m11: Double\n  open val m12: Double\n  open val m13: Double\n  open val m14:
Double\n  open val m21: Double\n  open val m22: Double\n  open val m23: Double\n  open val m24: Double\n
open val m31: Double\n  open val m32: Double\n  open val m33: Double\n  open val m34: Double\n  open val
m41: Double\n  open val m42: Double\n  open val m43: Double\n  open val m44: Double\n  open val is2D:
Boolean\n  open val isIdentity: Boolean\n  fun translate(tx: Double, ty: Double, tz: Double = definedExternally):
DOMMatrix\n  fun scale(scale: Double, originX: Double = definedExternally, originY: Double =
definedExternally): DOMMatrix\n  fun scale3d(scale: Double,
originX: Double = definedExternally, originY: Double = definedExternally, originZ: Double = definedExternally):
DOMMatrix\n  fun scaleNonUniform(scaleX: Double, scaleY: Double = definedExternally, scaleZ: Double =
definedExternally, originX: Double = definedExternally, originY: Double = definedExternally, originZ: Double =
definedExternally): DOMMatrix\n  fun rotate(angle: Double, originX: Double = definedExternally, originY:
Double = definedExternally): DOMMatrix\n  fun rotateFromVector(x: Double, y: Double): DOMMatrix\n  fun
rotateAxisAngle(x: Double, y: Double, z: Double, angle: Double): DOMMatrix\n  fun skewX(sx: Double):
DOMMatrix\n  fun skewY(sy: Double): DOMMatrix\n  fun multiply(other: DOMMatrix): DOMMatrix\n  fun
flipX(): DOMMatrix\n  fun flipY(): DOMMatrix\n  fun inverse(): DOMMatrix\n  fun transformPoint(point:
DOMPointInit = definedExternally): DOMPoint\n  fun toFloat32Array(): Float32Array\n  fun toFloat64Array():
Float64Array\n}\n\n/**\n *
Exposes the JavaScript [DOMMatrix](https://developer.mozilla.org/en/docs/Web/API/DOMMatrix) to Kotlin\n
*/\npublic external open class DOMMatrix() : DOMMatrixReadOnly {\n  constructor(transformList: String)\n
constructor(other: DOMMatrixReadOnly)\n  constructor(array32: Float32Array)\n  constructor(array64:
Float64Array)\n  constructor(numberSequence: Array<Double>)\n  override var a: Double\n  override var b:
Double\n  override var c: Double\n  override var d: Double\n  override var e: Double\n  override var f:
Double\n  override var m11: Double\n  override var m12: Double\n  override var m13: Double\n  override var
m14: Double\n  override var m21: Double\n  override var m22: Double\n  override var m23: Double\n  override
var m24: Double\n  override var m31: Double\n  override var m32: Double\n  override var m33: Double\n
override var m34: Double\n  override var m41: Double\n  override var m42: Double\n  override var m43:
Double\n
  override var m44: Double\n  fun multiplySelf(other: DOMMatrix): DOMMatrix\n  fun preMultiplySelf(other:
DOMMatrix): DOMMatrix\n  fun translateSelf(tx: Double, ty: Double, tz: Double = definedExternally):

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DOMMatrix\n fun scaleSelf(scale: Double, originX: Double = definedExternally, originY: Double =
definedExternally): DOMMatrix\n fun scale3dSelf(scale: Double, originX: Double = definedExternally, originY:
Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun
scaleNonUniformSelf(scaleX: Double, scaleY: Double = definedExternally, scaleZ: Double = definedExternally,
originX: Double = definedExternally, originY: Double = definedExternally, originZ: Double = definedExternally):
DOMMatrix\n fun rotateSelf(angle: Double, originX: Double = definedExternally, originY: Double =
definedExternally): DOMMatrix\n fun rotateFromVectorSelf(x: Double, y: Double): DOMMatrix\n fun
rotateAxisAngleSelf(x: Double, y: Double, z: Double, angle: Double):
DOMMatrix\n fun skewXSelf(sx: Double): DOMMatrix\n fun skewYSelf(sy: Double): DOMMatrix\n fun
invertSelf(): DOMMatrix\n fun setMatrixValue(transformList: String): DOMMatrix\n}\n\npublic external
interface ScrollOptions {\n var behavior: ScrollBehavior? /* = ScrollBehavior.AUTO */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollOptions(behavior:
ScrollBehavior? = ScrollBehavior.AUTO): ScrollOptions {\n val o = js(\"({})\")\n o[\"behavior\"] = behavior\n
return o\n}\n\n/**\n * Exposes the JavaScript
[ScrollToOptions](https://developer.mozilla.org/en/docs/Web/API/ScrollToOptions) to Kotlin\n */\npublic external
interface ScrollToOptions : ScrollOptions {\n var left: Double?\n get() = definedExternally\n set(value) =
definedExternally\n var top: Double?\n get() = definedExternally\n set(value)
= definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollToOptions(left: Double? =
undefined, top: Double? = undefined, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollToOptions {\n
val o = js(\"({})\")\n o[\"left\"] = left\n o[\"top\"] = top\n o[\"behavior\"] = behavior\n return o\n}\n\n/**\n *
Exposes the JavaScript [MediaQueryList](https://developer.mozilla.org/en/docs/Web/API/MediaQueryList) to
Kotlin\n */\npublic external abstract class MediaQueryList : EventTarget {\n open val media: String\n open val
matches: Boolean\n open var onchange: ((Event) -> dynamic)?\n fun addListener(listener: EventListener?)\n
fun addListener(listener: ((Event) -> Unit)?)\n fun removeListener(listener: EventListener?)\n fun
removeListener(listener: ((Event) -> Unit)?)\n}\n\n/**\n * Exposes the JavaScript
[MediaQueryListEvent](https://developer.mozilla.org/en/docs/Web/API/MediaQueryListEvent)
to Kotlin\n */\npublic external open class MediaQueryListEvent(type: String, eventInitDict:
MediaQueryListEventInit = definedExternally) : Event {\n open val media: String\n open val matches:
Boolean\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val
AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
MediaQueryListEventInit : EventInit {\n var media: String? /* = \"\" */\n get() = definedExternally\n
set(value) = definedExternally\n var matches: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaQueryListEventInit(media:
String? = \"\", matches: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): MediaQueryListEventInit {\n val o = js(\"({})\")\n
o[\"media\"] = media\n o[\"matches\"] = matches\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] =
cancelable\n o[\"composed\"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Screen](https://developer.mozilla.org/en/docs/Web/API/Screen) to Kotlin\n */\npublic external abstract class
Screen {\n open val availWidth: Int\n open val availHeight: Int\n open val width: Int\n open val height: Int\n
open val colorDepth: Int\n open val pixelDepth: Int\n}\n\n/**\n * Exposes the JavaScript
[CaretPosition](https://developer.mozilla.org/en/docs/Web/API/CaretPosition) to Kotlin\n */\npublic external
abstract class CaretPosition {\n open val offsetNode: Node\n open val offset: Int\n fun getClientRect():
DOMRect?\n}\n\npublic external interface ScrollIntoViewOptions : ScrollOptions {\n var block:
ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */\n get() = definedExternally\n set(value) =
definedExternally\n var inline:

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ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollIntoViewOptions(block:
ScrollLogicalPosition? = ScrollLogicalPosition.CENTER, inline: ScrollLogicalPosition? =
ScrollLogicalPosition.CENTER, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollIntoViewOptions {\n
val o = js("{}")\n    o["block"] = block\n    o["inline"] = inline\n    o["behavior"] = behavior\n    return
o\n}\n\npublic external interface BoxQuadOptions {\n    var box: CSSBoxType? /* = CSSBoxType.BORDER */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var relativeTo: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun BoxQuadOptions(box:
CSSBoxType? = CSSBoxType.BORDER, relativeTo: dynamic = undefined): BoxQuadOptions {\n    val o =
js("{}")\n    o["box"] = box\n    o["relativeTo"] = relativeTo\n    return o\n}\n\npublic external interface
ConvertCoordinateOptions {\n    var fromBox: CSSBoxType? /* = CSSBoxType.BORDER */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var toBox: CSSBoxType? /* = CSSBoxType.BORDER
*/\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ConvertCoordinateOptions(fromBox:
CSSBoxType? = CSSBoxType.BORDER, toBox: CSSBoxType? = CSSBoxType.BORDER):
ConvertCoordinateOptions {\n    val o = js("{}")\n    o["fromBox"] = fromBox\n    o["toBox"] = toBox\n    return
o\n}\n\n/**\n * Exposes the JavaScript
[GeometryUtils](https://developer.mozilla.org/en/docs/Web/API/GeometryUtils) to Kotlin\n */\npublic external
interface GeometryUtils {\n    fun getBoxQuads(options: BoxQuadOptions = definedExternally):
Array<DOMQuad>\n    fun convertQuadFromNode(quad: dynamic, from: dynamic, options:
ConvertCoordinateOptions = definedExternally): DOMQuad\n    fun convertRectFromNode(rect:
DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions = definedExternally): DOMQuad\n    fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions =
definedExternally): DOMPoint\n}\n\n/**\n * Exposes the JavaScript
[Touch](https://developer.mozilla.org/en/docs/Web/API/Touch) to Kotlin\n */\npublic external abstract class Touch
{\n    open val identifier: Int\n    open val target: EventTarget\n    open val screenX: Int\n    open val screenY: Int\n
open val clientX: Int\n    open val clientY: Int\n    open val pageX: Int\n    open val pageY: Int\n    open val region:
String?\n}\n\npublic external abstract class TouchList : ItemArrayLike<Touch> {\n    override fun item(index:
Int): Touch?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun TouchList.get(index: Int):
Touch? = asDynamic()[index]\n\npublic external open class TouchEvent : UIEvent {\n    open val touches:
TouchList\n    open val targetTouches: TouchList\n    open val changedTouches: TouchList\n    open val altKey:
Boolean\n    open val metaKey: Boolean\n    open val ctrlKey: Boolean\n    open val shiftKey: Boolean\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET:
Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[Image](https://developer.mozilla.org/en/docs/Web/API/Image) to Kotlin\n */\npublic external open class
Image(width: Int = definedExternally, height: Int = definedExternally) : HTMLImageElement {\n    override var
onabort: ((Event) -> dynamic)?\n    override var onblur: ((FocusEvent) -> dynamic)?\n    override var oncancel:
((Event) -> dynamic)?\n    override var oncanplay: ((Event) -> dynamic)?\n    override var oncanplaythrough: ((Event) ->
dynamic)?\n    override var onchange: ((Event) -> dynamic)?\n    override var onclick: ((MouseEvent) ->
dynamic)?\n    override var onclose: ((Event) -> dynamic)?\n    override var oncontextmenu: ((MouseEvent) ->
dynamic)?\n    override var oncuechange: ((Event) -> dynamic)?\n    override var ondblclick: ((MouseEvent) ->
dynamic)?\n    override var ondrag: ((DragEvent) -> dynamic)?\n    override var ondragend: ((DragEvent) ->
dynamic)?\n    override var ondragenter: ((DragEvent) -> dynamic)?\n    override var ondragexit: ((DragEvent) ->
dynamic)?\n    override var ondragover: ((DragEvent) -> dynamic)?\n    override var ondragstart: ((DragEvent) ->
dynamic)?\n    override var ondrop: ((Event) -> dynamic)?\n    override var onerror: ((Event) -> dynamic)?\n    override var onfocus: ((FocusEvent) -> dynamic)?\n    override var onfullscreenchange: ((FullscreenChangeEvent) -> dynamic)?\n    override var onfullscreenerror: ((FullscreenErrorEvent) -> dynamic)?\n    override var oninput: ((Event) -> dynamic)?\n    override var oninvalid: ((Event) -> dynamic)?\n    override var onkeydown: ((KeyboardEvent) -> dynamic)?\n    override var onkeypress: ((KeyboardEvent) -> dynamic)?\n    override var onkeyup: ((KeyboardEvent) -> dynamic)?\n    override var onload: ((Event) -> dynamic)?\n    override var onloadeddata: ((Event) -> dynamic)?\n    override var onloadedmetadata: ((Event) -> dynamic)?\n    override var onloadstart: ((Event) -> dynamic)?\n    override var onmousedown: ((MouseEvent) -> dynamic)?\n    override var onmouseenter: ((MouseEvent) -> dynamic)?\n    override var onmouseleave: ((MouseEvent) -> dynamic)?\n    override var onmousemove: ((MouseEvent) -> dynamic)?\n    override var onmouseout: ((MouseEvent) -> dynamic)?\n    override var onmouseover: ((MouseEvent) -> dynamic)?\n    override var onmouseup: ((MouseEvent) -> dynamic)?\n    override var onmousewheel: ((MouseEvent) -> dynamic)?\n    override var onpaste: ((Event) -> dynamic)?\n    override var onreadystatechange: ((Event) -> dynamic)?\n    override var onscroll: ((Event) -> dynamic)?\n    override var onsecuritypolicyviolation: ((SecurityPolicyViolationEvent) -> dynamic)?\n    override var onselect: ((Event) -> dynamic)?\n    override var onstalled: ((Event) -> dynamic)?\n    override var onstorage: ((StorageEvent) -> dynamic)?\n    override var onsubmit: ((Event) -> dynamic)?\n    override var onsuccess: ((Event) -> dynamic)?\n    override var ontextinput: ((Event) -> dynamic)?\n    override var ontimeupdate: ((Event) -> dynamic)?\n    override var onunload: ((Event) -> dynamic)?\n    override var onvolumechange: ((Event) -> dynamic)?\n    override var onwaiting: ((Event) -> dynamic)?\n    override var onwheel: ((MouseEvent) -> dynamic)?\n}\n\n/**\n * Exposes the JavaScript

```

```

dynamic)?\n  override var ondragleave: ((DragEvent) -> dynamic)?\n  override var ondragover: ((DragEvent) ->
dynamic)?\n  override var ondragstart: ((DragEvent) -> dynamic)?\n  override var ondrop: ((DragEvent) ->
dynamic)?\n  override var ondurationchange: ((Event) -> dynamic)?\n  override var onemptied: ((Event) ->
dynamic)?\n
  override var onended: ((Event) -> dynamic)?\n  override var onerror: ((dynamic, String, Int, Int, Any?) ->
dynamic)?\n  override var onfocus: ((FocusEvent) -> dynamic)?\n  override var oninput: ((InputEvent) ->
dynamic)?\n  override var oninvalid: ((Event) -> dynamic)?\n  override var onkeydown: ((KeyboardEvent) ->
dynamic)?\n  override var onkeypress: ((KeyboardEvent) -> dynamic)?\n  override var onkeyup:
((KeyboardEvent) -> dynamic)?\n  override var onload: ((Event) -> dynamic)?\n  override var onloadeddata:
((Event) -> dynamic)?\n  override var onloadedmetadata: ((Event) -> dynamic)?\n  override var onloadend:
((Event) -> dynamic)?\n  override var onloadstart: ((ProgressEvent) -> dynamic)?\n  override var onmousedown:
((MouseEvent) -> dynamic)?\n  override var onmouseenter: ((MouseEvent) -> dynamic)?\n  override var
onmouseleave: ((MouseEvent) -> dynamic)?\n  override var onmousemove: ((MouseEvent) -> dynamic)?\n
  override var onmouseout: ((MouseEvent)
-> dynamic)?\n  override var onmouseover: ((MouseEvent) -> dynamic)?\n  override var onmouseup:
((MouseEvent) -> dynamic)?\n  override var onwheel: ((WheelEvent) -> dynamic)?\n  override var onpause:
((Event) -> dynamic)?\n  override var onplay: ((Event) -> dynamic)?\n  override var onplaying: ((Event) ->
dynamic)?\n  override var onprogress: ((ProgressEvent) -> dynamic)?\n  override var onratechange: ((Event) ->
dynamic)?\n  override var onreset: ((Event) -> dynamic)?\n  override var onresize: ((Event) -> dynamic)?\n
  override var onscroll: ((Event) -> dynamic)?\n  override var onseeked: ((Event) -> dynamic)?\n  override var
onseeking: ((Event) -> dynamic)?\n  override var onselect: ((Event) -> dynamic)?\n  override var onshow:
((Event) -> dynamic)?\n  override var onstalled: ((Event) -> dynamic)?\n  override var onsubmit: ((Event) ->
dynamic)?\n  override var onsuspend: ((Event) -> dynamic)?\n  override var ontimeupdate: ((Event) ->
dynamic)?\n  override var ontoggle: ((Event) -> dynamic)?\n  override var onvolumechange: ((Event) ->
dynamic)?\n  override var onwaiting: ((Event) -> dynamic)?\n  override var ongotpointercapture: ((PointerEvent)
-> dynamic)?\n  override var onlostpointercapture: ((PointerEvent) -> dynamic)?\n  override var onpointerdown:
((PointerEvent) -> dynamic)?\n  override var onpointermove: ((PointerEvent) -> dynamic)?\n  override var
onpointerup: ((PointerEvent) -> dynamic)?\n  override var onpointercancel: ((PointerEvent) -> dynamic)?\n
  override var onpointerover: ((PointerEvent) -> dynamic)?\n  override var onpointerout: ((PointerEvent) ->
dynamic)?\n  override var onpointerenter: ((PointerEvent) -> dynamic)?\n  override var onpointerleave:
((PointerEvent) -> dynamic)?\n  override var oncopy: ((ClipboardEvent) -> dynamic)?\n  override var oncut:
((ClipboardEvent) -> dynamic)?\n  override var onpaste: ((ClipboardEvent) -> dynamic)?\n  override var
contentEditable:
String\n  override val isContentEditable: Boolean\n  override val style: CSSStyleDeclaration\n  override val
children: HTMLCollection\n  override val firstElementChild: Element?\n  override val lastElementChild:
Element?\n  override val childElementCount: Int\n  override val previousElementSibling: Element?\n  override
val nextElementSibling: Element?\n  override val assignedSlot: HTMLSlotElement?\n  override fun
prepend(vararg nodes: dynamic)\n  override fun append(vararg nodes: dynamic)\n  override fun
querySelector(selectors: String): Element?\n  override fun querySelectorAll(selectors: String): NodeList\n
  override fun before(vararg nodes: dynamic)\n  override fun after(vararg nodes: dynamic)\n  override fun
replaceWith(vararg nodes: dynamic)\n  override fun remove()\n  override fun getBoxQuads(options:
BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n  override fun convertQuadFromNode(quad:
dynamic, from: dynamic, options: ConvertCoordinateOptions
/* = definedExternally */): DOMQuad\n  override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val

```



```

ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS:
Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }|n}|n|npublic external open class
Audio(src: String = definedExternally) : HTMLAudioElement {
    override var onabort: ((Event) -> dynamic)?\n
    override var onblur: ((FocusEvent) -> dynamic)?\n
    override var oncancel: ((Event) -> dynamic)?\n
    override var oncanplay: ((Event) -> dynamic)?\n
    override var oncanplaythrough: ((Event) -> dynamic)?\n
    override var onchange: ((Event) -> dynamic)?\n
    override var onclick: ((MouseEvent) -> dynamic)?\n
    override var onclose: ((Event) -> dynamic)?\n
    override var oncontextmenu: ((MouseEvent) -> dynamic)?\n
    override var oncuechange: ((Event) -> dynamic)?\n
    override var ondblclick: ((MouseEvent) -> dynamic)?\n
    override var ondrag: ((DragEvent) -> dynamic)?\n
    override var ondragend: ((DragEvent) -> dynamic)?\n
    override var ondragenter: ((DragEvent) -> dynamic)?\n
    override var ondragexit: ((DragEvent) -> dynamic)?\n
    override var ondragleave: ((DragEvent) -> dynamic)?\n
    override var ondragover: ((DragEvent) -> dynamic)?\n
    override var ondragstart: ((DragEvent) -> dynamic)?\n
    override var ondrop: ((DragEvent) -> dynamic)?\n
    override var ondurationchange: ((Event) -> dynamic)?\n
    override var onemptied: ((Event) -> dynamic)?\n
    override var onended: ((Event) -> dynamic)?\n
    override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n
    override var onfocus: ((FocusEvent) -> dynamic)?\n
    override var oninput: ((InputEvent) -> dynamic)?\n
    override var oninvalid: ((Event) -> dynamic)?\n
    override var onkeydown: ((KeyboardEvent) -> dynamic)?\n
    override var onkeypress: ((KeyboardEvent) -> dynamic)?\n
    override var onkeyup: ((KeyboardEvent) -> dynamic)?\n
    override var onload: ((Event) -> dynamic)?\n
    override var onloadeddata: ((Event) -> dynamic)?\n
    override var onloadedmetadata: ((Event) -> dynamic)?\n
    override var onloadend: ((Event) -> dynamic)?\n
    override var onloadstart: ((ProgressEvent) -> dynamic)?\n
    override var onmousedown: ((MouseEvent) -> dynamic)?\n
    override var onmouseenter: ((MouseEvent) -> dynamic)?\n
    override var onmouseleave: ((MouseEvent) -> dynamic)?\n
    override var onmousemove: ((MouseEvent) -> dynamic)?\n
    override var onmouseout: ((MouseEvent) -> dynamic)?\n
    override var onmouseover: ((MouseEvent) -> dynamic)?\n
    override var onmouseup: ((MouseEvent) -> dynamic)?\n
    override var onwheel: ((WheelEvent) -> dynamic)?\n
    override var onpause: ((Event) -> dynamic)?\n
    override var onplay: ((Event) -> dynamic)?\n
    override var onplaying: ((Event) -> dynamic)?\n
    override var onprogress: ((ProgressEvent) -> dynamic)?\n
    override var onratechange: ((Event) -> dynamic)?\n
    override var onreset: ((Event) -> dynamic)?\n
    override var onresize: ((Event) -> dynamic)?\n
    override var onscroll: ((Event) -> dynamic)?\n
    override var onseeked: ((Event) -> dynamic)?\n
    override var onseeking: ((Event) -> dynamic)?\n
    override var onselect: ((Event) -> dynamic)?\n
    override var onshow: ((Event) -> dynamic)?\n
    override var onstalled: ((Event) -> dynamic)?\n
    override var onsubmit: ((Event) -> dynamic)?\n
    override var onsuspend: ((Event) -> dynamic)?\n
    override var ontimeupdate: ((Event) -> dynamic)?\n
    override var ontoggle: ((Event) -> dynamic)?\n
    override var onvolumechange: ((Event) -> dynamic)?\n
    override var onwaiting: ((Event) -> dynamic)?\n
    override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n
    override var onlostpointercapture: ((PointerEvent) -> dynamic)?\n
    override var onpointerdown: ((PointerEvent) -> dynamic)?\n
    override var onpointermove: ((PointerEvent) -> dynamic)?\n
    override var onpointerup: ((PointerEvent) -> dynamic)?\n
    override var onpointercancel: ((PointerEvent) -> dynamic)?\n
    override var onpointerover: ((PointerEvent) -> dynamic)?\n
    override var onpointerout: ((PointerEvent) -> dynamic)?\n
    override var onpointerenter: ((PointerEvent) -> dynamic)?\n
    override var onpointerleave: ((PointerEvent) -> dynamic)?\n
    override var oncopy: ((ClipboardEvent) -> dynamic)?\n
    override var oncut: ((ClipboardEvent) -> dynamic)?\n
    override var onpaste: ((ClipboardEvent) -> dynamic)?\n
    override

```

```

var contentEditable: String\n  override val isContentEditable: Boolean\n  override val style:
CSSStyleDeclaration\n  override val children: HTMLCollection\n  override val firstElementChild: Element?\n
override val lastElementChild: Element?\n  override val childElementCount: Int\n  override val
previousElementSibling: Element?\n  override val nextElementSibling: Element?\n  override val assignedSlot:
HTMLSlotElement?\n  override fun prepend(vararg nodes: dynamic)\n  override fun append(vararg nodes:
dynamic)\n  override fun querySelector(selectors: String): Element?\n  override fun querySelectorAll(selectors:
String): NodeList\n
    override fun before(vararg nodes: dynamic)\n  override fun after(vararg nodes: dynamic)\n  override fun
replaceWith(vararg nodes: dynamic)\n  override fun remove()\n  override fun getBoxQuads(options:
BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n  override fun convertQuadFromNode(quad:
dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override
fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertPointFromNode(point: DOMPointInit, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n  companion object {\n    val
NETWORK_EMPTY: Short\n    val NETWORK_IDLE: Short\n    val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n    val HAVE_NOTHING: Short\n    val HAVE_METADATA:
Short\n    val HAVE_CURRENT_DATA: Short\n    val HAVE_FUTURE_DATA:
Short\n    val HAVE_ENOUGH_DATA: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n   * Exposes the JavaScript
[Option](https://developer.mozilla.org/en/docs/Web/API/Option) to Kotlin\n   */\n  public external open class
Option(text: String = definedExternally, value: String
= definedExternally, defaultSelected: Boolean = definedExternally, selected: Boolean = definedExternally) :
HTMLOptionElement {\n    override var onabort: ((Event) -> dynamic)?\n    override var onblur: ((FocusEvent) ->
dynamic)?\n    override var oncancel: ((Event) -> dynamic)?\n    override var oncanplay: ((Event) -> dynamic)?\n
override var oncanplaythrough: ((Event) -> dynamic)?\n    override var onchange: ((Event) -> dynamic)?\n
override var onclick: ((MouseEvent) -> dynamic)?\n    override var onclose: ((Event) -> dynamic)?\n    override var
oncontextmenu: ((MouseEvent) -> dynamic)?\n    override var oncuechange: ((Event) -> dynamic)?\n    override var
ondblclick: ((MouseEvent) -> dynamic)?\n    override var ondrag: ((DragEvent) -> dynamic)?\n    override var
ondragend: ((DragEvent) -> dynamic)?\n    override var ondragenter: ((DragEvent) -> dynamic)?\n    override var
ondragexit: ((DragEvent) -> dynamic)?\n    override var ondragleave: ((DragEvent) -> dynamic)?\n
override var ondragover: ((DragEvent) -> dynamic)?\n    override var ondragstart: ((DragEvent) -> dynamic)?\n
override var ondrop: ((DragEvent) -> dynamic)?\n    override var ondurationchange: ((Event) -> dynamic)?\n
override var onemptied: ((Event) -> dynamic)?\n    override var onended: ((Event) -> dynamic)?\n    override var
onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n    override var onfocus: ((FocusEvent) -> dynamic)?\n
override var oninput: ((InputEvent) -> dynamic)?\n    override var oninvalid: ((Event) -> dynamic)?\n    override var
onkeydown: ((KeyboardEvent) -> dynamic)?\n    override var onkeypress: ((KeyboardEvent) -> dynamic)?\n
override var onkeyup: ((KeyboardEvent) -> dynamic)?\n    override var onload: ((Event) -> dynamic)?\n    override
var onloadeddata: ((Event) -> dynamic)?\n    override var onloadedmetadata: ((Event) -> dynamic)?\n    override var
onloadend: ((Event) -> dynamic)?\n    override var onloadstart: ((ProgressEvent) -> dynamic)?\n

```

```

    override var onmousedown: ((MouseEvent) -> dynamic)?\n    override var onmouseenter: ((MouseEvent) ->
dynamic)?\n    override var onmouseleave: ((MouseEvent) -> dynamic)?\n    override var onmousemove:
((MouseEvent) -> dynamic)?\n    override var onmouseout: ((MouseEvent) -> dynamic)?\n    override var
onmouseover: ((MouseEvent) -> dynamic)?\n    override var onmouseup: ((MouseEvent) -> dynamic)?\n    override
var onwheel: ((WheelEvent) -> dynamic)?\n    override var onpause: ((Event) -> dynamic)?\n    override var onplay:
((Event) -> dynamic)?\n    override var onplaying: ((Event) -> dynamic)?\n    override var onprogress:
((ProgressEvent) -> dynamic)?\n    override var onratechange: ((Event) -> dynamic)?\n    override var onreset:
((Event) -> dynamic)?\n    override var onresize: ((Event) -> dynamic)?\n    override var onscroll: ((Event) ->
dynamic)?\n    override var onseeked: ((Event) -> dynamic)?\n    override var onseeking: ((Event) -> dynamic)?\n
override var onselect: ((Event)
-> dynamic)?\n    override var onshow: ((Event) -> dynamic)?\n    override var onstalled: ((Event) -> dynamic)?\n
override var onsubmit: ((Event) -> dynamic)?\n    override var onsuspend: ((Event) -> dynamic)?\n    override var
ontimeupdate: ((Event) -> dynamic)?\n    override var ontoggle: ((Event) -> dynamic)?\n    override var
onvolumechange: ((Event) -> dynamic)?\n    override var onwaiting: ((Event) -> dynamic)?\n    override var
ongotpointercapture: ((PointerEvent) -> dynamic)?\n    override var onlostpointercapture: ((PointerEvent) ->
dynamic)?\n    override var onpointerdown: ((PointerEvent) -> dynamic)?\n    override var onpointermove:
((PointerEvent) -> dynamic)?\n    override var onpointerup: ((PointerEvent) -> dynamic)?\n    override var
onpointercancel: ((PointerEvent) -> dynamic)?\n    override var onpointerover: ((PointerEvent) -> dynamic)?\n
override var onpointerout: ((PointerEvent) -> dynamic)?\n    override var onpointerenter: ((PointerEvent) ->
dynamic)?\n
    override var onpointerleave: ((PointerEvent) -> dynamic)?\n    override var oncopy: ((ClipboardEvent) ->
dynamic)?\n    override var oncut: ((ClipboardEvent) -> dynamic)?\n    override var onpaste: ((ClipboardEvent) ->
dynamic)?\n    override var contentEditable: String\n    override val isContentEditable: Boolean\n    override val
style: CSSStyleDeclaration\n    override val children: HTMLCollection\n    override val firstElementChild:
Element?\n    override val lastElementChild: Element?\n    override val childElementCount: Int\n    override val
previousElementSibling: Element?\n    override val nextElementSibling: Element?\n    override val assignedSlot:
HTMLSlotElement?\n    override fun prepend(vararg nodes: dynamic)\n    override fun append(vararg nodes:
dynamic)\n    override fun querySelector(selectors: String): Element?\n    override fun querySelectorAll(selectors:
String): NodeList\n    override fun before(vararg nodes: dynamic)\n    override fun after(vararg nodes: dynamic)\n
    override fun replaceWith(vararg nodes: dynamic)\n    override fun remove()\n    override fun
getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n    override fun
convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally
*/): DOMQuad\n    override fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options:
ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n    override fun convertPointFromNode(point:
DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE:
Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n\n\npublic external interface
UnionElementOrHTMLCollection\n\npublic external interface UnionElementOrRadioNodeList\n\npublic external
interface UnionHTMLOptGroupElementOrHTMLOptionElement\n\npublic external interface
UnionAudioTrackOrTextTrackOrVideoTrack\n\npublic external interface UnionElementOrMouseEvent\n\npublic
external interface UnionMessagePortOrWindowProxy\n\npublic external interface MediaProvider\n\n\npublic

```

```

external interface RenderingContext\n\npublic external interface HTMLOrSVGImageElement :
CanvasImageSource\n\npublic external interface CanvasImageSource : ImageBitmapSource\n\npublic
external interface ImageBitmapSource\n\npublic external interface HTMLOrSVGScriptElement\n\n/* please, don't
implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface DocumentReadyState {\n companion object\n}\n\npublic inline val
DocumentReadyState.Companion.LOADING: DocumentReadyState get() =
"loading".asDynamic().unsafeCast<DocumentReadyState>()\n\npublic inline val
DocumentReadyState.Companion.INTERACTIVE: DocumentReadyState get() =
"interactive".asDynamic().unsafeCast<DocumentReadyState>()\n\npublic inline val
DocumentReadyState.Companion.COMPLETE: DocumentReadyState get() =
"complete".asDynamic().unsafeCast<DocumentReadyState>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface CanPlayTypeResult {\n companion object\n}\n\npublic inline val
CanPlayTypeResult.Companion.EMPTY: CanPlayTypeResult get() =
""\n\npublic inline val CanPlayTypeResult.Companion.MAYBE: CanPlayTypeResult get() =
"maybe".asDynamic().unsafeCast<CanPlayTypeResult>()\n\npublic inline val
CanPlayTypeResult.Companion.PROBABLY: CanPlayTypeResult get() =
"probably".asDynamic().unsafeCast<CanPlayTypeResult>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface TextTrackMode {\n companion object\n}\n\npublic inline val TextTrackMode.Companion.DISABLED:
TextTrackMode get() = "disabled".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.HIDDEN: TextTrackMode get() =
"hidden".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.SHOWING: TextTrackMode get() =
"showing".asDynamic().unsafeCast<TextTrackMode>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic
external interface TextTrackKind {\n companion object\n}\n\npublic inline val
TextTrackKind.Companion.SUBTITLES: TextTrackKind get() =
"subtitles".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.CAPTIONS: TextTrackKind get() =
"captions".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.DESCRPTIONS: TextTrackKind get() =
"descriptions".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.CHAPTERS: TextTrackKind get() =
"chapters".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.METADATA: TextTrackKind get() =
"metadata".asDynamic().unsafeCast<TextTrackKind>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface SelectionMode {\n companion object\n}\n\npublic inline val SelectionMode.Companion.SELECT:
SelectionMode get()
= "select".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val SelectionMode.Companion.START:
SelectionMode get() = "start".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val
SelectionMode.Companion.END: SelectionMode get() =
"end".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val SelectionMode.Companion.PRESERVE:
SelectionMode get() = "preserve".asDynamic().unsafeCast<SelectionMode>()\n\n/* please, don't implement this
interface! *\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic

```

```

external interface CanvasFillRule {
    companion object
}
public inline val
CanvasFillRule.Companion.NONZERO: CanvasFillRule get() =
    "nonzero".asDynamic().unsafeCast<CanvasFillRule>()
public inline val
CanvasFillRule.Companion.EVENODD: CanvasFillRule get() =
    "evenodd".asDynamic().unsafeCast<CanvasFillRule>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public
external interface ImageSmoothingQuality {
    companion object
}
public inline val
ImageSmoothingQuality.Companion.LOW: ImageSmoothingQuality get() =
    "low".asDynamic().unsafeCast<ImageSmoothingQuality>()
public inline val
ImageSmoothingQuality.Companion.MEDIUM: ImageSmoothingQuality get() =
    "medium".asDynamic().unsafeCast<ImageSmoothingQuality>()
public inline val
ImageSmoothingQuality.Companion.HIGH: ImageSmoothingQuality get() =
    "high".asDynamic().unsafeCast<ImageSmoothingQuality>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public
external
interface CanvasLineCap {
    companion object
}
public inline val CanvasLineCap.Companion.BUTT:
CanvasLineCap get() = "butt".asDynamic().unsafeCast<CanvasLineCap>()
public inline val
CanvasLineCap.Companion.ROUND: CanvasLineCap get() =
    "round".asDynamic().unsafeCast<CanvasLineCap>()
public inline val CanvasLineCap.Companion.SQUARE:
CanvasLineCap get() = "square".asDynamic().unsafeCast<CanvasLineCap>()
/* please, don't implement this
interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public
external
interface CanvasLineJoin {
    companion object
}
public inline val
CanvasLineJoin.Companion.ROUND: CanvasLineJoin get() =
    "round".asDynamic().unsafeCast<CanvasLineJoin>()
public inline val CanvasLineJoin.Companion.BEVEL:
CanvasLineJoin get() = "bevel".asDynamic().unsafeCast<CanvasLineJoin>()
public inline val
CanvasLineJoin.Companion.MITER: CanvasLineJoin get() =
    "miter".asDynamic().unsafeCast<CanvasLineJoin>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public
external
interface CanvasTextAlign {
    companion object
}
public inline val CanvasTextAlign.Companion.START:
CanvasTextAlign get() = "start".asDynamic().unsafeCast<CanvasTextAlign>()
public inline val
CanvasTextAlign.Companion.END:
CanvasTextAlign get() = "end".asDynamic().unsafeCast<CanvasTextAlign>()
public inline val
CanvasTextAlign.Companion.LEFT: CanvasTextAlign get() =
    "left".asDynamic().unsafeCast<CanvasTextAlign>()
public inline val CanvasTextAlign.Companion.RIGHT:
CanvasTextAlign get() = "right".asDynamic().unsafeCast<CanvasTextAlign>()
public inline val
CanvasTextAlign.Companion.CENTER: CanvasTextAlign get() =
    "center".asDynamic().unsafeCast<CanvasTextAlign>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public
external
interface CanvasTextBaseline {
    companion object
}
public inline val CanvasTextBaseline.Companion.TOP:
CanvasTextBaseline get() = "top".asDynamic().unsafeCast<CanvasTextBaseline>()
public inline val
CanvasTextBaseline.Companion.HANGING: CanvasTextBaseline get() =
    "hanging".asDynamic().unsafeCast<CanvasTextBaseline>()
public inline val
CanvasTextBaseline.Companion.MIDDLE:
CanvasTextBaseline get() = "middle".asDynamic().unsafeCast<CanvasTextBaseline>()
public inline val
CanvasTextBaseline.Companion.ALPHABETIC: CanvasTextBaseline get() =
    "alphabetic".asDynamic().unsafeCast<CanvasTextBaseline>()
public inline val
CanvasTextBaseline.Companion.IDEOGRAPHIC: CanvasTextBaseline get() =
    "ideographic".asDynamic().unsafeCast<CanvasTextBaseline>()
public inline val
CanvasTextBaseline.Companion.BOTTOM: CanvasTextBaseline get() =

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\"bottom\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface CanvasDirection {\n  companion object\n}\n\npublic inline val CanvasDirection.Companion.LTR:
CanvasDirection get() = \"ltr\".asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val
CanvasDirection.Companion.RTL: CanvasDirection get() =
\"rtl\".asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val CanvasDirection.Companion.INHERIT:
CanvasDirection get() = \"inherit\".asDynamic().unsafeCast<CanvasDirection>()\n\n/* please, don't implement this
interface! *\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface ScrollRestoration {\n  companion object\n}\n\npublic inline val
ScrollRestoration.Companion.AUTO: ScrollRestoration get() =
\"auto\".asDynamic().unsafeCast<ScrollRestoration>()\n\npublic inline val
ScrollRestoration.Companion.MANUAL: ScrollRestoration get() =
\"manual\".asDynamic().unsafeCast<ScrollRestoration>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface ImageOrientation {\n  companion object\n}\n\npublic inline val ImageOrientation.Companion.NONE:
ImageOrientation get() = \"none\".asDynamic().unsafeCast<ImageOrientation>()\n\npublic inline val
ImageOrientation.Companion.FLIPY: ImageOrientation get() =
\"flipY\".asDynamic().unsafeCast<ImageOrientation>()\n\n/*
please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface PremultiplyAlpha {\n  companion object\n}\n\npublic inline val PremultiplyAlpha.Companion.NONE:
PremultiplyAlpha get() = \"none\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.PREMULTIPLY: PremultiplyAlpha get() =
\"premultiply\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.DEFAULT: PremultiplyAlpha get() =
\"default\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface ColorSpaceConversion {\n  companion object\n}\n\npublic inline val
ColorSpaceConversion.Companion.NONE: ColorSpaceConversion get() =
\"none\".asDynamic().unsafeCast<ColorSpaceConversion>()\n\npublic inline val
ColorSpaceConversion.Companion.DEFAULT:
ColorSpaceConversion get() = \"default\".asDynamic().unsafeCast<ColorSpaceConversion>()\n\n/* please, don't
implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface ResizeQuality {\n  companion object\n}\n\npublic inline val ResizeQuality.Companion.PIXELATED:
ResizeQuality get() = \"pixelated\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val
ResizeQuality.Companion.LOW: ResizeQuality get() =
\"low\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val ResizeQuality.Companion.MEDIUM:
ResizeQuality get() = \"medium\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val
ResizeQuality.Companion.HIGH: ResizeQuality get() = \"high\".asDynamic().unsafeCast<ResizeQuality>()\n\n/*
please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface BinaryType {\n  companion object\n}\n\npublic inline
val BinaryType.Companion.BLOB: BinaryType get() = \"blob\".asDynamic().unsafeCast<BinaryType>()\n\npublic
inline val BinaryType.Companion.ARRAYBUFFER: BinaryType get() =
\"arraybuffer\".asDynamic().unsafeCast<BinaryType>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface WorkerType {\n  companion object\n}\n\npublic inline val WorkerType.Companion.CLASSIC:

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WorkerType get() = \"classic\".asDynamic().unsafeCast<WorkerType>()\n\npublic inline val
WorkerType.Companion.MODULE: WorkerType get() =
\"module\".asDynamic().unsafeCast<WorkerType>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface ShadowRootMode {\n  companion object\n}\n\npublic inline val ShadowRootMode.Companion.OPEN:
ShadowRootMode get() = \"open\".asDynamic().unsafeCast<ShadowRootMode>()\n\npublic inline val
ShadowRootMode.Companion.CLOSED:
ShadowRootMode get() = \"closed\".asDynamic().unsafeCast<ShadowRootMode>()\n\n/* please, don't implement
this interface! *\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface ScrollBehavior {\n  companion object\n}\n\npublic inline val ScrollBehavior.Companion.AUTO:
ScrollBehavior get() = \"auto\".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic inline val
ScrollBehavior.Companion.INSTANT: ScrollBehavior get() =
\"instant\".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic inline val ScrollBehavior.Companion.SMOOTH:
ScrollBehavior get() = \"smooth\".asDynamic().unsafeCast<ScrollBehavior>()\n\n/* please, don't implement this
interface! *\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface ScrollLogicalPosition {\n  companion object\n}\n\npublic inline val
ScrollLogicalPosition.Companion.START: ScrollLogicalPosition get() =
\"start\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic
inline val ScrollLogicalPosition.Companion.CENTER: ScrollLogicalPosition get() =
\"center\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.END: ScrollLogicalPosition get() =
\"end\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.NEAREST: ScrollLogicalPosition get() =
\"nearest\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface CSSBoxType {\n  companion object\n}\n\npublic inline val CSSBoxType.Companion.MARGIN:
CSSBoxType get() = \"margin\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val
CSSBoxType.Companion.BORDER: CSSBoxType get() =
\"border\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val CSSBoxType.Companion.PADDING:
CSSBoxType get() = \"padding\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline
val CSSBoxType.Companion.CONTENT: CSSBoxType get() =
\"content\".asDynamic().unsafeCast<CSSBoxType>()\", \"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n@n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.fetch\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.files.*\nimport org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript
[Headers](https://developer.mozilla.org/en/docs/Web/API/Headers) to Kotlin\n *\npublic external open class
Headers(init: dynamic = definedExternally) {\n  fun append(name: String, value: String)\n  fun delete(name:
String)\n  fun get(name: String): String?\n  fun has(name: String): Boolean\n  fun set(name: String, value:
String)\n}\n\n/**\n * Exposes the JavaScript [Body](https://developer.mozilla.org/en/docs/Web/API/Body)
to Kotlin\n *\npublic external interface Body {\n  val bodyUsed: Boolean\n  fun ArrayBuffer():
Promise<ArrayBuffer>\n  fun blob(): Promise<Blob>\n  fun formData(): Promise<FormData>\n  fun json():
Promise<Any?>\n  fun text(): Promise<String>\n}\n\n/**\n * Exposes the JavaScript
[Request](https://developer.mozilla.org/en/docs/Web/API/Request) to Kotlin\n *\npublic external open class
Request(input: dynamic, init: RequestInit = definedExternally) : Body {\n  open val method: String\n  open val
url: String\n  open val headers: Headers\n  open val type: RequestType\n  open val destination:
RequestDestination\n  open val referrer: String\n  open val referrerPolicy: dynamic\n  open val mode:
RequestMode\n  open val credentials: RequestCredentials\n  open val cache: RequestCache\n  open val redirect:

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RequestRedirect\n  open val integrity: String\n  open val keepalive: Boolean\n  override val bodyUsed:
Boolean\n  fun clone(): Request\n  override
  fun arrayBuffer(): Promise<ArrayBuffer>\n  override fun blob(): Promise<Blob>\n  override fun formData():
Promise<FormData>\n  override fun json(): Promise<Any?>\n  override fun text(): Promise<String>\n}\n\npublic
external interface RequestInit {\n  var method: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var headers: dynamic\n  get() = definedExternally\n  set(value) = definedExternally\n
var body: dynamic\n  get() = definedExternally\n  set(value) = definedExternally\n  var referrer: String?\n
  get() = definedExternally\n  set(value) = definedExternally\n  var referrerPolicy: dynamic\n  get() =
definedExternally\n  set(value) = definedExternally\n  var mode: RequestMode?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var credentials: RequestCredentials?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var
  cache: RequestCache?\n  get() = definedExternally\n  set(value) = definedExternally\n  var redirect:
RequestRedirect?\n  get() = definedExternally\n  set(value) = definedExternally\n  var integrity: String?\n
  get() = definedExternally\n  set(value) = definedExternally\n  var keepalive: Boolean?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var window: Any?\n  get() = definedExternally\n
set(value) = definedExternally}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun RequestInit(method: String? =
undefined, headers: dynamic = undefined, body: dynamic = undefined, referrer: String? = undefined, referrerPolicy:
dynamic = undefined, mode: RequestMode? = undefined, credentials: RequestCredentials? = undefined, cache:
RequestCache? = undefined, redirect: RequestRedirect? = undefined, integrity: String? = undefined, keepalive:
Boolean? = undefined,
window: Any? = undefined): RequestInit {\n  val o = js("{}")\n  o["method"] = method\n  o["headers"] =
headers\n  o["body"] = body\n  o["referrer"] = referrer\n  o["referrerPolicy"] = referrerPolicy\n
o["mode"] = mode\n  o["credentials"] = credentials\n  o["cache"] = cache\n  o["redirect"] = redirect\n
o["integrity"] = integrity\n  o["keepalive"] = keepalive\n  o["window"] = window\n  return o\n}\n\n/**\n *
Exposes the JavaScript [Response](https://developer.mozilla.org/en/docs/Web/API/Response) to Kotlin\n */\npublic
external open class Response(body: dynamic = definedExternally, init: ResponseInit = definedExternally) : Body
{\n  open val type: ResponseType\n  open val url: String\n  open val redirected: Boolean\n  open val status:
Short\n  open val ok: Boolean\n  open val statusText: String\n  open val headers: Headers\n  open val body:
dynamic\n  open val trailer: Promise<Headers>\n  override val bodyUsed:
Boolean\n  fun clone(): Response\n  override fun arrayBuffer(): Promise<ArrayBuffer>\n  override fun blob():
Promise<Blob>\n  override fun formData(): Promise<FormData>\n  override fun json(): Promise<Any?>\n
override fun text(): Promise<String>\n\n  companion object {\n    fun error(): Response\n    fun redirect(url:
String, status: Short = definedExternally): Response\n  }\n}\n\npublic external interface ResponseInit {\n  var
status: Short? /* = 200 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var statusText:
String? /* = "OK" */\n  get() = definedExternally\n  set(value) = definedExternally\n  var headers:
dynamic\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ResponseInit(status: Short? = 200,
statusText: String? = "OK", headers: dynamic = undefined): ResponseInit
{\n  val o = js("{}")\n  o["status"] = status\n  o["statusText"] = statusText\n  o["headers"] = headers\n
return o\n}\n\n/* please, don't implement this interface!\n */\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface RequestType {\n  companion object\n}\n\npublic inline val RequestType.Companion.EMPTY:
RequestType get() = ""\n\npublic inline val
RequestType.Companion.AUDIO: RequestType get() =
"audio"\n\npublic inline val RequestType.Companion.FONT:
RequestType get() = "font"\n\npublic inline val

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RequestType.Companion.IMAGE: RequestType get() =
    \"image\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.SCRIPT:
RequestType get() = \"script\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.STYLE: RequestType get() =
    \"style\".asDynamic().unsafeCast<RequestType>()\n\npublic
    inline val RequestType.Companion.TRACK: RequestType get() =
    \"track\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.VIDEO:
RequestType get() = \"video\".asDynamic().unsafeCast<RequestType>()\n\n/* please, don't implement this
interface! *\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface RequestDestination {\n    companion object\n}\n\npublic inline val
RequestDestination.Companion.EMPTY: RequestDestination get() =
    \"\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.DOCUMENT: RequestDestination get() =
    \"document\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.EMBED: RequestDestination get() =
    \"embed\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.FONT: RequestDestination get() =
    \"font\".asDynamic().unsafeCast<RequestDestination>()\n\npublic
    inline val RequestDestination.Companion.IMAGE: RequestDestination get() =
    \"image\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MANIFEST: RequestDestination get() =
    \"manifest\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MEDIA: RequestDestination get() =
    \"media\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.OBJECT: RequestDestination get() =
    \"object\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.REPORT: RequestDestination get() =
    \"report\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SCRIPT: RequestDestination get() =
    \"script\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SERVICEWORKER: RequestDestination get() =
    \"serviceworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic
    inline val RequestDestination.Companion.SHAREDWORKER: RequestDestination get() =
    \"sharedworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.STYLE: RequestDestination get() =
    \"style\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.WORKER: RequestDestination get() =
    \"worker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.XSLT: RequestDestination get() =
    \"xslt\".asDynamic().unsafeCast<RequestDestination>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestMode {\n    companion object\n}\n\npublic inline val RequestMode.Companion.NAVIGATE:
RequestMode get() = \"navigate\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.SAME_ORIGIN: RequestMode get() = \"same-
origin\".asDynamic().unsafeCast<RequestMode>()\n\npublic
    inline val RequestMode.Companion.NO_CORS: RequestMode get() = \"no-
cors\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val RequestMode.Companion.CORS:
RequestMode get() = \"cors\".asDynamic().unsafeCast<RequestMode>()\n\n/* please, don't implement this

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interface! *\/n@JsName("null")n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")npublic
external interface RequestCredentials {n  companion objectn}n\npublic inline val
RequestCredentials.Companion.OMIT: RequestCredentials get() =
"omit".asDynamic().unsafeCast<RequestCredentials>()n\npublic inline val
RequestCredentials.Companion.SAME_ORIGIN: RequestCredentials get() = "same-
origin".asDynamic().unsafeCast<RequestCredentials>()n\npublic inline val
RequestCredentials.Companion.INCLUDE: RequestCredentials get() =
"include".asDynamic().unsafeCast<RequestCredentials>()n\n/* please, don't implement this interface!
*\/n@JsName("null")n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")npublic
external interface RequestCache {n  companion objectn}n\npublic inline val
RequestCache.Companion.DEFAULT: RequestCache get() =
"default".asDynamic().unsafeCast<RequestCache>()n\npublic inline val RequestCache.Companion.NO_STORE:
RequestCache get() = "no-store".asDynamic().unsafeCast<RequestCache>()n\npublic inline val
RequestCache.Companion.RELOAD: RequestCache get() =
"reload".asDynamic().unsafeCast<RequestCache>()n\npublic inline val RequestCache.Companion.NO_CACHE:
RequestCache get() = "no-cache".asDynamic().unsafeCast<RequestCache>()n\npublic inline val
RequestCache.Companion.FORCE_CACHE: RequestCache get() = "force-
cache".asDynamic().unsafeCast<RequestCache>()n\npublic inline val
RequestCache.Companion.ONLY_IF_CACHED: RequestCache get() = "only-if-
cached".asDynamic().unsafeCast<RequestCache>()n\n/* please, don't implement this interface!
*\/n@JsName("null")n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")npublic external
interface RequestRedirect
{n  companion objectn}n\npublic inline val RequestRedirect.Companion.FOLLOW: RequestRedirect get() =
"follow".asDynamic().unsafeCast<RequestRedirect>()n\npublic inline val RequestRedirect.Companion.ERROR:
RequestRedirect get() = "error".asDynamic().unsafeCast<RequestRedirect>()n\npublic inline val
RequestRedirect.Companion.MANUAL: RequestRedirect get() =
"manual".asDynamic().unsafeCast<RequestRedirect>()n\n/* please, don't implement this interface!
*\/n@JsName("null")n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")npublic external
interface ResponseType {n  companion objectn}n\npublic inline val ResponseType.Companion.BASIC:
ResponseType get() = "basic".asDynamic().unsafeCast<ResponseType>()n\npublic inline val
ResponseType.Companion.CORS: ResponseType get() =
"cors".asDynamic().unsafeCast<ResponseType>()n\npublic inline val ResponseType.Companion.DEFAULT:
ResponseType get() = "default".asDynamic().unsafeCast<ResponseType>()n\npublic inline
val ResponseType.Companion.ERROR: ResponseType get() =
"error".asDynamic().unsafeCast<ResponseType>()n\npublic inline val ResponseType.Companion.OPAQUE:
ResponseType get() = "opaque".asDynamic().unsafeCast<ResponseType>()n\npublic inline val
ResponseType.Companion.OPAQUEREDIRECT: ResponseType get() =
"opaqueredirect".asDynamic().unsafeCast<ResponseType>()n\n/*n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.n *\/n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.mediacapture\n\nimport
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/* Exposes
the JavaScript [MediaStream](https://developer.mozilla.org/en/docs/Web/API/MediaStream) to Kotlin\n\n*/n\npublic
external open class MediaStream() : EventTarget, MediaProvider
{n  constructor(stream: MediaStream)\n  constructor(tracks: Array<MediaStreamTrack>)\n  open val id:
String\n  open val active: Boolean\n  var onaddtrack: ((MediaStreamTrackEvent) -> dynamic)?\n  var
onremovetrack: ((MediaStreamTrackEvent) -> dynamic)?\n  fun getAudioTracks(): Array<MediaStreamTrack>\n
fun getVideoTracks(): Array<MediaStreamTrack>\n  fun getTracks(): Array<MediaStreamTrack>\n  fun

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getTrackById(trackId: String): MediaStreamTrack?
fun addTrack(track: MediaStreamTrack)
fun removeTrack(track: MediaStreamTrack)
fun clone(): MediaStreamTrack
}

/** Exposes the JavaScript [MediaStreamTrack](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrack) to Kotlin */
public external abstract class MediaStreamTrack : EventTarget {
    open val kind: String
    open val id: String
    open val label: String
    open var enabled: Boolean
    open val muted: Boolean
    open var onmute: ((Event) -> dynamic)?
    open var onunmute: ((Event) -> dynamic)?
    open val readyState: MediaStreamTrackState
    open var onended: ((Event) -> dynamic)?
    open var onoverconstrained: ((Event) -> dynamic)?
    fun clone(): MediaStreamTrack
    fun stop()
    fun getCapabilities(): MediaTrackCapabilities
    fun getConstraints(): MediaTrackConstraints
    fun getSettings(): MediaTrackSettings
    fun applyConstraints(constraints: MediaTrackConstraints = definedExternally): Promise<Unit>
}

/** Exposes the JavaScript [MediaTrackSupportedConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSupportedConstraints) to Kotlin */
public external interface MediaTrackSupportedConstraints {
    var width: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var height: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var aspectRatio: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var frameRate: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var facingMode: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var resizeMode: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var volume: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var sampleRate: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var sampleSize: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var echoCancellation: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var autoGainControl: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var noiseSuppression: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var latency: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var channelCount: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var deviceId: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
    var groupId: Boolean? /* = true */
    fun get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun MediaTrackSupportedConstraints(width: Boolean? = true, height: Boolean? = true, aspectRatio: Boolean? = true, frameRate: Boolean? = true, facingMode: Boolean? = true, resizeMode: Boolean? = true, volume: Boolean? = true, sampleRate: Boolean? = true, sampleSize: Boolean? = true, echoCancellation: Boolean? = true, autoGainControl: Boolean? = true, noiseSuppression: Boolean? = true, latency: Boolean? = true, channelCount: Boolean? = true, deviceId: Boolean? = true, groupId: Boolean? = true): MediaTrackSupportedConstraints {
    val o = js("{}")
    o["width"] = width
    o["height"] = height
    o["aspectRatio"] = aspectRatio
    o["frameRate"] = frameRate
    o["facingMode"] = facingMode
    o["resizeMode"] = resizeMode
    o["volume"] = volume
    o["sampleRate"] = sampleRate
    o["sampleSize"] = sampleSize
    o["echoCancellation"] = echoCancellation
    o["autoGainControl"] = autoGainControl
    o["noiseSuppression"] = noiseSuppression
    o["latency"] = latency
    o["channelCount"] = channelCount
    o["deviceId"] = deviceId
    o["groupId"] = groupId
    return o
}

public external interface MediaTrackCapabilities {
    var width: ULongRange?
    fun get() = definedExternally
    set(value) = definedExternally
    var height: ULongRange?
    fun get() = definedExternally
    set(value) = definedExternally
    var aspectRatio: DoubleRange?
    fun get() = definedExternally
    set(value) = definedExternally
    var frameRate: DoubleRange?
    fun get() = definedExternally
    set(value) = definedExternally
    var facingMode:

```

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Array<String>? \n      get() = definedExternally \n      set(value) = definedExternally \n      var resizeMode:
Array<String>? \n      get() = definedExternally \n      set(value) = definedExternally \n      var volume:
DoubleRange? \n      get() = definedExternally \n      set(value) = definedExternally \n      var sampleRate:
ULongRange? \n      get() = definedExternally \n      set(value) = definedExternally \n      var sampleSize:
ULongRange? \n      get() = definedExternally \n      set(value) = definedExternally \n      var echoCancellation:
Array<Boolean>? \n      get() = definedExternally \n      set(value) = definedExternally \n      var autoGainControl:
Array<Boolean>? \n
      get() = definedExternally \n      set(value) = definedExternally \n      var noiseSuppression: Array<Boolean>? \n
      get() = definedExternally \n      set(value) = definedExternally \n      var latency: DoubleRange? \n      get() =
definedExternally \n      set(value) = definedExternally \n      var channelCount: ULongRange? \n      get() =
definedExternally \n      set(value) = definedExternally \n      var deviceId: String? \n      get() = definedExternally \n
      set(value) = definedExternally \n      var groupId: String? \n      get() = definedExternally \n      set(value) =
definedExternally \n } \n \n @Suppress(\ "INVISIBLE_REFERENCE" ,
\ "INVISIBLE_MEMBER" ) \n @kotlin.internal.InlineOnly \n public inline fun MediaTrackCapabilities(width:
ULongRange? = undefined, height: ULongRange? = undefined, aspectRatio: DoubleRange? = undefined,
frameRate: DoubleRange? = undefined, facingMode: Array<String>? = undefined, resizeMode: Array<String>? =
undefined, volume: DoubleRange?
= undefined, sampleRate: ULongRange? = undefined, sampleSize: ULongRange? = undefined, echoCancellation:
Array<Boolean>? = undefined, autoGainControl: Array<Boolean>? = undefined, noiseSuppression:
Array<Boolean>? = undefined, latency: DoubleRange? = undefined, channelCount: ULongRange? = undefined,
deviceId: String? = undefined, groupId: String? = undefined): MediaTrackCapabilities { \n      val o = js(\ "{ }" ) \n
o[\ "width" ] = width \n      o[\ "height" ] = height \n      o[\ "aspectRatio" ] = aspectRatio \n      o[\ "frameRate" ] =
frameRate \n      o[\ "facingMode" ] = facingMode \n      o[\ "resizeMode" ] = resizeMode \n      o[\ "volume" ] = volume \n
o[\ "sampleRate" ] = sampleRate \n      o[\ "sampleSize" ] = sampleSize \n      o[\ "echoCancellation" ] =
echoCancellation \n      o[\ "autoGainControl" ] = autoGainControl \n      o[\ "noiseSuppression" ] = noiseSuppression \n
o[\ "latency" ] = latency \n      o[\ "channelCount" ] = channelCount \n      o[\ "deviceId" ] = deviceId \n      o[\ "groupId" ] =
groupId \n      return o \n } \n \n /** \n
* Exposes the JavaScript
[MediaTrackConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackConstraints) to Kotlin \n
*/ \n public external interface MediaTrackConstraints : MediaTrackConstraintSet { \n      var advanced:
Array<MediaTrackConstraintSet>? \n      get() = definedExternally \n      set(value) =
definedExternally \n } \n \n @Suppress(\ "INVISIBLE_REFERENCE" ,
\ "INVISIBLE_MEMBER" ) \n @kotlin.internal.InlineOnly \n public inline fun MediaTrackConstraints(advanced:
Array<MediaTrackConstraintSet>? = undefined, width: dynamic = undefined, height: dynamic = undefined,
aspectRatio: dynamic = undefined, frameRate: dynamic = undefined, facingMode: dynamic = undefined,
resizeMode: dynamic = undefined, volume: dynamic = undefined, sampleRate: dynamic = undefined, sampleSize:
dynamic = undefined, echoCancellation: dynamic = undefined, autoGainControl: dynamic = undefined,
noiseSuppression: dynamic = undefined, latency: dynamic = undefined, channelCount: dynamic = undefined,
deviceId: dynamic = undefined, groupId: dynamic = undefined): MediaTrackConstraints { \n      val o = js(\ "{ }" ) \n
o[\ "advanced" ] = advanced \n      o[\ "width" ] = width \n      o[\ "height" ] = height \n      o[\ "aspectRatio" ] =
aspectRatio \n      o[\ "frameRate" ] = frameRate \n      o[\ "facingMode" ] = facingMode \n      o[\ "resizeMode" ] =
resizeMode \n      o[\ "volume" ] = volume \n      o[\ "sampleRate" ] = sampleRate \n      o[\ "sampleSize" ] = sampleSize \n
o[\ "echoCancellation" ] = echoCancellation \n      o[\ "autoGainControl" ] = autoGainControl \n
o[\ "noiseSuppression" ] = noiseSuppression \n      o[\ "latency" ] = latency \n      o[\ "channelCount" ] = channelCount \n
o[\ "deviceId" ] = deviceId \n      o[\ "groupId" ] = groupId \n      return o \n } \n \n public external interface
MediaTrackConstraintSet { \n      var width: dynamic \n      get() = definedExternally \n      set(value) =
definedExternally \n      var height: dynamic \n      get() = definedExternally \n      set(value) = definedExternally \n
var aspectRatio:

```

```

dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n    var frameRate: dynamic\n
get() = definedExternally\n    set(value) = definedExternally\n    var facingMode: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n    var resizeMode: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n    var volume: dynamic\n    get() = definedExternally\n
    set(value) = definedExternally\n    var sampleRate: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var sampleSize: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var echoCancellation: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var autoGainControl: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var noiseSuppression: dynamic\n    get() = definedExternally\n
    set(value) = definedExternally\n    var latency: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var channelCount: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var deviceId: dynamic\n    get() = definedExternally\n    set(value) = definedExternally\n
    var groupId: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun MediaTrackConstraintSet(width:
dynamic = undefined, height: dynamic = undefined, aspectRatio: dynamic = undefined, frameRate: dynamic =
undefined, facingMode: dynamic = undefined, resizeMode: dynamic = undefined, volume: dynamic = undefined,
sampleRate: dynamic = undefined, sampleSize: dynamic = undefined, echoCancellation: dynamic = undefined,
autoGainControl: dynamic = undefined, noiseSuppression: dynamic = undefined, latency: dynamic
= undefined, channelCount: dynamic = undefined, deviceId: dynamic = undefined, groupId: dynamic = undefined):
MediaTrackConstraintSet {\n    val o = js(\"({})\")\n    o[\"width\"] = width\n    o[\"height\"] = height\n
o[\"aspectRatio\"] = aspectRatio\n    o[\"frameRate\"] = frameRate\n    o[\"facingMode\"] = facingMode\n
o[\"resizeMode\"] = resizeMode\n    o[\"volume\"] = volume\n    o[\"sampleRate\"] = sampleRate\n
o[\"sampleSize\"] = sampleSize\n    o[\"echoCancellation\"] = echoCancellation\n    o[\"autoGainControl\"] =
autoGainControl\n    o[\"noiseSuppression\"] = noiseSuppression\n    o[\"latency\"] = latency\n
o[\"channelCount\"] = channelCount\n    o[\"deviceId\"] = deviceId\n    o[\"groupId\"] = groupId\n    return
o}\n}\n\n/**\n * Exposes the JavaScript
[MediaTrackSettings](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSettings) to Kotlin\n *\n\npublic
external interface MediaTrackSettings {\n    var width: Int?\n        get() = definedExternally\n
    set(value) = definedExternally\n    var height: Int?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var aspectRatio: Double?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var frameRate: Double?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var facingMode: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var resizeMode: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var volume: Double?\n        get() = definedExternally\n        set(value) = definedExternally\n
    var sampleRate: Int?\n        get() = definedExternally\n        set(value) = definedExternally\n    var sampleSize:
Int?\n        get() = definedExternally\n        set(value) = definedExternally\n    var echoCancellation: Boolean?\n
get() = definedExternally\n        set(value) = definedExternally\n    var autoGainControl: Boolean?\n
get() = definedExternally\n        set(value) = definedExternally\n    var noiseSuppression: Boolean?\n        get() =
definedExternally\n        set(value) = definedExternally\n    var latency: Double?\n        get() = definedExternally\n
set(value) = definedExternally\n    var channelCount: Int?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var deviceId: String?\n        get() = definedExternally\n        set(value) = definedExternally\n
    var groupId: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun MediaTrackSettings(width: Int? =
undefined, height: Int? = undefined, aspectRatio: Double? = undefined, frameRate: Double? = undefined,
facingMode: String? = undefined, resizeMode: String? = undefined, volume: Double? = undefined, sampleRate: Int?
= undefined, sampleSize: Int? = undefined, echoCancellation:

```

```

Boolean? = undefined, autoGainControl: Boolean? = undefined, noiseSuppression: Boolean? = undefined, latency:
Double? = undefined, channelCount: Int? = undefined, deviceId: String? = undefined, groupId: String? =
undefined): MediaTrackSettings {\n  val o = js("{}")\n  o["width"] = width\n  o["height"] = height\n
o["aspectRatio"] = aspectRatio\n  o["frameRate"] = frameRate\n  o["facingMode"] = facingMode\n
o["resizeMode"] = resizeMode\n  o["volume"] = volume\n  o["sampleRate"] = sampleRate\n
o["sampleSize"] = sampleSize\n  o["echoCancellation"] = echoCancellation\n  o["autoGainControl"] =
autoGainControl\n  o["noiseSuppression"] = noiseSuppression\n  o["latency"] = latency\n
o["channelCount"] = channelCount\n  o["deviceId"] = deviceId\n  o["groupId"] = groupId\n  return
o}\n\n/**\n * Exposes the JavaScript
[MediaStreamTrackEvent](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrackEvent) to Kotlin\n
*/\npublic external open class MediaStreamTrackEvent(type: String, eventInitDict: MediaStreamTrackEventInit) :
Event {\n  open val track: MediaStreamTrack\n\n  companion object {\n    val NONE: Short\n    val
CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface MediaStreamTrackEventInit : EventInit {\n  var track:
MediaStreamTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MediaStreamTrackEventInit(track:
MediaStreamTrack?, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
MediaStreamTrackEventInit {\n  val o = js("{}")\n  o["track"] = track\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o}\n\npublic external open class
OverconstrainedErrorEvent(type: String, eventInitDict: OverconstrainedErrorEventInit) : Event {\n
  open val error: dynamic\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE:
Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
OverconstrainedErrorEventInit : EventInit {\n  var error: dynamic /* = null */\n  get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun OverconstrainedErrorEventInit(error:
dynamic = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
OverconstrainedErrorEventInit {\n  val o = js("{}")\n  o["error"] = error\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o}\n\n/**\n * Exposes the JavaScript
[MediaDevices](https://developer.mozilla.org/en/docs/Web/API/MediaDevices) to Kotlin\n
*/\npublic external
abstract class MediaDevices : EventTarget
{\n  open var ondevicechange: ((Event) -> dynamic)?\n  fun enumerateDevices():
Promise<Array<MediaDeviceInfo>>\n  fun getSupportedConstraints(): MediaTrackSupportedConstraints\n  fun
getUserMedia(constraints: MediaStreamConstraints = definedExternally): Promise<MediaStream>\n}\n\n/**\n *
Exposes the JavaScript [MediaDeviceInfo](https://developer.mozilla.org/en/docs/Web/API/MediaDeviceInfo) to
Kotlin\n
*/\npublic external abstract class MediaDeviceInfo {\n  open val deviceId: String\n  open val kind:
MediaDeviceKind\n  open val label: String\n  open val groupId: String\n  fun toJSON(): dynamic\n}\n\npublic
external abstract class InputDeviceInfo : MediaDeviceInfo {\n  fun getCapabilities():
MediaTrackCapabilities\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaStreamConstraints) to Kotlin\n
*/\npublic external interface MediaStreamConstraints {\n  var video: dynamic /* = false */\n  get()
= definedExternally\n  set(value) = definedExternally\n  var audio: dynamic /* = false */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MediaStreamConstraints(video:
dynamic = false, audio: dynamic = false): MediaStreamConstraints {\n  val o = js("{}")\n  o["video"] =
video\n  o["audio"] = audio\n  return o}\n\npublic external interface ConstrainingPattern {\n  var
onoverconstrained: ((Event) -> dynamic)?\n  get() = definedExternally\n  set(value) = definedExternally\n
fun getCapabilities(): Capabilities\n  fun getConstraints(): Constraints\n  fun getSettings(): Settings\n  fun
applyConstraints(constraints: Constraints = definedExternally): Promise<Unit>\n}\n\n/**\n * Exposes the

```

JavaScript [DoubleRange](https://developer.mozilla.org/en/docs/Web/API/DoubleRange) to Kotlin\n */\npublic external interface

```
DoubleRange {\n    var max: Double?\n        get() = definedExternally\n        set(value) = definedExternally\n    var min: Double?\n        get() = definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleRange(max: Double? = undefined, min: Double? = undefined): DoubleRange {\n    val o = js(\"({})\")\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return o\n}\n\npublic external interface ConstrainDoubleRange : DoubleRange {\n    var exact: Double?\n        get() = definedExternally\n        set(value) = definedExternally\n    var ideal: Double?\n        get() = definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainDoubleRange(exact: Double? = undefined, ideal: Double? = undefined, max: Double? = undefined, min: Double? = undefined): ConstrainDoubleRange
```

```
{\n    val o = js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return o\n}\n\npublic external interface ULongRange {\n    var max: Int?\n        get() = definedExternally\n        set(value) = definedExternally\n    var min: Int?\n        get() = definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange(max: Int? = undefined, min: Int? = undefined): ULongRange {\n    val o = js(\"({})\")\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return o\n}\n\npublic external interface ConstrainULongRange : ULongRange {\n    var exact: Int?\n        get() = definedExternally\n        set(value) = definedExternally\n    var ideal: Int?\n        get() = definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun ConstrainULongRange(exact: Int? = undefined, ideal: Int? = undefined, max: Int? = undefined, min: Int? = undefined): ConstrainULongRange {\n    val o = js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return o\n}\n\n/**\n * Exposes the JavaScript
```

[ConstrainBooleanParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainBooleanParameters) to Kotlin\n */\npublic external interface ConstrainBooleanParameters {\n var exact: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var ideal: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainBooleanParameters(exact: Boolean? = undefined, ideal: Boolean? = undefined): ConstrainBooleanParameters {\n val o = js(\"({})\")\n o[\"exact\"] = exact\n o[\"ideal\"] = ideal\n return o\n}\n\n/**\n * Exposes the JavaScript

[ConstrainDOMStringParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainDOMStringParameters) to Kotlin\n */\npublic external interface ConstrainDOMStringParameters {\n var exact: dynamic\n get() = definedExternally\n set(value) = definedExternally\n var ideal: dynamic\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun

```
ConstrainDOMStringParameters(exact: dynamic = undefined, ideal: dynamic = undefined): ConstrainDOMStringParameters {\n    val o = js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    return o\n}\n\npublic external interface Capabilities\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Capabilities(): Capabilities {\n    val o = js(\"({})\")\n    return o\n}\n\npublic external interface Settings\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Settings(): Settings {\n    val o = js(\"({})\")\n    return o\n}\n\npublic external interface ConstraintSet\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstraintSet(): ConstraintSet {\n
```



```

[SourceBuffer](https://developer.mozilla.org/en/docs/Web/API/SourceBuffer) to Kotlin\n *\n\npublic external
abstract class SourceBuffer : EventTarget {\n  open var mode: AppendMode\n  open val updating: Boolean\n
open val buffered: TimeRanges\n  open var timestampOffset: Double\n  open val audioTracks: AudioTrackList\n
open val videoTracks: VideoTrackList\n  open val textTracks: TextTrackList\n  open var appendWindowStart:
Double\n
  open var appendWindowEnd: Double\n  open var onupdatestart: ((Event) -> dynamic)?\n  open var onupdate:
((Event) -> dynamic)?\n  open var onupdateend: ((Event) -> dynamic)?\n  open var onerror: ((Event) ->
dynamic)?\n  open var onabort: ((Event) -> dynamic)?\n  fun appendBuffer(data: dynamic)\n  fun abort()\n  fun
remove(start: Double, end: Double)\n}\n\n**\n * Exposes the JavaScript
[SourceBufferList](https://developer.mozilla.org/en/docs/Web/API/SourceBufferList) to Kotlin\n *\n\npublic
external abstract class SourceBufferList : EventTarget {\n  open val length: Int\n  open var onaddsourcebuffer:
((Event) -> dynamic)?\n  open var onremovesourcebuffer: ((Event) ->
dynamic)?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SourceBufferList.get(index:
Int): SourceBuffer? = asDynamic()[index]\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface ReadyState {\n  companion object\n}\n\n\npublic inline val ReadyState.Companion.CLOSED:
ReadyState get() = \"closed\".asDynamic().unsafeCast<ReadyState>()\n\n\npublic inline val
ReadyState.Companion.OPEN: ReadyState get() = \"open\".asDynamic().unsafeCast<ReadyState>()\n\n\npublic
inline val ReadyState.Companion.ENDED: ReadyState get() =
\"ended\".asDynamic().unsafeCast<ReadyState>()\n\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface EndOfStreamError {\n  companion object\n}\n\n\npublic inline val
EndOfStreamError.Companion.NETWORK: EndOfStreamError get() =
\"network\".asDynamic().unsafeCast<EndOfStreamError>()\n\n\npublic inline val
EndOfStreamError.Companion.DECODE: EndOfStreamError get() =
\"decode\".asDynamic().unsafeCast<EndOfStreamError>()\n\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface AppendMode {\n  companion object\n}\n\n\npublic inline val
AppendMode.Companion.SEGMENTS: AppendMode get() =
\"segments\".asDynamic().unsafeCast<AppendMode>()\n\n\npublic inline val
AppendMode.Companion.SEQUENCE: AppendMode get() =
\"sequence\".asDynamic().unsafeCast<AppendMode>(),\"/>\n\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n\n@n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.pointerevents\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n\npublic external interface
PointerEventInit : MouseEventInit {\n  var pointerId: Int? /* = 0 */\n  get() = definedExternally\n
set(value) = definedExternally\n  var width: Double? /* = 1.0 */\n  get() = definedExternally\n
set(value) = definedExternally\n  var height: Double? /* = 1.0 */\n  get() = definedExternally\n
set(value) = definedExternally\n  var pressure: Float? /* = 0f */\n  get() = definedExternally\n
set(value) =
definedExternally\n  var tangentialPressure: Float? /* = 0f */\n  get() = definedExternally\n
set(value) =
definedExternally\n  var tiltX: Int? /* = 0 */\n  get() = definedExternally\n
set(value) = definedExternally\n
var tiltY: Int? /* = 0 */\n  get() = definedExternally\n
set(value) = definedExternally\n  var twist: Int? /* =
0 */\n  get() = definedExternally\n
set(value) = definedExternally\n  var pointerType: String? /* = \"\" */\n
get() = definedExternally\n
set(value) = definedExternally\n  var isPrimary: Boolean? /* = false */\n
get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic

```

```

inline fun PointerEventInit(pointerId: Int? = 0, width: Double? = 1.0, height: Double? = 1.0, pressure: Float? = 0f,
tangentialPressure: Float? = 0f, tiltX: Int? = 0, tiltY: Int? = 0, twist: Int? = 0, pointerType: String? = "", isPrimary:
Boolean? = false, screenX: Int? = 0, screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0,
buttons: Short? = 0, relatedTarget: EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false,
modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean?

```

```

= false, cancelable: Boolean? = false, composed: Boolean? = false): PointerEventInit {\n  val o = js("{}")\n
o["pointerId"] = pointerId\n  o["width"] = width\n  o["height"] = height\n  o["pressure"] = pressure\n
o["tangentialPressure"] = tangentialPressure\n  o["tiltX"] = tiltX\n  o["tiltY"] = tiltY\n  o["twist"] = twist\n
o["pointerType"] = pointerType\n  o["isPrimary"] = isPrimary\n  o["screenX"] = screenX\n  o["screenY"]
= screenY\n  o["clientX"] = clientX\n  o["clientY"] = clientY\n  o["button"] = button\n  o["buttons"] =
buttons\n  o["relatedTarget"] = relatedTarget\n  o["region"] = region\n  o["ctrlKey"] = ctrlKey\n
o["shiftKey"] = shiftKey\n  o["altKey"] = altKey\n  o["metaKey"] = metaKey\n  o["modifierAltGraph"] =
modifierAltGraph\n  o["modifierCapsLock"] = modifierCapsLock\n  o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n  o["modifierHyper"]
= modifierHyper\n  o["modifierNumLock"] = modifierNumLock\n  o["modifierScrollLock"] =
modifierScrollLock\n  o["modifierSuper"] = modifierSuper\n  o["modifierSymbol"] = modifierSymbol\n
o["modifierSymbolLock"] = modifierSymbolLock\n  o["view"] = view\n  o["detail"] = detail\n
o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return
o\n}\n\n/**\n * Exposes the JavaScript

```

```

[PointerEvent](https://developer.mozilla.org/en/docs/Web/API/PointerEvent) to Kotlin\n\npublic external open
class PointerEvent(type: String, eventInitDict: PointerEventInit = definedExternally) : MouseEvent {\n  open val
pointerId: Int\n  open val width: Double\n  open val height: Double\n  open val pressure: Float\n  open val
tangentialPressure: Float\n  open val tiltX: Int\n  open val tiltY: Int\n  open val twist: Int\n  open val
pointerType: String\n  open val isPrimary: Boolean\n\n  companion object {\n

```

```

val NONE: Short\n  val CAPTURING_PHASE: Short\n  val AT_TARGET: Short\n  val
BUBBLING_PHASE: Short\n  }\n}"/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.svg\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.css.*\n\n/**\n * Exposes the JavaScript

```

```

[SVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGElement) to Kotlin\n\npublic external
abstract class SVGElement : Element, ElementCSSInlineStyle, GlobalEventHandlers, SVGElementInstance {\n
open val dataset: DOMStringMap\n  open val ownerSVGElement: SVGSVGElement?\n  open val
viewportElement: SVGElement?\n  open var tabIndex: Int\n  fun focus()\n  fun blur()\n\n

```

```

companion object {\n  val ELEMENT_NODE: Short\n  val ATTRIBUTE_NODE: Short\n  val
TEXT_NODE: Short\n  val CDATA_SECTION_NODE: Short\n  val ENTITY_REFERENCE_NODE:
Short\n  val ENTITY_NODE: Short\n  val PROCESSING_INSTRUCTION_NODE: Short\n  val
COMMENT_NODE: Short\n  val DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val

```

```

DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n  val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n  val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external interface
SVGBoundingBoxOptions {\n  var fill: Boolean? /* = true */\n  get() = definedExternally\n  set(value) =

```

```

definedExternally\n    var stroke: Boolean? /* = false */\n        get()
= definedExternally\n        set(value) = definedExternally\n    var markers: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var clipped: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun SVGBoundingBoxOptions(fill:
Boolean? = true, stroke: Boolean? = false, markers: Boolean? = false, clipped: Boolean? = false):
SVGBoundingBoxOptions {\n    val o = js(\"({})\")\n    o[\"fill\"] = fill\n    o[\"stroke\"] = stroke\n    o[\"markers\"]
= markers\n    o[\"clipped\"] = clipped\n    return o\n}\n\n/**\n * Exposes the JavaScript
[SVGGraphicsElement](https://developer.mozilla.org/en/docs/Web/API/SVGGraphicsElement) to Kotlin\n
*/\npublic external abstract class SVGGraphicsElement : SVGElement, SVGTests {\n    open val transform:
SVGAnimatedTransformList\n    fun getBBox(options:
SVGBoundingBoxOptions = definedExternally): DOMRect\n    fun getCTM(): DOMMatrix?\n    fun
getScreenCTM(): DOMMatrix?\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGGeometryElement](https://developer.mozilla.org/en/docs/Web/API/SVGGeometryElement)
to Kotlin\n */\npublic external abstract class SVGGeometryElement : SVGGraphicsElement {\n    open val
pathLength: SVGAnimatedNumber\n    fun isPointInFill(point: DOMPoint): Boolean\n    fun isPointInStroke(point:
DOMPoint): Boolean\n    fun getTotalLength(): Float\n    fun getPointAtLength(distance: Float): DOMPoint\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGNumber](https://developer.mozilla.org/en/docs/Web/API/SVGNumber) to Kotlin\n */\npublic external
abstract class SVGNumber {\n    open var value: Float\n}\n\n/**\n * Exposes the JavaScript
[SVGLength](https://developer.mozilla.org/en/docs/Web/API/SVGLength) to Kotlin\n */\npublic external
abstract class SVGLength {\n    open val unitType: Short\n    open var value: Float\n    open var valueInSpecifiedUnits:
Float\n    open var valueAsString: String\n    fun newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits:
Float)\n    fun convertToSpecifiedUnits(unitType: Short)\n\n    companion object {\n        val
SVG_LENGTHTYPE_UNKNOWN: Short\n        val SVG_LENGTHTYPE_NUMBER: Short\n        val
SVG_LENGTHTYPE_PERCENTAGE: Short\n        val SVG_LENGTHTYPE_EMS: Short\n        val
SVG_LENGTHTYPE_EXS: Short\n        val SVG_LENGTHTYPE_PX:
Short\n        val SVG_LENGTHTYPE_CM: Short\n        val SVG_LENGTHTYPE_MM: Short\n        val
SVG_LENGTHTYPE_IN: Short\n        val SVG_LENGTHTYPE_PT: Short\n        val SVG_LENGTHTYPE_PC:
Short\n    }\n}\n}\n\n/**\n * Exposes the JavaScript
[SVGAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAngle) to Kotlin\n */\npublic external abstract

```

```

class SVGAngle {\n  open val unitType: Short\n  open var value: Float\n  open var valueInSpecifiedUnits:
Float\n  open var valueAsString: String\n  fun newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits:
Float)\n  fun convertToSpecifiedUnits(unitType: Short)\n\n  companion object {\n    val
SVG_ANGLETYPE_UNKNOWN: Short\n    val SVG_ANGLETYPE_UNSPECIFIED: Short\n    val
SVG_ANGLETYPE_DEG: Short\n    val SVG_ANGLETYPE_RAD: Short\n    val
SVG_ANGLETYPE_GRAD: Short\n  }\n\n  public external abstract class SVGNameList {\n  open val length:
Int\n  open val numberOfItems: Int\n  fun clear()\n
  fun initialize(newItem: dynamic): dynamic\n  fun insertItemBefore(newItem: dynamic, index: Int): dynamic\n
  fun replaceItem(newItem: dynamic, index: Int): dynamic\n  fun removeItem(index: Int): dynamic\n  fun
appendItem(newItem: dynamic): dynamic\n  fun getItem(index: Int):
dynamic\n}\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline operator fun SVGNameList.get(index: Int):
dynamic = asDynamic()[index]\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline operator fun SVGNameList.set(index: Int,
newItem: dynamic) { asDynamic()[index] = newItem }\n\n  /**\n   * Exposes the JavaScript
[SVGNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGNumberList) to Kotlin\n   */\n  public external
abstract class SVGNumberList {\n  open val length: Int\n  open val numberOfItems: Int\n  fun clear()\n  fun
initialize(newItem: SVGNumber): SVGNumber\n  fun insertItemBefore(newItem:
SVGNumber, index: Int): SVGNumber\n  fun replaceItem(newItem: SVGNumber, index: Int): SVGNumber\n
  fun removeItem(index: Int): SVGNumber\n  fun appendItem(newItem: SVGNumber): SVGNumber\n  fun
getItem(index: Int): SVGNumber\n}\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline operator fun SVGNumberList.get(index:
Int): SVGNumber? = asDynamic()[index]\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline operator fun SVGNumberList.set(index:
Int, newItem: SVGNumber) { asDynamic()[index] = newItem }\n\n  /**\n   * Exposes the JavaScript
[SVGLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGLengthList) to Kotlin\n   */\n  public external
abstract class SVGLengthList {\n  open val length: Int\n  open val numberOfItems: Int\n  fun clear()\n  fun
initialize(newItem: SVGLength): SVGLength\n  fun insertItemBefore(newItem: SVGLength, index: Int):
SVGLength\n
  fun replaceItem(newItem: SVGLength, index: Int): SVGLength\n  fun removeItem(index: Int): SVGLength\n
  fun appendItem(newItem: SVGLength): SVGLength\n  fun getItem(index: Int):
SVGLength\n}\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline operator fun SVGLengthList.get(index:
Int): SVGLength? = asDynamic()[index]\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline operator fun SVGLengthList.set(index: Int,
newItem: SVGLength) { asDynamic()[index] = newItem }\n\n  /**\n   * Exposes the JavaScript
[SVGAnimatedBoolean](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedBoolean) to Kotlin\n   */\n  public external
abstract class SVGAnimatedBoolean {\n  open var baseVal: Boolean\n  open val animVal:
Boolean\n}\n\n  /**\n   * Exposes the JavaScript
[SVGAnimatedEnumeration](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedEnumeration) to
Kotlin\n   */\n  public external abstract
class SVGAnimatedEnumeration {\n  open var baseVal: Short\n  open val animVal: Short\n}\n\n  /**\n   * Exposes
the JavaScript [SVGAnimatedInteger](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedInteger) to
Kotlin\n   */\n  public external abstract class SVGAnimatedInteger {\n  open var baseVal: Int\n  open val animVal:
Int\n}\n\n  /**\n   * Exposes the JavaScript
[SVGAnimatedNumber](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumber) to Kotlin\n   */\n  public external
abstract class SVGAnimatedNumber {\n  open var baseVal: Float\n  open val animVal:
Float\n}\n\n  /**\n   * Exposes the JavaScript

```

[SVGAnimatedLength](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLength) to Kotlin\n
`*\npublic external abstract class SVGAnimatedLength {\n open val baseVal: SVGLength\n open val animVal: SVGLength\n}\n\n**\n * Exposes the JavaScript`

[SVGAnimatedAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedAngle) to Kotlin\n
`*\npublic external abstract class SVGAnimatedAngle {\n open val baseVal: SVGAngle\n open val animVal: SVGAngle\n}\n\n**\n * Exposes the JavaScript`

[SVGAnimatedString](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedString) to Kotlin\n
`*\npublic external abstract class SVGAnimatedString {\n open var baseVal: String\n open val animVal: String\n}\n\n**\n * Exposes the JavaScript`

[SVGAnimatedRect](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedRect) to Kotlin\n
`*\npublic external abstract class SVGAnimatedRect {\n open val baseVal: DOMRect\n open val animVal: DOMRectReadOnly\n}\n\n**\n * Exposes the JavaScript`

[SVGAnimatedNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumberList) to Kotlin\n
`*\npublic external abstract class SVGAnimatedNumberList {\n open val baseVal: SVGNumberList\n open val animVal: SVGNumberList\n}\n\n**\n * Exposes the JavaScript`

[SVGAnimatedLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLengthList) to Kotlin\n
`*\npublic external abstract class SVGAnimatedLengthList {\n open val baseVal: SVGLengthList\n open val animVal: SVGLengthList\n}\n\n**\n * Exposes the JavaScript`

[SVGStringList](https://developer.mozilla.org/en/docs/Web/API/SVGStringList) to Kotlin\n
`*\npublic external abstract class SVGStringList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun initialize(newItem: String): String\n fun insertItemBefore(newItem: String, index: Int): String\n fun replaceItem(newItem: String, index: Int): String\n fun removeItem(index: Int): String\n fun appendItem(newItem: String): String\n fun getItem(index: Int): String\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGStringList.get(index: Int): String? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGStringList.set(index: Int, newItem: String) { asDynamic()[index] = newItem }\n\n**\n * Exposes the JavaScript`

[SVGUnitTypes](https://developer.mozilla.org/en/docs/Web/API/SVGUnitTypes) to Kotlin\n
`*\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external interface SVGUnitTypes {\n companion object {\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n }\n}\n\n**\n * Exposes the JavaScript`

[SVGTTests](https://developer.mozilla.org/en/docs/Web/API/SVGTTests) to Kotlin\n
`*\npublic external interface SVGTTests {\n val requiredExtensions: SVGStringList\n val systemLanguage: SVGStringList\n}\n\npublic external interface SVGFitToViewBox {\n val viewBox: SVGAnimatedRect\n val preserveAspectRatio: SVGAnimatedPreserveAspectRatio\n}\n\n**\n * Exposes the JavaScript`

[SVGZoomAndPan](https://developer.mozilla.org/en/docs/Web/API/SVGZoomAndPan) to Kotlin\n
`*\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external interface SVGZoomAndPan {\n var zoomAndPan: Short\n\n companion object {\n val SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val SVG_ZOOMANDPAN_MAGNIFY: Short\n }\n}\n\n**\n * Exposes the JavaScript`

[SVGURIReference](https://developer.mozilla.org/en/docs/Web/API/SVGURIReference) to Kotlin\n
`*\npublic external interface SVGURIReference {\n val href: SVGAnimatedString\n}\n\n**\n * Exposes the JavaScript`

[SVGSVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGSVGElement) to Kotlin\n
`*\npublic external abstract class SVGSVGElement : SVGGraphicsElement, SVGFitToViewBox, SVGZoomAndPan, WindowEventHandlers {\n open val x: SVGAnimatedLength\n open val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n open var currentScale: Float\n open`


```

    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[SVGDescElement](https://developer.mozilla.org/en/docs/Web/API/SVGDescElement) to Kotlin \n * \n public
external abstract class SVGDescElement : SVGElement { \n    companion object { \n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n
        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        } \n} \n \n /** \n * Exposes the JavaScript
[SVGMetadataElement](https://developer.mozilla.org/en/docs/Web/API/SVGMetadataElement) to Kotlin \n
* \n public external abstract class SVGMetadataElement : SVGElement { \n    companion object { \n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        } \n} \n \n /** \n * Exposes the JavaScript
[SVGTitleElement](https://developer.mozilla.org/en/docs/Web/API/SVGTitleElement) to Kotlin \n * \n public
external abstract class SVGTitleElement : SVGElement { \n    companion object { \n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE:
Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val
DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        } \n} \n \n /** \n * Exposes
the JavaScript [SVGSymbolElement](https://developer.mozilla.org/en/docs/Web/API/SVGSymbolElement) to
Kotlin \n * \n public external abstract class SVGSymbolElement : SVGGraphicsElement, SVGFitToViewBox { \n
    companion object { \n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n       
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE:
Short\n        val COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val
DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n

```

```

val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGUseElement](https://developer.mozilla.org/en/docs/Web/API/SVGUseElement) to Kotlin\n
*\n\npublic external abstract class SVGUseElement : SVGGraphicsElement, SVGURIReference {\n    open val x:
SVGAnimatedLength\n    open val y: SVGAnimatedLength\n    open val width: SVGAnimatedLength\n    open val
height: SVGAnimatedLength\n    open val instanceRoot: SVGElement?\n    open val animatedInstanceRoot:
SVGElement?\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external open class
SVGUseElementShadowRoot : ShadowRoot {\n    companion object {\n        val ELEMENT_NODE: Short\n
        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external interface
SVGElementInstance {\n    val correspondingElement: SVGElement?\n    get() = definedExternally\n    val
correspondingUseElement: SVGUseElement?\n    get() = definedExternally\n}\n\n\npublic external open class
ShadowAnimation(source: dynamic, newTarget: dynamic) {\n    open val sourceAnimation: dynamic\n}\n\n\n/**\n *
Exposes the JavaScript [SVGSwitchElement](https://developer.mozilla.org/en/docs/Web/API/SVGSwitchElement)
to Kotlin\n
*\n\npublic external abstract class SVGSwitchElement : SVGGraphicsElement {\n    companion object
{\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n
        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external interface
GetSVGDocument {\n    fun getSVGDocument():
Document\n}\n\n\n/**\n * Exposes the JavaScript
[SVGStyleElement](https://developer.mozilla.org/en/docs/Web/API/SVGStyleElement) to Kotlin\n
*\n\npublic external abstract class SVGStyleElement : SVGElement, LinkStyle {\n    open var type: String\n    open var media:
String\n    open var title: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val

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external abstract class SVGPathElement : SVGGeometryElement {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

Exposes the JavaScript [SVGRectElement](https://developer.mozilla.org/en/docs/Web/API/SVGRectElement) to Kotlin

public external abstract class SVGRectElement : SVGGeometryElement {
    open val x: SVGAnimatedLength
    open val y: SVGAnimatedLength
    open val width: SVGAnimatedLength
    open val height: SVGAnimatedLength
    open val rx: SVGAnimatedLength
    open val ry: SVGAnimatedLength

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

Exposes the JavaScript [SVGCircleElement](https://developer.mozilla.org/en/docs/Web/API/SVGCircleElement) to Kotlin

public external abstract class SVGCircleElement : SVGGeometryElement {
    open val cx: SVGAnimatedLength
    open val cy: SVGAnimatedLength
    open val r: SVGAnimatedLength

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

Exposes the JavaScript [SVGEllipseElement](https://developer.mozilla.org/en/docs/Web/API/SVGEllipseElement) to Kotlin

public external abstract class SVGEllipseElement : SVGGeometryElement {
    open val cx: SVGAnimatedLength
    open val cy: SVGAnimatedLength
    open val rx: SVGAnimatedLength
    open val ry: SVGAnimatedLength

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
    }
}

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val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [SVGLineElement](https://developer.mozilla.org/en/docs/Web/API/SVGLineElement) to Kotlin\n
*/\npublic external abstract class SVGLineElement : SVGGeometryElement {\n    open val x1:
SVGAnimatedLength\n    open val y1: SVGAnimatedLength\n    open val x2: SVGAnimatedLength\n    open val
y2: SVGAnimatedLength\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING:
Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val
DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGMeshElement](https://developer.mozilla.org/en/docs/Web/API/SVGMeshElement) to Kotlin\n
*/\npublic external abstract class SVGMeshElement : SVGGeometryElement, SVGURIReference {\n    companion object {\n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING:
Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val
DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedPoints](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPoints) to Kotlin\n
*/\npublic external interface SVGAnimatedPoints {\n    val points: SVGPointList\n    val animatedPoints:
SVGPointList\n}\n\npublic external abstract class SVGPointList {\n    open val length: Int\n    open val
numberOfItems: Int\n    fun clear()\n    fun initialize(newItem: DOMPoint): DOMPoint\n    fun
insertItemBefore(newItem: DOMPoint, index: Int): DOMPoint\n    fun replaceItem(newItem: DOMPoint, index:
Int): DOMPoint\n    fun removeItem(index: Int): DOMPoint\n    fun appendItem(newItem: DOMPoint):
DOMPoint\n    fun getItem(index: Int): DOMPoint\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGPointList.get(index:
Int): DOMPoint? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGPointList.set(index: Int,
newItem: DOMPoint) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGPolylineElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolylineElement) to Kotlin\n
*/\npublic external abstract class SVGPolylineElement : SVGGeometryElement, SVGAnimatedPoints {\n
    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n

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    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }|n}|n/n/**\n * Exposes the JavaScript
[SVGPolygonElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolygonElement) to Kotlin\n
*/\npublic external abstract class SVGPolygonElement : SVGGeometryElement, SVGAnimatedPoints {\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED:
Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }|n}|n/n/**\n * Exposes the JavaScript
[SVGTextContentElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextContentElement) to Kotlin\n
*/\npublic external abstract class SVGTextContentElement : SVGGraphicsElement {\n    open val textLength:
SVGAnimatedLength\n    open val lengthAdjust: SVGAnimatedEnumeration\n    fun getNumberOfChars(): Int\n
fun getComputedTextLength(): Float\n    fun getSubStringLength(charnum: Int, nchars: Int): Float\n    fun
getStartPositionOfChar(charnum: Int): DOMPoint\n    fun getEndPositionOfChar(charnum: Int): DOMPoint\n    fun
getExtentOfChar(charnum: Int): DOMRect\n    fun getRotationOfChar(charnum: Int): Float\n    fun
getCharNumAtPosition(point: DOMPoint): Int\n    fun selectSubString(charnum:
Int, nchars: Int)\n\n    companion object {\n    val LENGTHADJUST_UNKNOWN: Short\n    val
LENGTHADJUST_SPACING: Short\n    val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }|n}|n/n/**\n * Exposes the JavaScript
[SVGTextPositioningElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPositioningElement)
to Kotlin\n
*/\npublic external abstract class SVGTextPositioningElement : SVGTextContentElement {\n    open
val x: SVGAnimatedLengthList\n    open val y: SVGAnimatedLengthList\n    open val dx:
SVGAnimatedLengthList\n    open val dy: SVGAnimatedLengthList\n    open val rotate:
SVGAnimatedNumberList\n\n    companion object {\n    val LENGTHADJUST_UNKNOWN: Short\n    val
LENGTHADJUST_SPACING: Short\n    val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val

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DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGTextElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextElement) to Kotlin\n */\npublic external abstract class SVGTextElement : SVGTextPositioningElement {\n companion object {\n val LENGTHADJUST_UNKNOWN: Short\n val LENGTHADJUST_SPACING: Short\n val LENGTHADJUST_SPACINGANDGLYPHS: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGTSpanElement](https://developer.mozilla.org/en/docs/Web/API/SVGTSpanElement) to Kotlin\n */\npublic external abstract class SVGTSpanElement : SVGTextPositioningElement {\n companion object {\n val LENGTHADJUST_UNKNOWN: Short\n val LENGTHADJUST_SPACING: Short\n val LENGTHADJUST_SPACINGANDGLYPHS: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGTextPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPathElement) to Kotlin\n */\npublic external abstract class SVGTextPathElement : SVGTextContentElement, SVGURIReference {\n open val startOffset: SVGAnimatedLength\n open val method: SVGAnimatedEnumeration\n open val spacing: SVGAnimatedEnumeration\n\n companion object {\n val TEXTPATH_METHODTYPE_UNKNOWN: Short\n val TEXTPATH_METHODTYPE_ALIGN: Short\n val TEXTPATH_METHODTYPE_STRETCH: Short\n val TEXTPATH_SPACINGTYPE_UNKNOWN: Short\n val TEXTPATH_SPACINGTYPE_AUTO: Short\n val TEXTPATH_SPACINGTYPE_EXACT: Short\n val LENGTHADJUST_UNKNOWN: Short\n val LENGTHADJUST_SPACING: Short\n val LENGTHADJUST_SPACINGANDGLYPHS: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n }\n}\n\n/**\n * Exposes the JavaScript [SVGImageElement](https://developer.mozilla.org/en/docs/Web/API/SVGImageElement) to Kotlin\n */\npublic external abstract class SVGImageElement : SVGGraphicsElement, SVGURIReference,

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HTMLorSVGImageElement {\n  open val x: SVGAnimatedLength\n  open val y: SVGAnimatedLength\n  open
val width: SVGAnimatedLength\n  open val height: SVGAnimatedLength\n  open val preserveAspectRatio:
SVGAnimatedPreserveAspectRatio\n  open var crossOrigin: String?\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGForeignObjectElement](https://developer.mozilla.org/en/docs/Web/API/SVGForeignObjectElement) to
Kotlin\n */\npublic external abstract class SVGForeignObjectElement : SVGGraphicsElement {\n  open val x:
SVGAnimatedLength\n  open val y: SVGAnimatedLength\n  open val width: SVGAnimatedLength\n  open val
height: SVGAnimatedLength\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n
    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external abstract class
SVGMarkerElement : SVGElement, SVGFitToViewBox {\n  open val refX: SVGAnimatedLength\n  open val
refY: SVGAnimatedLength\n  open val markerUnits: SVGAnimatedEnumeration\n  open val markerWidth:
SVGAnimatedLength\n  open val markerHeight: SVGAnimatedLength\n  open val orientType:
SVGAnimatedEnumeration\n  open val orientAngle: SVGAnimatedAngle\n  open var orient: String\n  fun
setOrientToAuto()\n
  fun setOrientToAngle(angle: SVGAngle)\n\n  companion object {\n    val
SVG_MARKERUNITS_UNKNOWN: Short\n    val SVG_MARKERUNITS_USERSPACEONUSE: Short\n
    val SVG_MARKERUNITS_STROKEWIDTH: Short\n    val SVG_MARKER_ORIENT_UNKNOWN: Short\n
    val SVG_MARKER_ORIENT_AUTO: Short\n    val SVG_MARKER_ORIENT_ANGLE: Short\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes
the JavaScript [SVGSolidcolorElement](https://developer.mozilla.org/en/docs/Web/API/SVGSolidcolorElement) to
Kotlin\n */\npublic external abstract class SVGSolidcolorElement : SVGElement {\n  companion object {\n
    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val

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DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n } \n \n /** \n * Exposes
the JavaScript [SVGGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGGradientElement) to
Kotlin \n * \n public external abstract class SVGGradientElement : SVGElement, SVGURIReference,
SVGUnitTypes { \n open val gradientUnits: SVGAnimatedEnumeration \n open val gradientTransform:
SVGAnimatedTransformList \n open val spreadMethod: SVGAnimatedEnumeration \n \n companion object { \n
val SVG_SPREADMETHOD_UNKNOWN: Short\n val SVG_SPREADMETHOD_PAD: Short\n val
SVG_SPREADMETHOD_REFLECT: Short\n val SVG_SPREADMETHOD_REPEAT: Short\n val
SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n } \n \n /** \n * Exposes the JavaScript
[SVGLinearGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGLinearGradientElement) to
Kotlin \n * \n public external abstract class SVGLinearGradientElement : SVGGradientElement { \n open val x1:
SVGAnimatedLength \n open val y1: SVGAnimatedLength \n open val x2: SVGAnimatedLength \n open val
y2: SVGAnimatedLength \n \n companion object { \n val
SVG_SPREADMETHOD_UNKNOWN: Short\n val SVG_SPREADMETHOD_PAD: Short\n val
SVG_SPREADMETHOD_REFLECT: Short\n val SVG_SPREADMETHOD_REPEAT: Short\n val
SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n } \n \n /** \n * Exposes the
JavaScript
[SVGRadialGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGRadialGradientElement) to
Kotlin \n * \n public external abstract class SVGRadialGradientElement : SVGGradientElement { \n open val cx:
SVGAnimatedLength \n open val cy: SVGAnimatedLength \n open val r: SVGAnimatedLength \n open val fx:
SVGAnimatedLength \n open val fy: SVGAnimatedLength \n open val fr: SVGAnimatedLength \n \n companion
object { \n val SVG_SPREADMETHOD_UNKNOWN: Short\n val SVG_SPREADMETHOD_PAD:
Short\n val SVG_SPREADMETHOD_REFLECT: Short\n val SVG_SPREADMETHOD_REPEAT:
Short\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE:

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Short\n    val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n    val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGMeshGradientElement : SVGGradientElement {\n    companion object {\n    val
SVG_SPREADMETHOD_UNKNOWN: Short\n    val SVG_SPREADMETHOD_PAD: Short\n    val
SVG_SPREADMETHOD_REFLECT: Short\n    val SVG_SPREADMETHOD_REPEAT: Short\n    val
SVG_UNIT_TYPE_UNKNOWN: Short\n    val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n    val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGMeshrowElement : SVGElement {\n    companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE:
Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGMeshpatchElement : SVGElement {\n    companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n
val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE:
Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGStopElement](https://developer.mozilla.org/en/docs/Web/API/SVGStopElement) to Kotlin\n *\n\npublic
external abstract class SVGStopElement : SVGElement {\n    open val offset: SVGAnimatedNumber\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:

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Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE:
Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val
DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val
NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGPatternElement](https://developer.mozilla.org/en/docs/Web/API/SVGPatternElement) to
Kotlin\n */\npublic external abstract class SVGPatternElement : SVGElement, SVGFitToViewBox,
SVGURIReference, SVGUnitTypes {\n    open val patternUnits: SVGAnimatedEnumeration\n    open val
patternContentUnits: SVGAnimatedEnumeration\n    open val patternTransform: SVGAnimatedTransformList\n
open val x: SVGAnimatedLength\n    open val y: SVGAnimatedLength\n    open
val width: SVGAnimatedLength\n    open val height: SVGAnimatedLength\n\n    companion object {\n        val
SVG_UNIT_TYPE_UNKNOWN: Short\n        val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n        val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic
external abstract class SVGHatchElement : SVGElement {\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGHatchpathElement : SVGElement {\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGCursorElement](https://developer.mozilla.org/en/docs/Web/API/SVGCursorElement) to Kotlin\n */\npublic
external abstract class SVGCursorElement : SVGElement, SVGURIReference {\n    open val x:
SVGAnimatedLength\n    open val y: SVGAnimatedLength\n\n    companion

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object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
}

DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short }

/** Exposes the JavaScript [SVGScriptElement](https://developer.mozilla.org/en/docs/Web/API/SVGScriptElement) to Kotlin
*/
public external abstract class SVGScriptElement : SVGElement, SVGURIReference, HTMLOrSVGScriptElement {
    open var type: String
    open var crossOrigin: String?

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
    }

    DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short }

/** Exposes the JavaScript [SVGAEElement](https://developer.mozilla.org/en/docs/Web/API/SVGAEElement) to Kotlin
*/
public external abstract class SVGAEElement : SVGGraphicsElement, SVGURIReference {
    open val target: SVGAnimatedString
    open val download: SVGAnimatedString
    open val rel: SVGAnimatedString
    open val relList: SVGAnimatedString
    open val hreflang: SVGAnimatedString
    open val type: SVGAnimatedString

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short }

    /** Exposes the JavaScript [SVGViewElement](https://developer.mozilla.org/en/docs/Web/API/SVGViewElement) to Kotlin
    */
    public external abstract class SVGViewElement : SVGElement, SVGFitToViewBox, SVGZoomAndPan {
        companion object {
            val SVG_ZOOMANDPAN_UNKNOWN: Short
            val SVG_ZOOMANDPAN_DISABLE: Short
            val SVG_ZOOMANDPAN_MAGNIFY: Short
        }

        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short }
    }

}

"/ * Copyright 2010-2021

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JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.files\n\nimport
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\nimport
org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript [Blob](https://developer.mozilla.org/en/docs/Web/API/Blob) to
Kotlin\n *\npublic external open class Blob(blobParts: Array<dynamic> = definedExternally, options:
BlobPropertyBag = definedExternally) : MediaPlayer, ImageBitmapSource {\n    open val size: Number\n    open
val type: String\n
    open val isClosed: Boolean\n    fun slice(start: Int = definedExternally, end: Int = definedExternally, contentType:
String = definedExternally): Blob\n    fun close()\n}\n\npublic external interface BlobPropertyBag {\n    var type:
String? /* = \"\" */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun BlobPropertyBag(type: String? = \"\"):
BlobPropertyBag {\n    val o = js(\"({})\")\n    o[\"type\"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[File](https://developer.mozilla.org/en/docs/Web/API/File) to Kotlin\n *\npublic external open class File(fileBits:
Array<dynamic>, fileName: String, options: FilePropertyBag = definedExternally) : Blob {\n    open val name:
String\n    open val lastModified: Int\n}\n\npublic external interface FilePropertyBag : BlobPropertyBag {\n    var
lastModified: Int?\n    get() = definedExternally\n
    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun FilePropertyBag(lastModified: Int? =
undefined, type: String? = \"\"): FilePropertyBag {\n    val o = js(\"({})\")\n    o[\"lastModified\"] = lastModified\n
o[\"type\"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[FileList](https://developer.mozilla.org/en/docs/Web/API/FileList) to Kotlin\n *\npublic external abstract class
FileList : ItemArrayLike<File> {\n    override fun item(index: Int):
File?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun FileList.get(index: Int): File?
= asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[FileReader](https://developer.mozilla.org/en/docs/Web/API/FileReader) to Kotlin\n *\npublic external open class
FileReader : EventTarget {\n    open val readyState: Short\n    open val result: dynamic\n    open val error:
dynamic\n    var onloadstart: ((ProgressEvent) -> dynamic)?\n    var onprogress: ((ProgressEvent) -> dynamic)?\n
var onload: ((Event) -> dynamic)?\n    var onabort: ((Event) -> dynamic)?\n    var onerror: ((Event) ->
dynamic)?\n    var onloadend: ((Event) -> dynamic)?\n    fun readAsArrayBuffer(blob: Blob)\n    fun readAsBinaryString(blob:
Blob)\n    fun readAsText(blob: Blob, label: String = definedExternally)\n    fun readAsDataURL(blob: Blob)\n
fun abort()\n\n    companion object {\n        val EMPTY: Short\n        val LOADING: Short\n        val DONE:
Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[FileReaderSync](https://developer.mozilla.org/en/docs/Web/API/FileReaderSync) to Kotlin\n *\npublic external
open class FileReaderSync {\n    fun readAsArrayBuffer(blob: Blob): ArrayBuffer\n    fun readAsBinaryString(blob:
Blob): String\n    fun readAsText(blob: Blob, label: String = definedExternally): String\n    fun
readAsDataURL(blob: Blob): String\n}\n\n/*\n * Copyright
2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS
AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage
org.w3c.notifications\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.events.*\nimport
org.w3c.workers.*\n\n/**\n * Exposes the JavaScript
[Notification](https://developer.mozilla.org/en/docs/Web/API/Notification) to Kotlin\n *\npublic external open
class Notification(title: String, options: NotificationOptions = definedExternally) : EventTarget {\n    var onclick:
((MouseEvent) -> dynamic)?\n    var onerror: ((Event) -> dynamic)?\n    open val title: String\n    open val dir:
NotificationDirection\n    open val lang: String\n    open val body: String\n    open val tag: String\n    open val

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image: String\n open val icon: String\n open val badge: String\n
open val sound: String\n open val vibrate: Array<out Int>\n open val timestamp: Number\n open val renotify:
Boolean\n open val silent: Boolean\n open val noscreen: Boolean\n open val requireInteraction: Boolean\n
open val sticky: Boolean\n open val data: Any?\n open val actions: Array<out NotificationAction>\n fun
close()\n\n companion object {\n val permission: NotificationPermission\n val maxActions: Int\n fun
requestPermission(deprecatedCallback: (NotificationPermission) -> Unit) = definedExternally\n
Promise<NotificationPermission>\n }\n\n\npublic external interface NotificationOptions {\n var dir:
NotificationDirection? /* = NotificationDirection.AUTO */\n get() = definedExternally\n set(value) =
definedExternally\n var lang: String? /* = "" */\n get() = definedExternally\n set(value) =
definedExternally\n var body: String? /* = "" */\n get() = definedExternally\n set(value)
= definedExternally\n var tag: String? /* = "" */\n get() = definedExternally\n set(value) =
definedExternally\n var image: String?\n get() = definedExternally\n set(value) = definedExternally\n
var icon: String?\n get() = definedExternally\n set(value) = definedExternally\n var badge: String?\n
get() = definedExternally\n set(value) = definedExternally\n var sound: String?\n get() =
definedExternally\n set(value) = definedExternally\n var vibrate: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n var timestamp: Number?\n get() = definedExternally\n set(value) =
definedExternally\n var renotify: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var silent: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var noscreen: Boolean? /* = false
*/\n get() = definedExternally\n set(value) = definedExternally\n var requireInteraction: Boolean? /* =
false */\n get() = definedExternally\n set(value) = definedExternally\n var sticky: Boolean? /* = false */\n
get() = definedExternally\n set(value) = definedExternally\n var data: Any? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var actions: Array<NotificationAction>? /* = arrayOf()
*/\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun NotificationOptions(dir:
NotificationDirection? = NotificationDirection.AUTO, lang: String? = \"\", body: String? = \"\", tag: String? = \"\",
image: String? = undefined, icon: String? = undefined, badge: String? = undefined, sound: String? = undefined,
vibrate: dynamic = undefined, timestamp: Number? = undefined, renotify:
Boolean? = false, silent: Boolean? = false, noscreen: Boolean? = false, requireInteraction: Boolean? = false, sticky:
Boolean? = false, data: Any? = null, actions: Array<NotificationAction>? = arrayOf()): NotificationOptions {\n
val o = js(\"({})\")\n o[\"dir\"] = dir\n o[\"lang\"] = lang\n o[\"body\"] = body\n o[\"tag\"] = tag\n
o[\"image\"] = image\n o[\"icon\"] = icon\n o[\"badge\"] = badge\n o[\"sound\"] = sound\n o[\"vibrate\"] =
vibrate\n o[\"timestamp\"] = timestamp\n o[\"renotify\"] = renotify\n o[\"silent\"] = silent\n o[\"noscreen\"] =
noscreen\n o[\"requireInteraction\"] = requireInteraction\n o[\"sticky\"] = sticky\n o[\"data\"] = data\n
o[\"actions\"] = actions\n return o\n}\n\n\npublic external interface NotificationAction {\n var action: String?\n
var title: String?\n var icon: String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun NotificationAction(action: String?,
title: String?, icon: String? = undefined): NotificationAction {\n val o = js(\"({})\")\n o[\"action\"] = action\n
o[\"title\"] = title\n o[\"icon\"] = icon\n return o\n}\n\n\npublic external interface GetNotificationOptions {\n var
tag: String? /* = "" */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun GetNotificationOptions(tag: String? =
\" \"): GetNotificationOptions {\n val o = js(\"({})\")\n o[\"tag\"] = tag\n return o\n}\n\n\n**\n * Exposes the
JavaScript [NotificationEvent](https://developer.mozilla.org/en/docs/Web/API/NotificationEvent) to Kotlin\n
*\n\npublic external open class NotificationEvent(type: String, eventInitDict: NotificationEventInit) :
ExtendableEvent {\n open val notification: Notification\n

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open val action: String\n\n companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n } }\n\npublic external interface
NotificationEventInit : ExtendableEventInit {\n    var notification: Notification?\n    var action: String? /* = \"\" */\n    get() = definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun NotificationEventInit(notification:
Notification?, action: String? = \"\", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): NotificationEventInit {\n    val o = js(\"{\}\")\n    o[\"notification\"] = notification\n    o[\"action\"] =
action\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return
o\n}\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface NotificationPermission {\n    companion object\n}\n\npublic inline val
NotificationPermission.Companion.DEFAULT: NotificationPermission get() =
\"default\".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.DENIED: NotificationPermission get() =
\"denied\".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.GRANTED: NotificationPermission get() =
\"granted\".asDynamic().unsafeCast<NotificationPermission>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface NotificationDirection {\n    companion object\n}\n\npublic inline val
NotificationDirection.Companion.AUTO: NotificationDirection get() =
\"auto\".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.LTR: NotificationDirection get()
= \"ltr\".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.RTL: NotificationDirection get() =
\"rtl\".asDynamic().unsafeCast<NotificationDirection>()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.workers\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\nimport org.w3c.fetch.*\nimport
org.w3c.notifications.*\n\n/**\n * Exposes the JavaScript
[ServiceWorker](https://developer.mozilla.org/en/docs/Web/API/ServiceWorker) to Kotlin\n *\npublic external
abstract class ServiceWorker : EventTarget, AbstractWorker, UnionMessagePortOrServiceWorker,
UnionClientOrMessagePortOrServiceWorker {\n    open val scriptURL:
String\n    open val state: ServiceWorkerState\n    open var onstatechange: ((Event) -> dynamic)?\n    fun
postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerRegistration](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerRegistration) to
Kotlin\n *\npublic external abstract class ServiceWorkerRegistration : EventTarget {\n    open val installing:
ServiceWorker?\n    open val waiting: ServiceWorker?\n    open val active: ServiceWorker?\n    open val scope:
String\n    open var onupdatefound: ((Event) -> dynamic)?\n    open val APISpace: dynamic\n    fun update():
Promise<Unit>\n    fun unregister(): Promise<Boolean>\n    fun showNotification(title: String, options:
NotificationOptions = definedExternally): Promise<Unit>\n    fun getNotifications(filter: GetNotificationOptions =
definedExternally): Promise<Array<Notification>>\n    fun methodName(): Promise<dynamic>\n}\n\n/**\n *
Exposes the JavaScript
[ServiceWorkerContainer](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerContainer) to Kotlin\n
*\npublic external abstract class ServiceWorkerContainer : EventTarget {\n    open val controller:
ServiceWorker?\n    open val ready: Promise<ServiceWorkerRegistration>\n    open var oncontrollerchange:
((Event) -> dynamic)?\n    open var onmessage: ((MessageEvent) -> dynamic)?\n    fun register(scriptURL: String,
options: RegistrationOptions = definedExternally): Promise<ServiceWorkerRegistration>\n    fun

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getRegistration(clientURL: String = definedExternally): Promise<Any?>\n fun getRegistrations():
Promise<Array<ServiceWorkerRegistration>>\n fun startMessages()\n\npublic external interface
RegistrationOptions {\n var scope: String?\n get() = definedExternally\n set(value) = definedExternally\n
var type: WorkerType? /* = WorkerType.CLASSIC */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun RegistrationOptions(scope: String? =
undefined, type: WorkerType? = WorkerType.CLASSIC): RegistrationOptions {\n val o = js(\"({})\")\n
o[\"scope\"] = scope\n o[\"type\"] = type\n return o\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerMessageEvent) to
Kotlin\n */\npublic external open class ServiceWorkerMessageEvent(type: String, eventInitDict:
ServiceWorkerMessageEventInit = definedExternally) : Event {\n open val data: Any?\n open val origin:
String\n open val lastEventId: String\n open val source: UnionMessagePortOrServiceWorker?\n open val
ports: Array<out MessagePort>?\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface ServiceWorkerMessageEventInit : EventInit {\n
var data: Any?\n get() = definedExternally\n set(value) = definedExternally\n var origin: String?\n
get() = definedExternally\n set(value) = definedExternally\n var lastEventId: String?\n get() =
definedExternally\n set(value) = definedExternally\n var source: UnionMessagePortOrServiceWorker?\n
get() = definedExternally\n set(value) = definedExternally\n var ports: Array<MessagePort>?\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ServiceWorkerMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles: Boolean? =
false, cancelable: Boolean? = false, composed: Boolean? = false): ServiceWorkerMessageEventInit {\n val o =
js(\"({})\")\n
o[\"data\"] = data\n o[\"origin\"] = origin\n o[\"lastEventId\"] = lastEventId\n o[\"source\"] = source\n
o[\"ports\"] = ports\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerGlobalScope) to
Kotlin\n */\npublic external abstract class ServiceWorkerGlobalScope : WorkerGlobalScope {\n open val clients:
Clients\n open val registration: ServiceWorkerRegistration\n open var oninstall: ((Event) -> dynamic)?\n open
var onactivate: ((Event) -> dynamic)?\n open var onfetch: ((FetchEvent) -> dynamic)?\n open var
onforeignfetch: ((Event) -> dynamic)?\n open var onmessage: ((MessageEvent) -> dynamic)?\n open var
onnotificationclick: ((NotificationEvent) -> dynamic)?\n open var onnotificationclose: ((NotificationEvent) ->
dynamic)?\n open var onfunctionalevent: ((Event)
-> dynamic)?\n fun skipWaiting(): Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript
[Client](https://developer.mozilla.org/en/docs/Web/API/Client) to Kotlin\n */\npublic external abstract class Client :
UnionClientOrMessagePortOrServiceWorker {\n open val url: String\n open val frameType: FrameType\n
open val id: String\n fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n
* Exposes the JavaScript [WindowClient](https://developer.mozilla.org/en/docs/Web/API/WindowClient) to
Kotlin\n */\npublic external abstract class WindowClient : Client {\n open val visibilityState: dynamic\n open
val focused: Boolean\n fun focus(): Promise<WindowClient>\n fun navigate(url: String):
Promise<WindowClient>\n}\n\n/**\n * Exposes the JavaScript
[Clients](https://developer.mozilla.org/en/docs/Web/API/Clients) to Kotlin\n */\npublic external abstract class
Clients {\n fun get(id: String): Promise<Any?>\n fun matchAll(options: ClientQueryOptions
= definedExternally): Promise<Array<Client>>\n fun openWindow(url: String): Promise<WindowClient?>\n
fun claim(): Promise<Unit>\n}\n\npublic external interface ClientQueryOptions {\n var includeUncontrolled:
Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var type:

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ClientType? /* = ClientType.WINDOW */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ClientQueryOptions(includeUncontrolled: Boolean? = false, type: ClientType? = ClientType.WINDOW):
ClientQueryOptions {\n    val o = js(\\"({})\")\n    o[\"includeUncontrolled\"] = includeUncontrolled\n    o[\"type\"] =
type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[ExtendableEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableEvent) to Kotlin\n */\npublic external
open class ExtendableEvent(type: String, eventInitDict:
ExtendableEventInit = definedExternally) : Event {\n    fun waitUntil(f: Promise<Any?>)\n\n    companion object
{\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val
BUBBLING_PHASE: Short\n    }\n}\n\npublic external interface ExtendableEventInit :
EventInit\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableEventInit(bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableEventInit {\n    val o =
js(\\"({})\")\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[InstallEvent](https://developer.mozilla.org/en/docs/Web/API/InstallEvent) to Kotlin\n */\npublic external open
class InstallEvent(type: String, eventInitDict: ExtendableEventInit = definedExternally) : ExtendableEvent {\n    fun
registerForeignFetch(options: ForeignFetchOptions)\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET:
Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\npublic external interface ForeignFetchOptions {\n    var
scopes: Array<String>?\n    var origins: Array<String>?\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchOptions(scopes:
Array<String>?, origins: Array<String>?): ForeignFetchOptions {\n    val o = js(\\"({})\")\n    o[\"scopes\"] =
scopes\n    o[\"origins\"] = origins\n    return o\n}\n\n/**\n * Exposes the JavaScript
[FetchEvent](https://developer.mozilla.org/en/docs/Web/API/FetchEvent) to Kotlin\n */\npublic external open class
FetchEvent(type: String, eventInitDict: FetchEventInit) : ExtendableEvent {\n    open val request: Request\n    open
val clientId: String?\n    open val isReload: Boolean\n    fun respondWith(r: Promise<Response>)\n\n    companion
object {\n        val NONE:
Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE:
Short\n    }\n}\n\npublic external interface FetchEventInit : ExtendableEventInit {\n    var request: Request?\n    var
clientId: String? /* = null */\n    get() = definedExternally\n    set(value) = definedExternally\n    var isReload:
Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun FetchEventInit(request: Request?,
clientId: String? = null, isReload: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): FetchEventInit {\n    val o = js(\\"({})\")\n    o[\"request\"] = request\n    o[\"clientId\"]
= clientId\n    o[\"isReload\"] = isReload\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] = composed\n    return o\n}\n\npublic external
open class ForeignFetchEvent(type: String, eventInitDict: ForeignFetchEventInit) : ExtendableEvent {\n    open val
request: Request\n    open val origin: String\n    fun respondWith(r: Promise<ForeignFetchResponse>)\n\n    companion
object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET:
Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\npublic external interface ForeignFetchEventInit :
ExtendableEventInit {\n    var request: Request?\n    var origin: String? /* = \"null\" */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchEventInit(request:
Request?, origin: String? = \"null\", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): ForeignFetchEventInit {\n    val o = js(\\"({})\")\n    o[\"request\"] = request\n    o[\"origin\"] = origin\n

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o["bubbles"] = bubbles\n
  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\npublic external interface
ForeignFetchResponse {\n  var response: Response?\n  var origin: String?\n  get() = definedExternally\n
set(value) = definedExternally\n  var headers: Array<String>?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchResponse(response:
Response?, origin: String? = undefined, headers: Array<String>? = undefined): ForeignFetchResponse {\n  val o =
js(\"({})\")\n  o["response"] = response\n  o["origin"] = origin\n  o["headers"] = headers\n  return
o\n}\n\n/**\n * Exposes the JavaScript
[ExtendableMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableMessageEvent) to Kotlin\n
*/\npublic external open class ExtendableMessageEvent(type: String, eventInitDict: ExtendableMessageEventInit
= definedExternally) : ExtendableEvent {\n  open val data: Any?\n  open val origin: String\n  open val
lastEventId: String\n  open val source: UnionClientOrMessagePortOrServiceWorker?\n  open val ports:
Array<out MessagePort>?\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE:
Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface
ExtendableMessageEventInit : ExtendableEventInit {\n  var data: Any?\n  get() = definedExternally\n
set(value) = definedExternally\n  var origin: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var lastEventId: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var source: UnionClientOrMessagePortOrServiceWorker?\n  get() = definedExternally\n
set(value) = definedExternally\n  var ports: Array<MessagePort>?\n  get() = definedExternally\n
set(value)
= definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionClientOrMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableMessageEventInit {\n
val o = js(\"({})\")\n  o["data"] = data\n  o["origin"] = origin\n  o["lastEventId"] = lastEventId\n
o["source"] = source\n  o["ports"] = ports\n  o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n
o["composed"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[Cache](https://developer.mozilla.org/en/docs/Web/API/Cache) to Kotlin\n
*/\npublic external abstract class Cache
{\n  fun match(request: dynamic, options: CacheQueryOptions = definedExternally): Promise<Any?>\n
  fun matchAll(request: dynamic = definedExternally, options: CacheQueryOptions = definedExternally):
Promise<Array<Response>>\n  fun add(request: dynamic): Promise<Unit>\n  fun addAll(requests:
Array<dynamic>): Promise<Unit>\n  fun put(request: dynamic, response: Response): Promise<Unit>\n  fun
delete(request: dynamic, options: CacheQueryOptions = definedExternally): Promise<Boolean>\n  fun
keys(request: dynamic = definedExternally, options: CacheQueryOptions = definedExternally):
Promise<Array<Request>>\n}\n\npublic external interface CacheQueryOptions {\n  var ignoreSearch: Boolean? /*
= false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var ignoreMethod: Boolean? /* =
false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var ignoreVary: Boolean? /* =
false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var cacheName: String?\n
get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun CacheQueryOptions(ignoreSearch:
Boolean? = false, ignoreMethod: Boolean? = false, ignoreVary: Boolean? = false, cacheName: String? = undefined):
CacheQueryOptions {\n  val o = js(\"({})\")\n  o["ignoreSearch"] = ignoreSearch\n  o["ignoreMethod"] =
ignoreMethod\n  o["ignoreVary"] = ignoreVary\n  o["cacheName"] = cacheName\n  return o\n}\n\npublic
external interface CacheBatchOperation {\n  var type: String?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var request: Request?\n  get() = definedExternally\n  set(value) = definedExternally\n

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var response: Response? \n    get() = definedExternally \n    set(value) = definedExternally \n    var options:
CacheQueryOptions? \n    get() = definedExternally \n    set(value) =
definedExternally \n} \n\n@Suppress(\\"INVISIBLE_REFERENCE\\",
\\"INVISIBLE_MEMBER\\") \n\n@kotlin.internal.InlineOnly \n\npublic inline fun CacheBatchOperation(type: String? =
undefined, request: Request? = undefined, response: Response? = undefined, options: CacheQueryOptions? =
undefined): CacheBatchOperation { \n    val o = js(\\"({})\\") \n    o[\\\"type\\\"] = type \n    o[\\\"request\\\"] = request \n
o[\\\"response\\\"] = response \n    o[\\\"options\\\"] = options \n    return o \n} \n\n/** \n * Exposes the JavaScript
[CacheStorage](https://developer.mozilla.org/en/docs/Web/API/CacheStorage) to Kotlin \n */ \n\npublic external
abstract class CacheStorage { \n    fun match(request: dynamic, options: CacheQueryOptions = definedExternally):
Promise<Any?> \n    fun has(cacheName: String): Promise<Boolean> \n    fun open(cacheName: String):
Promise<Cache> \n    fun delete(cacheName: String): Promise<Boolean> \n    fun keys():
Promise<Array<String>> \n} \n\n\npublic external open class FunctionalEvent : ExtendableEvent { \n    companion
object { \n        val NONE: Short \n
        val CAPTURING_PHASE: Short \n        val AT_TARGET: Short \n        val BUBBLING_PHASE: Short \n
    } \n} \n\n\npublic external interface UnionMessagePortOrServiceWorker \n\n\npublic external interface
UnionClientOrMessagePortOrServiceWorker \n\n\n/* please, don't implement this interface!
*/ \n\n@JsName(\\"null\\") \n\n@Suppress(\\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\\") \n\n\npublic external
interface ServiceWorkerState { \n    companion object \n} \n\n\npublic inline val
ServiceWorkerState.Companion.INSTALLING: ServiceWorkerState get() =
\\"installing\\".asDynamic().unsafeCast<ServiceWorkerState>() \n\n\npublic inline val
ServiceWorkerState.Companion.INSTALLED: ServiceWorkerState get() =
\\"installed\\".asDynamic().unsafeCast<ServiceWorkerState>() \n\n\npublic inline val
ServiceWorkerState.Companion.ACTIVATING: ServiceWorkerState get() =
\\"activating\\".asDynamic().unsafeCast<ServiceWorkerState>() \n\n\npublic inline val
ServiceWorkerState.Companion.ACTIVATED: ServiceWorkerState get() =
\\"activated\\".asDynamic().unsafeCast<ServiceWorkerState>() \n\n\npublic
inline val ServiceWorkerState.Companion.REDUNDANT: ServiceWorkerState get() =
\\"redundant\\".asDynamic().unsafeCast<ServiceWorkerState>() \n\n\n/* please, don't implement this interface!
*/ \n\n@JsName(\\"null\\") \n\n@Suppress(\\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\\") \n\n\npublic external
interface FrameType { \n    companion object \n} \n\n\npublic inline val FrameType.Companion.AUXILIARY:
FrameType get() =\\"auxiliary\\".asDynamic().unsafeCast<FrameType>() \n\n\npublic inline val
FrameType.Companion.TOP_LEVEL: FrameType get() =\\"top-
level\\".asDynamic().unsafeCast<FrameType>() \n\n\npublic inline val FrameType.Companion.NESTED: FrameType
get() =\\"nested\\".asDynamic().unsafeCast<FrameType>() \n\n\npublic inline val FrameType.Companion.NONE:
FrameType get() =\\"none\\".asDynamic().unsafeCast<FrameType>() \n\n\n/* please, don't implement this interface!
*/ \n\n@JsName(\\"null\\") \n\n@Suppress(\\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\\") \n\n\npublic external
interface ClientType { \n    companion object \n} \n\n\npublic
inline val ClientType.Companion.WINDOW: ClientType get() =
\\"window\\".asDynamic().unsafeCast<ClientType>() \n\n\npublic inline val ClientType.Companion.WORKER:
ClientType get() =\\"worker\\".asDynamic().unsafeCast<ClientType>() \n\n\npublic inline val
ClientType.Companion.SHAREDWORKER: ClientType get() =
\\"sharedworker\\".asDynamic().unsafeCast<ClientType>() \n\n\npublic inline val ClientType.Companion.ALL:
ClientType get() =\\"all\\".asDynamic().unsafeCast<ClientType>() \n\n\n/* Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file. \n */ \n\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT! \n\n// See github.com/kotlin/dukat for details \n\n\npackage org.w3c.xhr \n\n\nimport kotlin.js.* \n\nimport
org.khronos.webgl.* \n\nimport org.w3c.dom.* \n\nimport org.w3c.dom.events.* \n\nimport org.w3c.files.* \n\n\n/** \n *
Exposes the JavaScript

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[XMLHttpRequestEventTarget](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequestEventTarget) to Kotlin\n */\npublic external abstract class XMLHttpRequestEventTarget : EventTarget {\n open var onloadstart: ((ProgressEvent) -> dynamic)?\n open var onprogress: ((ProgressEvent) -> dynamic)?\n open var onabort: ((Event) -> dynamic)?\n open var onerror: ((Event) -> dynamic)?\n open var onload: ((Event) -> dynamic)?\n open var ontimeout: ((Event) -> dynamic)?\n open var onloadend: ((Event) -> dynamic)?\n }\n\npublic external abstract class XMLHttpRequestUpload : XMLHttpRequestEventTarget\n\n/*\n * Exposes the JavaScript [XMLHttpRequest](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequest) to Kotlin\n */\npublic external open class XMLHttpRequest : XMLHttpRequestEventTarget {\n var onloadstart: ((Event) -> dynamic)?\n open val readyState: Short\n var timeout: Int\n var withCredentials: Boolean\n open val upload: XMLHttpRequestUpload\n open val responseURL: String\n open val status: Short\n open val statusText: String\n var responseType: XMLHttpRequestResponseType\n open val response: Any?\n open val responseText: String\n open val responseXML: Document?\n fun open(method: String, url: String)\n fun open(method: String, url: String, async: Boolean, username: String? = definedExternally, password: String? = definedExternally)\n fun setRequestHeader(name: String, value: String)\n fun send(body: dynamic = definedExternally)\n fun abort()\n fun getResponseHeader(name: String): String?\n fun getAllResponseHeaders(): String\n fun overrideMimeType(mime: String)\n\n companion object {\n val UNSENT: Short\n val OPENED: Short\n val HEADERS_RECEIVED: Short\n val LOADING: Short\n val DONE: Short\n }\n }\n\n/*\n * Exposes the JavaScript [FormData](https://developer.mozilla.org/en/docs/Web/API/FormData) to Kotlin\n */\npublic external open class FormData(form: HTMLFormElement = definedExternally) {\n fun append(name: String, value: String)\n fun append(name: String, value: Blob, filename: String = definedExternally)\n fun delete(name: String)\n fun get(name: String): dynamic\n fun getAll(name: String): Array<dynamic>\n fun has(name: String): Boolean\n fun set(name: String, value: String)\n fun set(name: String, value: Blob, filename: String = definedExternally)\n }\n\n/*\n * Exposes the JavaScript [ProgressEvent](https://developer.mozilla.org/en/docs/Web/API/ProgressEvent) to Kotlin\n */\npublic external open class ProgressEvent(type: String, eventInitDict: ProgressEventInit = definedExternally) : Event {\n open val lengthComputable: Boolean\n open val loaded: Number\n open val total: Number\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n }\n\npublic external interface ProgressEventInit : EventInit {\n var lengthComputable: Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var loaded: Number? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var total: Number? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n }\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ProgressEventInit(lengthComputable: Boolean? = false, loaded: Number? = 0, total: Number? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ProgressEventInit {\n val o = js(\"({})\")\n o[\"lengthComputable\"] = lengthComputable\n o[\"loaded\"] = loaded\n o[\"total\"] = total\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n return o\n }\n\n/* please, don't implement this interface! */\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external interface XMLHttpRequestResponseType {\n companion object\n }\n\npublic inline val XMLHttpRequestResponseType.Companion.EMPTY: XMLHttpRequestResponseType get() = \"\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val XMLHttpRequestResponseType.Companion.ARRAYBUFFER: XMLHttpRequestResponseType get() = \"arraybuffer\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val XMLHttpRequestResponseType.Companion.BLOB: XMLHttpRequestResponseType get() = \"blob\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val XMLHttpRequestResponseType.Companion.DOCUMENT: XMLHttpRequestResponseType get() =

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\document\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.JSON: XMLHttpRequestResponseType get() =
\json\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.TEXT: XMLHttpRequestResponseType
get() = \text\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()"/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.annotation.AnnotationRetention.BINARY\nimport kotlin.annotation.AnnotationRetention.SOURCE\nimport
kotlin.annotation.AnnotationTarget.*\nimport kotlin.internal.RequireKotlin\nimport
kotlin.internal.RequireKotlinVersionKind\nimport kotlin.reflect.KClass\n\n/**\n * Signals that the annotated
annotation class is a marker of an experimental API.\n * \n * Any declaration annotated with that marker is
considered an experimental declaration\n * and its call sites should accept the experimental aspect of it either by
using [UseExperimental],\n * or by being annotated with that marker themselves, effectively causing further
propagation of that experimental aspect.\n * \n * This class
is deprecated in favor of a more general approach provided by [RequiresOptIn]/[OptIn].\n
*\n * @Target(ANNOTATION_CLASS)\n * @Retention(BINARY)\n * @SinceKotlin("1.2")\n * @RequireKotlin("1.2.50
\", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\n * @DeprecatedSinceKotlin(warningSince =
\"1.4\", errorSince = \"1.6\")\n * @Deprecated(\"Please use RequiresOptIn instead.\")\n * \n * public annotation class
Experimental(val level: Level = Level.ERROR) {\n *     /**\n *      * Severity of the diagnostic that should be reported on
usages of experimental API which did not explicitly accept the experimental aspect\n *      * of that API either by using
[UseExperimental] or by being annotated with the corresponding marker annotation.\n *      * \n *      * public enum class
Level {\n *          /** Specifies that a warning should be reported on incorrect usages of this experimental API. *\n
*          WARNING,\n *          /** Specifies that an error should be reported on incorrect usages of this experimental
API. *\n
*          ERROR,\n
*      * \n *      * } \n * \n *      * Allows to use experimental API denoted by the given markers in the annotated
file, declaration, or
expression.\n *      * If a declaration is annotated with [UseExperimental], its usages are **not** required to
opt-in to that
experimental API.\n *      * This class is deprecated in favor of a more general approach provided by
[RequiresOptIn]/[OptIn].\n *      * \n *      * @Target(\n *          CLASS, PROPERTY, LOCAL_VARIABLE,
VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER,
EXPRESSION, FILE,
TYPEALIAS)\n *      * @Retention(SOURCE)\n *      * @SinceKotlin("1.2")\n *      * @RequireKotlin("1.2.50\",
versionKind =
RequireKotlinVersionKind.COMPILER_VERSION)\n *      * @DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince
= \"1.6\")\n *      * @Deprecated(\"Please use OptIn instead.\", ReplaceWith(\"OptIn(*markerClass)\",
\"kotlin.OptIn\"))\n *      * \n *      * public annotation class UseExperimental(\n *          vararg val
markerClass: KClass<out
Annotation>)\n *      * \n *      * @Target(CLASS, PROPERTY, CONSTRUCTOR, FUNCTION,
TYPEALIAS)\n *      * @Retention(BINARY)\n *      * \n *      * internal
annotation class WasExperimental(\n *          vararg val markerClass: KClass<out Annotation>)\n *      * \n *      *
\", package
kotlin\n *      * \n *      * import kotlin.annotation.AnnotationTarget.*\n *      * \n *      * /**\n *      * This
annotation marks the standard library API
that is considered experimental and is not subject to the\n *      * [general compatibility
guarantees](https://kotlinlang.org/docs/reference/evolution/components-stability.html) given for the standard
library:\n *      * the behavior of such API may be changed or the API may be removed completely in any further
release.\n *      * \n *      * > Beware using the annotated API especially if you're developing a library,
since your library might
become binary incompatible\n *      * with the future versions of the standard library.\n *      * \n *      * Any
usage of a declaration
annotated with `@ExperimentalStdlibApi` must be accepted either by\n *      * annotating that usage with the
[OptIn]
annotation, e.g. `@OptIn(ExperimentalStdlibApi::class)`,\n *      * or by using the compiler argument
`-opt-in=kotlin.ExperimentalStdlibApi`.\n
*      * \n *      * @RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n *      * @Retention(AnnotationRetention.BINARY)\n *      * @Target(\n *          CLASS,\n

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ANNOTATION_CLASS,\n PROPERTY,\n FIELD,\n LOCAL_VARIABLE,\n VALUE_PARAMETER,\n
CONSTRUCTOR,\n FUNCTION,\n PROPERTY_GETTER,\n PROPERTY_SETTER,\n
TYPEALIAS\n)\n@MustBeDocumented\n@SinceKotlin("1.3")\npublic annotation class
ExperimentalStdlibApi\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin\n\nimport kotlin.annotation.AnnotationTarget.*\nimport
kotlin.experimental.ExperimentalTypeInference\n\n/**\n * Allows to infer generic type arguments of a function
from the calls in the annotated function parameter of that function.\n *\n * When this annotation is placed on a
generic function parameter of a function,\n * it enables to infer the type arguments of
that generic function from the lambda body passed to that parameter.\n *\n * The calls that affect inference are
either members of the receiver type of an annotated function parameter or\n * extensions for that type. The
extensions must be themselves annotated with `@BuilderInference`.\n *\n * Example: we declare\n * ```\n * fun
<T> sequence(@BuilderInference block: suspend SequenceScope<T>().-> Unit): Sequence<T>\n * ```\n * and use
it like\n * ```\n * val result = sequence { yield("result") }\n * ```\n * Here the type argument of the resulting
sequence is inferred to `String` from\n * the argument of the [SequenceScope.yield] function, that is called inside
the lambda passed to [sequence].\n *\n * Note: this annotation is experimental, see [ExperimentalTypeInference] on
how to opt-in for it.\n */\n@Target(VALUE_PARAMETER, FUNCTION,
PROPERTY)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.3")\n@ExperimentalTypeInferenc
e\npublic annotation class BuilderInference\n\n/**\n
* Enables overload selection based on the type of the value returned from lambda argument.\n *\n * When two or
more function overloads have otherwise the same parameter lists that differ only in the return type\n * of a
functional parameter, this annotation enables overload selection by the type of the value returned from\n * the
lambda function passed to this functional parameter.\n *\n * Example:\n * ```\n *
@OverloadResolutionByLambdaReturnType\n * fun create(intProducer: () -> Int): Int\n * fun
create(doubleProducer: () -> Double): Double\n * val newValue = create { 3.14 }\n * ```\n * The annotation
being applied to one of overloads allows to resolve this ambiguity by analyzing what value is returned\n * from the
lambda function.\n *\n * This annotation is also used to discriminate the annotated overloads in case if overload
selection still cannot\n * choose one of them even taking in account the result of lambda parameter analysis. In that
case a warning is reported.\n
*\n * Note: this annotation is experimental, see [ExperimentalTypeInference] on how to opt-in for it.\n
*/\n@Target(FUNCTION)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.4")\n@Experimental
TypeInference\npublic annotation class OverloadResolutionByLambdaReturnType", /*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin\n\nimport
kotlin.annotation.AnnotationTarget.*\nimport kotlin.internal.RequireKotlin\nimport
kotlin.internal.RequireKotlinVersionKind\n\n/**\n * The experimental multiplatform support API marker.\n *\n * Any usage of a declaration annotated with `@ExperimentalMultiplatform` must be accepted either by\n * annotating
that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalMultiplatform::class)`,\n * or by using the
compiler argument ` -opt-in=kotlin.ExperimentalMultiplatform `.\n
*/\n@RequiresOptIn\n@MustBeDocumented\n@Target(\n CLASS,\n ANNOTATION_CLASS,\n
PROPERTY,\n FIELD,\n LOCAL_VARIABLE,\n VALUE_PARAMETER,\n CONSTRUCTOR,\n
FUNCTION,\n PROPERTY_GETTER,\n PROPERTY_SETTER,\n
TYPEALIAS)\n@Retention(AnnotationRetention.BINARY)\n@RequireKotlin("1.2.50", versionKind =
RequireKotlinVersionKind.COMPILER_VERSION)\npublic annotation class ExperimentalMultiplatform\n\n/**\n
* Marks an expected annotation class that it isn't required to have actual counterparts in all platforms.\n *\n * This
annotation is only applicable to `expect` annotation classes in multi-platform projects and marks that class as
`optional`.\n *\n * Optional expected class is allowed to have no corresponding actual class on the platform. Optional
annotations can only be used\n * to annotate something, not as types in signatures. If an optional annotation has no

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corresponding actual class on a platform, \n * the annotation entries where it's used are simply erased when compiling code on that platform. \n * \n * Note: this annotation is experimental, see [ExperimentalMultiplatform] on how to opt-in for it. \n

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*\n @Target(ANNOTATION_CLASS)\n @Retention(AnnotationRetention.BINARY)\n @ExperimentalMultiplatform\n @RequireKotlin("1.2.50", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\n public\n annotation class OptionalExpectation\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming\n Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the\n license/LICENSE.txt file.\n */\n\n package kotlin\n\n import\n kotlin.annotation.AnnotationRetention.BINARY\n import kotlin.annotation.AnnotationRetention.SOURCE\n import\n kotlin.annotation.AnnotationTarget.*\n import kotlin.internal.RequireKotlin\n import\n kotlin.internal.RequireKotlinVersionKind\n import kotlin.reflect.KClass\n\n /**\n * Signals that the annotated\n annotation class is a marker of an API that requires an explicit opt-in. \n * \n * Call sites of any declaration annotated with that marker should opt in to the API either by using [OptIn], \n * or by\n being annotated with that marker themselves, effectively causing further propagation of the opt-in requirement. \n\n * \n * This class requires opt-in itself and can only be used with the compiler argument ` -opt-\n in=kotlin.RequiresOptIn `.\n * \n * @property message message to be reported on usages of API without an explicit\n opt-in, or empty string for the default message. \n * The default message is: ` "This declaration is\n experimental and its usage should be marked with 'Marker' \n * or '@OptIn(Marker::class)'`, where\n `Marker` is the opt-in requirement marker. \n * @property level specifies how usages of API without an explicit opt-\n in are reported in code. \n\n */\n\n @Target(ANNOTATION_CLASS)\n @Retention(BINARY)\n @SinceKotlin("1.3")\n @RequireKotlin("1.3.70\n", versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\n public annotation class RequiresOptIn(\n val message: String = "", \n val level: Level = Level.ERROR) {\n /**\n * Severity of the diagnostic that\n should be reported on usages which did not explicitly opt into \n * the API either by using [OptIn] or by being\n annotated with the corresponding marker annotation. \n * \n * public enum class Level {\n /** Specifies that a\n warning should be reported on incorrect usages of this API. \n * \n * WARNING, \n\n /** Specifies that an error\n should be reported on incorrect usages of this API. \n * \n * ERROR, \n } \n\n /**\n * Allows to use the API\n denoted by the given markers in the annotated file, declaration, or expression. \n * \n * If a declaration is annotated with\n [OptIn], its usages are **not** required to opt in to that API. \n * \n * This class requires opt-in itself and can only be\n used with the compiler argument ` -opt-in=kotlin.RequiresOptIn `.\n * \n * \n @Target(\n CLASS, PROPERTY,\n LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION,\n PROPERTY_GETTER, PROPERTY_SETTER, EXPRESSION, FILE,\n TYPEALIAS)\n @Retention(SOURCE)\n @SinceKotlin("1.3")\n @RequireKotlin("1.3.70", versionKind =\n RequireKotlinVersionKind.COMPILER_VERSION)\n public annotation class OptIn(\n vararg val markerClass:\n KClass<out Annotation>)\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language\n contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the\n license/LICENSE.txt file.\n */\n\n package kotlin.collections\n\n import kotlin.js.JsName\n\n /**\n * Provides a skeletal\n implementation of the read-only [Collection] interface. \n * \n * @param E the type of elements contained in the\n collection. The collection is covariant in its element type. \n * \n * \n @SinceKotlin("1.1")\n public abstract class\n AbstractCollection<out E> protected constructor() : Collection<E> {\n abstract override val size: Int\n abstract\n override fun iterator(): Iterator<E>\n\n override fun contains(element:\n @UnsafeVariance E): Boolean = any { it == element }\n\n override fun containsAll(elements:\n Collection<@UnsafeVariance E>): Boolean =\n elements.all { contains(it) } // use when js will support bound\n refs: elements.all(this::contains)\n\n override fun isEmpty(): Boolean = size == 0\n\n override fun toString():\n String = joinToString(", ", "[", "]") {\n if (it === this) "(this Collection)" else it.toString()\n }\n\n /**\n * Returns new array of type `Array<Any?>` with the elements of this collection. \n * \n * \n @JsName("toArray")\n protected open fun toArray(): Array<Any?> = copyToArrayImpl(this)\n\n /**\n * \n * Fills the provided [array] or creates new array of the same type \n * and fills it with the elements of this

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this@AbstractList.size)\n        this.index = index\n        }\n        override fun hasNext(): Boolean = index >
0\n\n        override fun nextIndex(): Int = index\n\n        override fun previous(): E {\n            if (!hasPrevious())
throw NoSuchElementException()\n            return get(--index)\n        }\n        override fun previousIndex(): Int =
index - 1\n        }\n\n        internal companion object {\n            internal fun checkElementIndex(index: Int, size: Int) {\n                if (index < 0 || index >= size) {\n                    throw IndexOutOfBoundsException("\index: $index, size: $size")\n                }\n            }\n\n            internal fun checkPositionIndex(index: Int, size: Int) {\n                if (index < 0 || index > size) {\n                    throw IndexOutOfBoundsException("\index: $index, size: $size")\n                }\n            }\n\n            internal fun
checkRangeIndexes(fromIndex: Int, toIndex: Int, size: Int) {\n                if (fromIndex < 0 || toIndex > size)
{\n                    throw IndexOutOfBoundsException("\fromIndex: $fromIndex, toIndex: $toIndex, size: $size")\n                }\n                if (fromIndex > toIndex) {\n                    throw IllegalArgumentException("\fromIndex >
toIndex: $toIndex")\n                }\n            }\n\n            internal fun checkBoundsIndexes(startIndex: Int, endIndex: Int, size:
Int) {\n                if (startIndex < 0 || endIndex > size) {\n                    throw IndexOutOfBoundsException("\startIndex:
$startIndex, endIndex: $endIndex, size: $size")\n                }\n                if (startIndex > endIndex) {\n                    throw
IllegalArgumentException("\startIndex: $startIndex > endIndex: $endIndex")\n                }\n            }\n\n            internal
fun orderedHashCode(c: Collection<*>): Int {\n                var hashCode = 1\n                for (e in c) {\n                    hashCode = 31 * hashCode + (e?.hashCode() ?: 0)\n                }\n                return hashCode\n            }\n\n            internal fun
orderedEquals(c:
Collection<*>, other: Collection<*>): Boolean {\n                if (c.size != other.size) return false\n\n                val
otherIterator = other.iterator()\n                for (elem in c) {\n                    val elemOther = otherIterator.next()\n                    if
(elem != elemOther) {\n                        return false\n                    }\n                }\n                return true\n            }", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n * Based on
GWT AbstractMap\n * Copyright 2007 Google Inc.\n */\npackage kotlin.collections\n/**\n * Provides a skeletal
implementation of the read-only [Map] interface.\n */\n * The implementor is required to implement [entries]
property, which should return read-only set of map entries.\n */\n * @param K the type of map keys. The map is
invariant in its key type.\n */\n * @param
V the type of map values. The map is covariant in its value type.\n */\n@SinceKotlin("1.1")\npublic abstract class
AbstractMap<K, out V> protected constructor() : Map<K, V> {\n\n    override fun containsKey(key: K): Boolean
{\n        return implFindEntry(key) != null\n    }\n\n    override fun containsValue(value: @UnsafeVariance V):
Boolean = entries.any { it.value == value }\n\n    internal fun containsEntry(entry: Map.Entry<*, *>): Boolean {\n
// since entry comes from @UnsafeVariance parameters it can be virtually anything\n        if (entry !is
Map.Entry<*, *>) return false\n        val key = entry.key\n        val value = entry.value\n        val ourValue =
get(key)\n        if (value != ourValue) {\n            return false\n        }\n        // Perhaps it was null and we don't
contain the key?\n        if (ourValue == null && !containsKey(key)) {\n            return false\n        }\n        return
true\n    }\n\n    /**\n     * Compares this map with other
instance with the ordered structural equality.\n     */\n     * @return true, if [other] instance is a [Map] of the same
size, all entries of which are contained in the [entries] set of this map.\n     */\n     override fun equals(other: Any?):
Boolean {\n        if (other === this) return true\n        if (other !is Map<*, *>) return false\n        if (size != other.size)
return false\n\n        return other.entries.all { containsEntry(it) }\n    }\n\n     override operator fun get(key: K): V? =
implFindEntry(key)?.value\n\n    /**\n     * Returns the hash code value for this map.\n     */\n     * It is the same as
the hashCode of [entries] set.\n     */\n     override fun hashCode(): Int = entries.hashCode()\n\n     override fun
isEmpty(): Boolean = size == 0\n     override val size: Int get() = entries.size\n\n    /**\n     * Returns a read-only
[Set] of all keys in this map.\n     */\n     * Accessing this property first time creates a keys view from [entries].\n     */\n     *
All subsequent accesses
just return the created instance.\n     */\n     override val keys: Set<K>\n        get() {\n            if (_keys == null) {\n
                _keys = object : AbstractSet<K>() {\n                    override operator fun contains(element: K): Boolean =
containsKey(element)\n\n                    override operator fun iterator(): Iterator<K> {\n                        val
entryIterator = entries.iterator()\n                        return object : Iterator<K> {\n                            override fun

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hasNext(): Boolean = entryIterator.hasNext()\n
    override fun next(): K = entryIterator.next().key\n
    }\n    }\n    override val size: Int get() = this@AbstractMap.size\n    }\n
}\n    return _keys!!\n    }\n    @kotlin.jvm.Volatile\n    private var _keys: Set<K>? = null\n\n
override fun toString(): String = entries.joinToString(", ", "{", "}") { toString(it)
}\n\n
private fun toString(entry: Map.Entry<K, V>): String = toString(entry.key) + "=" +
toString(entry.value)\n\n
private fun toString(o: Any?): String = if (o === this) "(this Map)" else o.toString()\n\n
/**\n * Returns a read-only [Collection] of all values in this map.\n * Accessing this property first time
creates a values view from [entries].\n * All subsequent accesses just return the created instance.\n */\n
override val values: Collection<V>\n    get() {\n        if (_values == null) {\n            _values = object :
AbstractCollection<V>()\n                override operator fun contains(element: @UnsafeVariance V): Boolean =
containsValue(element)\n            override operator fun iterator(): Iterator<V> {\n                val
entryIterator = entries.iterator()\n                return object : Iterator<V> {\n                    override fun
hasNext(): Boolean = entryIterator.hasNext()\n
                        override fun next(): V = entryIterator.next().value\n                    }\n                }\n            }\n        }\n        return _values!!\n    }\n\n
@kotlin.jvm.Volatile\n    private var _values: Collection<V>? = null\n\n
private fun implFindEntry(key: K):
Map.Entry<K, V>? = entries.firstOrNull { it.key == key }\n\n
internal companion object {\n\n    internal fun
entryHashCode(e: Map.Entry<*, *>): Int = with(e) { (key?.hashCode() ?: 0) xor (value?.hashCode() ?: 0) }\n\n
    internal fun
entryToString(e: Map.Entry<*, *>): String = with(e) { "$key=$value" }\n\n    internal fun
entryEquals(e: Map.Entry<*, *>, other: Any?): Boolean {\n        if (other !is Map.Entry<*, *>) return false\n
        return e.key == other.key && e.value == other.value\n    }\n    }\n}\n\n
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Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n
package kotlin.collections\n\n
/**\n * Provides a skeletal
implementation of the read-only [Set] interface.\n * This class is intended to help implementing read-only sets so
it doesn't support concurrent modification tracking.\n * @param E the type of elements contained in the set. The
set is covariant in its element type.\n */\n\n
@SinceKotlin("1.1")\npublic abstract class AbstractSet<out E> protected
constructor() : AbstractCollection<E>(), Set<E> {\n\n    /**\n * Compares this set with other set instance with the
unordered structural equality.\n * @return true, if [other] instance is a [Set] of the same size, all elements of
which are contained in this set.\n */\n    override fun equals(other: Any?): Boolean {\n        if (other === this)
return true\n        if (other !is Set<*>) return false\n
        return setEquals(this, other)\n    }\n\n    /**\n * Returns the hash code value for this set.\n */\n    override fun
hashCode(): Int = unorderedHashCode(this)\n\n    internal companion object {\n        internal fun
unorderedHashCode(c: Collection<*>): Int {\n            var hashCode = 0\n            for (element in c) {\n
                hashCode += (element?.hashCode() ?: 0)\n            }\n            return hashCode\n        }\n\n        internal fun
setEquals(c: Set<*>, other: Set<*>): Boolean {\n            if (c.size != other.size) return false\n            return
c.containsAll(other)\n        }\n    }\n}\n\n
/**\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n
package kotlin.collections\n\n
/**\n * Resizable-array implementation of the deque
data structure.\n * The name deque is short for "double ended queue"
and is usually pronounced "deck".\n * The collection provide methods for convenient access to the both
ends.\n * It also implements [MutableList] interface and supports efficient get/set operations by index.\n */\n\n
@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic class ArrayDeque<E> :
AbstractMutableList<E> {\n    private var head: Int = 0\n    private var elementData: Array<Any?>\n\n    override
var size: Int = 0\n    private set\n\n    /**\n * Constructs an empty deque with specified [initialCapacity], or
throws [IllegalArgumentException] if [initialCapacity] is negative.\n */\n    public constructor(initialCapacity:
Int) {\n        elementData = when {\n            initialCapacity == 0 -> emptyElementData\n            initialCapacity > 0 -
> arrayOfNulls(initialCapacity)\n        } else -> throw IllegalArgumentException("Illegal Capacity:

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$initialCapacity)\n    }\n }\n /**\n  * Constructs an empty deque.\n  */\n\n    public constructor() {\n        elementData = emptyElementData\n    }\n\n    /**\n     * Constructs a deque that contains the same elements as the specified [elements] collection in the same order.\n     */\n    public constructor(elements: Collection<E>) {\n        elementData = elements.toArray()\n        size = elementData.size\n        if (elementData.isEmpty()) elementData = emptyElementData\n    }\n\n    /**\n     * Ensures that the capacity of this deque is at least equal to the specified [minCapacity].\n     * If the current capacity is less than the [minCapacity], a new backing storage is allocated with greater capacity.\n     * Otherwise, this method takes no action and simply returns.\n     */\n    private fun ensureCapacity(minCapacity: Int) {\n        if (minCapacity < 0) throw IllegalStateException("Deque is too big.") // overflow\n        if (minCapacity <= elementData.size) return\n        if (elementData === emptyElementData) {\n            elementData = arrayOfNulls(minCapacity.coerceAtLeast(defaultMinCapacity))\n        }\n        return\n    }\n\n    val newCapacity = newCapacity(elementData.size, minCapacity)\n    copyElements(newCapacity)\n }\n\n /**\n  * Creates a new array with the specified [newCapacity] size and copies elements in the [elementData] array to it.\n  */\n    private fun copyElements(newCapacity: Int) {\n        val newElements = arrayOfNulls<Any?>(newCapacity)\n        elementData.copyInto(newElements, 0, head, elementData.size)\n        elementData.copyInto(newElements, elementData.size - head, 0, head)\n        head = 0\n        elementData = newElements\n    }\n\n    @kotlin.internal.InlineOnly\n    private inline fun internalGet(internalIndex: Int): E {\n        @Suppress("UNCHECKED_CAST")\n        return elementData[internalIndex] as E\n    }\n\n    private fun positiveMod(index: Int): Int = if (index >= elementData.size) index - elementData.size else index\n\n    private fun negativeMod(index: Int): Int = if (index < 0) index + elementData.size else index\n\n    @kotlin.internal.InlineOnly\n    private inline fun internalIndex(index: Int): Int = positiveMod(head + index)\n\n    private fun incremented(index: Int): Int = if (index == elementData.lastIndex) 0 else index + 1\n\n    private fun decremented(index: Int): Int = if (index == elementData.lastIndex) 0 else index - 1\n\n    override fun isEmpty(): Boolean = size == 0\n\n    /**\n     * Returns the first element, or throws [NoSuchElementException] if this deque is empty.\n     */\n    public fun first(): E = if (isEmpty()) throw NoSuchElementException("ArrayDeque is empty.") else internalGet(head)\n\n    /**\n     * Returns the first element, or `null` if this deque is empty.\n     */\n    public fun firstOrNull(): E? = if (isEmpty()) null else internalGet(head)\n\n    /**\n     * Returns the last element, or throws [NoSuchElementException] if this deque is empty.\n     */\n    public fun last(): E = if (isEmpty()) throw NoSuchElementException("ArrayDeque is empty.") else internalGet(internalIndex(lastIndex))\n\n    /**\n     * Returns the last element, or `null` if this deque is empty.\n     */\n    public fun lastOrNull(): E? = if (isEmpty()) null else internalGet(internalIndex(lastIndex))\n\n    /**\n     * Prepends the specified [element] to this deque.\n     */\n    public fun addFirst(element: E) {\n        ensureCapacity(size + 1)\n        head = decremented(head)\n        elementData[head] = element\n        size += 1\n    }\n\n    /**\n     * Appends the specified [element] to this deque.\n     */\n    public fun addLast(element: E) {\n        ensureCapacity(size + 1)\n        elementData[internalIndex(size)] = element\n        size += 1\n    }\n\n    /**\n     * Removes the first element from this deque and returns that removed element, or throws [NoSuchElementException] if this deque is empty.\n     */\n    public fun removeFirst(): E {\n        if (isEmpty()) throw NoSuchElementException("ArrayDeque is empty.")\n        val element = internalGet(head)\n        elementData[head] = null\n        head = incremented(head)\n        size -= 1\n        return element\n    }\n\n    /**\n     * Removes the first element from this deque and returns that removed element, or returns `null` if this deque is empty.\n     */\n    public fun removeFirstOrNull(): E? = if (isEmpty()) null else removeFirst()\n\n    /**\n     * Removes the last element from this deque and returns that removed element, or throws [NoSuchElementException] if this deque is empty.\n     */\n    public fun removeLast(): E {\n        if (isEmpty()) throw NoSuchElementException("ArrayDeque is empty.")\n        val internalLastIndex = internalIndex(lastIndex)\n        val element = internalGet(internalLastIndex)\n        elementData[internalLastIndex] = null\n        size -= 1\n        return element\n    }\n\n    /**\n     * Removes the last element from this deque and returns that removed

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element, or returns `null` if this deque is empty.\n    */\n    public fun removeLastOrNull(): E? = if (isEmpty()) null
else removeLast()\n    // MutableList, MutableCollection\n    public override fun add(element: E): Boolean {\n
addLast(element)\n        return true\n    }\n\n    public override fun add(index: Int, element: E) {\n
AbstractList.checkPositionIndex(index, size)\n        if (index == size) {\n            addLast(element)\n
return\n        } else if (index == 0) {\n            addFirst(element)\n            return\n        }\n        ensureCapacity(size
+ 1)\n        // Elements in circular array lay in 2 ways:\n        // 1. `head` is less than `tail`:    [#, #, e1, e2, e3,
#]\n        // 2. `head` is greater than `tail`:    [e3, #, #, #, e1, e2]\n        // where head is the index of the first element
in the circular array,\n        // and tail is the index following the last element.\n        //\n        // At this point
the insertion index is not equal to head or tail.\n        // Also the circular array can store at least one more element.\n
//\n        // Depending on where the given element must be inserted the preceding or the succeeding\n        //
elements will be shifted to make room for the element to be inserted.\n        //\n        // In case the preceding elements
are shifted:\n        // * if the insertion index is greater than the head (regardless of circular array form)\n        // ->
shift the preceding elements\n        // * otherwise, the circular array has (2) form and the insertion index is less than
tail\n        // -> shift all elements in the back of the array\n        // -> shift preceding elements in the front of the
array\n        // In case the succeeding elements are shifted:\n        // * if the insertion index is less than the tail
(regardless of circular array form)\n        // -> shift the succeeding elements\n        // * otherwise, the
circular array has (2) form and the insertion index is greater than head\n        // -> shift all elements in the front
of the array\n        // -> shift succeeding elements in the back of the array\n\n        val internalIndex =
internalIndex(index)\n        if (index < (size + 1) shr 1) {\n            // closer to the first element -> shift preceding
elements\n            val decrementedInternalIndex = decremented(internalIndex)\n            val decrementedHead =
decremented(head)\n\n            if (decrementedInternalIndex >= head) {\n                elementData[decrementedHead]
= elementData[head] // head can be zero\n                elementData.copyInto(elementData, head, head + 1,
decrementedInternalIndex + 1)\n            } else { // head > tail\n                elementData.copyInto(elementData, head -
1, head, elementData.size) // head can't be zero\n                elementData[elementData.size - 1] = elementData[0]\n
                elementData.copyInto(elementData,
0, 1, decrementedInternalIndex + 1)\n            }\n\n            elementData[decrementedInternalIndex] = element\n
            head = decrementedHead\n        } else {\n            // closer to the last element -> shift succeeding elements\n
val tail = internalIndex(size)\n            if (internalIndex < tail) {\n                elementData.copyInto(elementData,
internalIndex + 1, internalIndex, tail)\n            } else { // head > tail\n                elementData.copyInto(elementData,
1, 0, tail)\n                elementData[0] = elementData[elementData.size - 1]\n
                elementData.copyInto(elementData, internalIndex + 1, internalIndex, elementData.size - 1)\n            }\n
            elementData[internalIndex] = element\n        }\n        size += 1\n    }\n\n    private fun
copyCollectionElements(internalIndex: Int, elements: Collection<E>) {\n        val iterator = elements.iterator()\n
        for (index in internalIndex until elementData.size) {\n
            if (!iterator.hasNext()) break\n            elementData[index] = iterator.next()\n        }\n        for (index in 0 until
head) {\n            if (!iterator.hasNext()) break\n            elementData[index] = iterator.next()\n        }\n        size +=
elements.size\n    }\n\n    public override fun addAll(elements: Collection<E>): Boolean {\n        if
(elements.isEmpty()) return false\n        ensureCapacity(this.size + elements.size)\n
        copyCollectionElements(internalIndex(size), elements)\n        return true\n    }\n\n    public override fun
addAll(index: Int, elements: Collection<E>): Boolean {\n        AbstractList.checkPositionIndex(index, size)\n
        if (elements.isEmpty()) {\n            return false\n        } else if (index == size) {\n            return addAll(elements)\n
        }\n        ensureCapacity(this.size + elements.size)\n        val tail = internalIndex(size)\n        val internalIndex =
internalIndex(index)\n        val elementsSize
= elements.size\n        if (index < (size + 1) shr 1) {\n            // closer to the first element -> shift preceding
elements\n\n            var shiftedHead = head - elementsSize\n\n            if (internalIndex >= head) {\n                if
(shiftedHead >= 0) {\n                    elementData.copyInto(elementData, shiftedHead, head, internalIndex)\n
                } else { // head < tail, insertion leads to head >= tail\n                    shiftedHead += elementData.size\n
                    val
elementsToShift = internalIndex - head\n                    val shiftToBack = elementData.size - shiftedHead\n

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        if (shiftToBack >= elementsToShift) {\n                elementData.copyInto(elementData, shiftedHead, head,
internalIndex)\n                } else {\n                elementData.copyInto(elementData, shiftedHead, head, head +
shiftToBack)\n                elementData.copyInto(elementData, 0, head + shiftToBack, internalIndex)\n                }\n                }\n                } else { // head > tail,\n                internalIndex < tail\n                elementData.copyInto(elementData, shiftedHead, head, elementData.size)\n                if (elementsSize >=
internalIndex) {\n                elementData.copyInto(elementData, elementData.size - elementsSize, 0,
internalIndex)\n                } else {\n                elementData.copyInto(elementData, elementData.size -
elementsSize, 0, elementsSize)\n                elementData.copyInto(elementData, 0, elementsSize, internalIndex)\n                }\n                }\n                head = shiftedHead\n                copyCollectionElements(negativeMod(internalIndex -
elementsSize), elements)\n                } else {\n                // closer to the last element -> shift succeeding elements\n                val shiftedInternalIndex = internalIndex + elementsSize\n                if (internalIndex < tail) {\n                if (tail +
elementsSize <= elementData.size) {\n                elementData.copyInto(elementData, shiftedInternalIndex, internalIndex, tail)\n                } else { // head <
tail, insertion leads to head >= tail\n                if (shiftedInternalIndex >= elementData.size) {\n                elementData.copyInto(elementData, shiftedInternalIndex - elementData.size, internalIndex, tail)\n                } else
{\n                val shiftToFront = tail + elementsSize - elementData.size\n                elementData.copyInto(elementData, 0, tail - shiftToFront, tail)\n                elementData.copyInto(elementData,
shiftedInternalIndex, internalIndex, tail - shiftToFront)\n                }\n                }\n                } else { // head > tail,
internalIndex > head\n                elementData.copyInto(elementData, elementsSize, 0, tail)\n                if
(shiftedInternalIndex >= elementData.size) {\n                elementData.copyInto(elementData, shiftedInternalIndex
- elementData.size,
internalIndex, elementData.size)\n                } else {\n                elementData.copyInto(elementData, 0,
elementData.size - elementsSize, elementData.size)\n                elementData.copyInto(elementData,
shiftedInternalIndex, internalIndex, elementData.size - elementsSize)\n                }\n                }\n                copyCollectionElements(internalIndex, elements)\n                }\n                return true\n                }\n                public override fun
get(index: Int): E {\n                AbstractList.checkElementIndex(index, size)\n                return
internalGet(internalIndex(index))\n                }\n                public override fun set(index: Int, element: E): E {\n                AbstractList.checkElementIndex(index, size)\n                val internalIndex = internalIndex(index)\n                val oldElement
= internalGet(internalIndex)\n                elementData[internalIndex] = element\n                return oldElement\n                }\n                public override fun contains(element: E): Boolean = indexOf(element) != -1\n                public override
fun indexOf(element: E): Int {\n                val tail = internalIndex(size)\n                if (head < tail) {\n                for (index in
head until tail) {\n                if (element == elementData[index]) return index - head\n                }\n                } else if (head
>= tail) {\n                for (index in head until elementData.size) {\n                if (element == elementData[index]) return
index - head\n                }\n                for (index in 0 until tail) {\n                if (element == elementData[index]) return
index + elementData.size - head\n                }\n                }\n                return -1\n                }\n                public override fun
lastIndexOf(element: E): Int {\n                val tail = internalIndex(size)\n                if (head < tail) {\n                for (index in tail
- 1 downTo head) {\n                if (element == elementData[index]) return index - head\n                }\n                } else if
(head > tail) {\n                for (index in tail - 1 downTo 0) {\n                if (element == elementData[index])
return index + elementData.size - head\n                }\n                for (index in elementData.lastIndex downTo head) {\n                if (element == elementData[index]) return index - head\n                }\n                }\n                return -1\n                }\n                public
override fun remove(element: E): Boolean {\n                val index = indexOf(element)\n                if (index == -1) return
false\n                removeAt(index)\n                return true\n                }\n                public override fun removeAt(index: Int): E {\n                AbstractList.checkElementIndex(index, size)\n                if (index == lastIndex) {\n                return removeLast()\n                }
else if (index == 0) {\n                return removeFirst()\n                }\n                val internalIndex = internalIndex(index)\n                val element = internalGet(internalIndex)\n                if (index < size shr 1) {\n                // closer to the first element ->
shift preceding elements\n                if (internalIndex >= head) {\n                elementData.copyInto(elementData, head
+ 1, head, internalIndex)\n                } else { // head > tail, internalIndex < head\n                elementData.copyInto(elementData, 1, 0, internalIndex)\n                elementData[0] = elementData[elementData.size

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- 1]\n        elementData.copyInto(elementData, head + 1, head, elementData.size - 1)\n        }\n\n    elementData[head] = null\n        head = incremented(head)\n    } else {\n        // closer to the last element ->\n    shift succeeding elements\n        val internalLastIndex = internalIndex(lastIndex)\n        if (internalIndex <=\n    internalLastIndex) {\n        elementData.copyInto(elementData, internalIndex, internalIndex + 1,\n    internalLastIndex + 1)\n        } else { // head > tail, internalIndex > head\n    elementData.copyInto(elementData, internalIndex, internalIndex + 1, elementData.size)\n    elementData[elementData.size - 1] = elementData[0]\n        elementData.copyInto(elementData,\n    0, 1, internalLastIndex + 1)\n        }\n\n        elementData[internalLastIndex] = null\n        }\n        size -= 1\n\n        return element\n    }\n\n    public override fun removeAll(elements: Collection<E>): Boolean = filterInPlace {\n    !elements.contains(it) }\n\n    public override fun retainAll(elements: Collection<E>): Boolean = filterInPlace {\n    elements.contains(it) }\n\n    private inline fun filterInPlace(predicate: (E) -> Boolean): Boolean {\n        if\n    (this.isEmpty() || elementData.isEmpty())\n        return false\n\n        val tail = internalIndex(size)\n        var\n    newTail = head\n        var modified = false\n\n        if (head < tail) {\n            for (index in head until tail) {\n                val element = elementData[index]\n                @Suppress(\"UNCHECKED_CAST\")\n                if\n    (predicate(element as E))\n                elementData[newTail++] = element\n                else\n                modified = true\n            }\n\n            elementData.fill(null, newTail, tail)\n        } else {\n            for (index in head until elementData.size) {\n                val element = elementData[index]\n                elementData[index] = null\n                @Suppress(\"UNCHECKED_CAST\")\n                if (predicate(element as E))\n                elementData[newTail++] = element\n                else\n                modified = true\n            }\n\n            newTail =\n    positiveMod(newTail)\n            for (index in 0 until tail) {\n                val element = elementData[index]\n                elementData[index] = null\n                @Suppress(\"UNCHECKED_CAST\")\n                if (predicate(element as\n    E)) {\n                elementData[newTail] = element\n                newTail = incremented(newTail)\n            }\n            else {\n                modified = true\n            }\n        }\n\n        if (modified)\n            size =\n    negativeMod(newTail\n    - head)\n\n        return modified\n    }\n\n    public override fun clear() {\n        val tail = internalIndex(size)\n        if\n    (head < tail) {\n        elementData.fill(null, head, tail)\n        } else if (isEmpty()) {\n    elementData.fill(null, head, elementData.size)\n        elementData.fill(null, 0, tail)\n        }\n        head = 0\n    }\n\n    size = 0\n    }\n\n    @Suppress(\"NOTHING_TO_OVERRIDE\")\n    override fun <T> toArray(array: Array<T>):\n    Array<T> {\n        @Suppress(\"UNCHECKED_CAST\")\n        val dest = (if (array.size >= size) array else\n    arrayOfNulls(array, size)) as Array<Any?>\n\n        val tail = internalIndex(size)\n        if (head < tail) {\n            elementData.copyInto(dest, startIndex = head, endIndex = tail)\n        } else if (isEmpty()) {\n            elementData.copyInto(dest, destinationOffset = 0, startIndex = head, endIndex = elementData.size)\n        }\n        elementData.copyInto(dest, destinationOffset = elementData.size\n    - head, startIndex = 0, endIndex = tail)\n        }\n\n        if (dest.size > size) {\n            dest[size] = null // null-terminate\n        }\n\n        @Suppress(\"UNCHECKED_CAST\")\n        return dest as Array<T>\n    }\n\n    @Suppress(\"NOTHING_TO_OVERRIDE\")\n    override fun toArray(): Array<Any?> {\n        return\n    toArray(arrayOfNulls<Any?>(size))\n    }\n\n    // for testing\n    internal fun <T> testToArray(array: Array<T>):\n    Array<T> = toArray(array)\n\n    internal fun testToArray(): Array<Any?> = toArray()\n\n    internal companion\n    object {\n        private val emptyElementData = emptyArray<Any?>()\n        private const val maxArraySize =\n    Int.MAX_VALUE - 8\n        private const val defaultMinCapacity = 10\n\n        internal fun\n    newCapacity(oldCapacity: Int, minCapacity: Int): Int {\n            // overflow-conscious\n            var newCapacity =\n    oldCapacity + (oldCapacity shr 1)\n            if (newCapacity - minCapacity < 0)\n                newCapacity =\n    minCapacity\n\n            if (newCapacity - maxArraySize > 0)\n                newCapacity = if (minCapacity > maxArraySize)\n    Int.MAX_VALUE else maxArraySize\n            return newCapacity\n        }\n    }\n\n    // For testing only\n    internal fun internalStructure(structure: (head: Int, elements: Array<Any?>) -> Unit) {\n        val tail =\n    internalIndex(size)\n        val head = if (isEmpty() || head < tail) head else head - elementData.size\n    }

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structure(head, toArray())\n } \n }", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ArraysKt")\n\n\npackage
kotlin.collections\n\nimport kotlin.contracts.*\n\n\n/**\n * Returns a single list of all elements from all arrays in the
given array.\n * @sample samples.collections.Arrays.Transformations.flattenArray\n */\n\npublic
fun <T> Array<out Array<out T>>.flatten(): List<T> {\n    val result = ArrayList<T>(sumOf { it.size })\n    for
(element in this) {\n        result.addAll(element)\n    }\n    return result\n}\n\n\n/**\n * Returns a pair of lists, where\n
* *first* list is built from the first values of each pair from this array,\n * *second* list is built from the second
values of each pair from this array.\n * @sample samples.collections.Arrays.Transformations.unzipArray\n
*/\n\npublic fun <T, R> Array<out Pair<T, R>>.unzip(): Pair<List<T>, List<R>> {\n    val listT =
ArrayList<T>(size)\n    val listR = ArrayList<R>(size)\n    for (pair in this) {\n        listT.add(pair.first)\n
listR.add(pair.second)\n    }\n    return listT to listR\n}\n\n\n/**\n * Returns `true` if this nullable array is either null or
empty.\n * @sample samples.collections.Arrays.Usage.arrayIsNullOrEmpty\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n\npublic inline fun Array<*>?.isNullOrEmpty(): Boolean
{\n    contract
{\n        returns(false) implies (this@isNullOrEmpty != null)\n    }\n\n    return this == null ||
this.isEmpty()\n}\n\n\n/**\n * Returns this array if it's not empty\n * or the result of calling [defaultValue] function if
the array is empty.\n * @sample samples.collections.Arrays.Usage.arrayIfEmpty\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("UPPER_BOUND_CANNOT_BE_ARRAY")\n\npublic inline fun <C, R> C.ifEmpty(defaultValue: () -> R): R where C : Array<*>, C : R =\n    if (isEmpty())
defaultValue() else
this\n}\n\n\n@OptIn(ExperimentalUnsignedTypes::class)\n@SinceKotlin("1.3")\n@PublishedApi\n@kotlin.jvm.Jvm
Name("contentDeepEquals")\n@kotlin.js.JsName("contentDeepEqualsImpl")\n\ninternal fun <T> Array<out
T>?.contentDeepEqualsImpl(other: Array<out T>?): Boolean {\n    if (this === other) return true\n    if (this == null
|| other == null || this.size != other.size) return false\n    for (i in indices) {\n        val v1 = this[i]\n        val v2 =
other[i]\n\n        if (v1 === v2) {\n            continue\n        } else if (v1 == null || v2 == null) {\n            return false\n        }\n\n        when {\n            v1 is Array<*> && v2 is Array<*> -> if (!v1.contentDeepEquals(v2)) return false\n
            v1 is ByteArray && v2 is ByteArray -> if (!v1.contentEquals(v2)) return false\n            v1 is ShortArray &&
v2 is ShortArray -> if (!v1.contentEquals(v2)) return false\n            v1 is IntArray && v2 is IntArray -> if
(!v1.contentEquals(v2)) return false\n            v1 is LongArray && v2 is LongArray -> if (!v1.contentEquals(v2))
return false\n            v1 is FloatArray && v2 is FloatArray -> if (!v1.contentEquals(v2)) return false\n            v1 is
DoubleArray && v2 is DoubleArray -> if (!v1.contentEquals(v2)) return false\n            v1 is CharArray && v2
is CharArray -> if (!v1.contentEquals(v2)) return false\n            v1 is BooleanArray && v2 is BooleanArray -> if
(!v1.contentEquals(v2))
return false\n            v1 is UByteArray && v2 is UByteArray -> if (!v1.contentEquals(v2)) return false\n
            v1 is UShortArray && v2 is UShortArray -> if (!v1.contentEquals(v2)) return false\n            v1 is UIntArray &&
v2 is UIntArray -> if (!v1.contentEquals(v2)) return false\n            v1 is ULongArray && v2 is ULongArray ->
if (!v1.contentEquals(v2)) return false\n\n            else -> if (v1 != v2) return false\n        }\n    }\n    return
true\n}\n\n\n@SinceKotlin("1.3")\n@PublishedApi\n@kotlin.jvm.JvmName("contentDeepToString")\n@kotlin.js.
JsName("contentDeepToStringImpl")\n\ninternal fun <T> Array<out T>?.contentDeepToStringImpl(): String {\n    if (this == null) return "null"\n    val length = size.coerceAtMost((Int.MAX_VALUE - 2) / 5) * 5 + 2 // in order not
to overflow Int.MAX_VALUE\n    return buildString(length) {\n        contentDeepToStringInternal(this,
mutableListOf())\n    }\n}\n\n\n@OptIn(ExperimentalUnsignedTypes::class)\n\nprivate
fun <T> Array<out T>.contentDeepToStringInternal(result: StringBuilder, processed: MutableList<Array<*>>) {\n    if (this in processed) {\n        result.append("[...]")\n        return\n    }\n    processed.add(this)\n    result.append("[")\n    for (i in indices) {\n        if (i != 0) {\n            result.append(", ")\n        }\n        val element

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= this[i]\n    when (element) {\n        null    -> result.append("\null")\n        is Array<*> ->
element.contentDeepToStringInternal(result, processed)\n        is ByteArray ->
result.append(element.contentToString())\n        is ShortArray -> result.append(element.contentToString())\n
        is IntArray -> result.append(element.contentToString())\n        is LongArray ->
result.append(element.contentToString())\n        is FloatArray -> result.append(element.contentToString())\n
        is DoubleArray -> result.append(element.contentToString())\n
        is CharArray -> result.append(element.contentToString())\n        is BooleanArray ->
result.append(element.contentToString())\n        is UByteArray -> result.append(element.contentToString())\n
        is UShortArray -> result.append(element.contentToString())\n        is UIntArray ->
result.append(element.contentToString())\n        is ULongArray -> result.append(element.contentToString())\n
        else -> result.append(element.toString())\n    }\n }\n\n result.append('')\n
processed.removeAt(processed.lastIndex)\n}", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/** Returns true if the brittle contains optimization
is enabled. See KT-45438. */\n\ninternal expect fun brittleContainsOptimizationEnabled(): Boolean\n\n/**\n * Returns true if [brittleContainsOptimizationEnabled] is true\n * and it's safe to convert this collection to a set
without changing contains method behavior.\n */\n\nprivate fun <T> Collection<T>.safeToConvertToSet() =
brittleContainsOptimizationEnabled() && size > 2 && this is ArrayList\n\n/**\n * When
[brittleContainsOptimizationEnabled] is true:\n * - Converts this [Iterable] to a set if it is not a [Collection].\n * -
Converts this [Collection] to a set, when it's worth so and it doesn't change contains method behavior.\n * -
Otherwise returns this.\n * When [brittleContainsOptimizationEnabled] is false:\n * - Converts this [Iterable] to a
list if it is not a [Collection].\n * - Otherwise returns this.\n */\n\ninternal fun <T>
Iterable<T>.convertToSetForSetOperationWith(source: Iterable<T>): Collection<T> =\n    when (this) {\n        is
Set -> this\n        is Collection ->\n            when {\n                source is Collection && source.size < 2 -> this\n
                else -> if (this.safeToConvertToSet()) toHashSet() else this\n            }\n        else -> if
(brittleContainsOptimizationEnabled()) toHashSet() else toList()\n    }\n\n/**\n * When
[brittleContainsOptimizationEnabled] is true:\n * - Converts this [Iterable] to a set if it is not a [Collection].\n * -
Converts this [Collection] to a set, when it's worth so and it doesn't change contains method behavior.\n * -
Otherwise returns this.\n * When [brittleContainsOptimizationEnabled] is false:\n * - Converts this [Iterable] to a
list if it is not a [Collection].\n * - Otherwise returns this.\n */\n\ninternal fun <T>
Iterable<T>.convertToSetForSetOperation(): Collection<T> =\n    when (this) {\n        is Set -> this\n        is
Collection -> if (this.safeToConvertToSet()) toHashSet() else this\n        else -> if
(brittleContainsOptimizationEnabled()) toHashSet() else toList()\n    }\n\n/**\n * Converts this sequence to a set if
[brittleContainsOptimizationEnabled] is true,\n * otherwise
converts it to a list.\n */\n\ninternal fun <T> Sequence<T>.convertToSetForSetOperation(): Collection<T> =\n    if
(brittleContainsOptimizationEnabled()) toHashSet() else toList()\n\n/**\n * Converts this array to a set if
[brittleContainsOptimizationEnabled] is true,\n * otherwise converts it to a list.\n */\n\ninternal fun <T>
Array<T>.convertToSetForSetOperation(): Collection<T> =\n    if (brittleContainsOptimizationEnabled())
toHashSet() else asList()"}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/**\n * Data class representing a value from a
collection or sequence, along with its index in that collection or sequence.\n * @property value the underlying
value.\n * @property index the index of the value in the collection or sequence.\n */\n\npublic data class
IndexedValue<out T>(public val
index: Int, public val value: T)\n"}\n\n/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmName("MapAccessorsKt")\n\npackage
kotlin.collections\n\nimport kotlin.reflect.KProperty\nimport kotlin.internal.Exact\n\n/**\n * Returns the value of

```

the property for the given object from this read-only map.
@param thisRef the object for which the value is requested (not used).
@param property the metadata for the property, used to get the name of property and lookup the value corresponding to this name in the map.
@return the property value.
@throws NoSuchElementException when the map doesn't contain value for the property name and doesn't provide an implicit default (see [withDefault]).
@kotlin.internal.InlineOnly
public inline operator fun <V, V1 : V> Map<in String, @Exact V>.getValue(thisRef:

```
Any?, property: KProperty<*>): V1 =\n    @Suppress("UNCHECKED_CAST")\n    (getOrImplicitDefault(property.name) as V1)\n\n/**\n * Returns the value of the property for the given object from this mutable map.  
@param thisRef the object for which the value is requested (not used).  
@param property the metadata for the property, used to get the name of property and lookup the value corresponding to this name in the map.  
@return the property value.  
@throws NoSuchElementException when the map doesn't contain value for the property name and doesn't provide an implicit default (see [withDefault]).
```

```
*\n@kotlin.jvm.JvmName("getVar")\n@kotlin.internal.InlineOnly\npublic inline operator fun <V, V1 : V> MutableMap<in String, out @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =\n    @Suppress("UNCHECKED_CAST") (getOrImplicitDefault(property.name) as V1)\n\n/**\n * Stores the value of the property for the given object in this mutable map.  
@param thisRef
```

```
the object for which the value is requested (not used).  
@param property the metadata for the property, used to get the name of property and store the value associated with that name in the map.  
@param value the value to set.  
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <V> MutableMap<in String, in V>.setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n    this.put(property.name, value)\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.  
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
```

```
*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n\npackage kotlin.collections\n\n/**\n * Returns the value for the given key, or the implicit default value for this map.  
 * By default no implicit value is provided for maps and a [NoSuchElementException] is thrown.  
 * To create a map with implicit default value use [withDefault]
```

```
method.  
 * @throws NoSuchElementException when the map doesn't contain a value for the specified key and no implicit default was provided for that map.
```

```
*\n@kotlin.jvm.JvmName("getOrImplicitDefaultNullable")\n@PublishedApi\ninternal fun <K, V> Map<K, V>.getOrImplicitDefault(key: K): V {\n    if (this is MapWithDefault)\n        return this.getOrImplicitDefault(key)\n    return getOrElseNullable(key, { throw NoSuchElementException("Key $key is missing in the map.") })\n}\n\n/**\n * Returns a wrapper of this read-only map, having the implicit default value provided with the specified function [defaultValue].  
 * This implicit default value is used when the original map doesn't contain a value for the key specified  
 * and a value is obtained with [Map.getValue] function, for example when properties are delegated to the map.  
 * When this map already has an implicit default value provided with a former call to [withDefault], it is being replaced by this call.
```

```
*\npublic fun <K, V> Map<K, V>.withDefault(defaultValue: (key: K) -> V): Map<K, V> =\n    when (this) {\n        is MapWithDefault -> this.map.withDefault(defaultValue)\n        else -> MapWithDefaultImpl(this, defaultValue)\n    }\n\n/**\n * Returns a wrapper of this mutable map, having the implicit default value provided with the specified function [defaultValue].  
 * This implicit default value is used when the original map doesn't contain a value for the key specified  
 * and a value is obtained with [Map.getValue] function, for example when properties are delegated to the map.  
 * When this map already has an implicit default value provided with a former call to [withDefault], it is being replaced by this call.
```

```
*\n@kotlin.jvm.JvmName("withDefaultMutable")\npublic fun <K, V> MutableMap<K, V>.withDefault(defaultValue: (key: K) -> V): MutableMap<K, V> =\n    when (this) {\n        is MutableMapWithDefault -> this.map.withDefault(defaultValue)\n        else ->
```

```
MutableMapWithDefaultImpl(this, defaultValue)\n    }\n\nprivate interface MapWithDefault<K, out V> : Map<K, V> {\n    public val map: Map<K, V>\n    public fun getOrImplicitDefault(key: K): V\n}\n\nprivate interface MutableMapWithDefault<K, V> :
```

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MutableMap<K, V>, MapWithDefault<K, V> {\n  public override val map: MutableMap<K, V>}\n\nprivate
class MapWithDefaultImpl<K, out V>(public override val map: Map<K, V>, private val default: (key: K) -> V) :
MapWithDefault<K, V> {\n  override fun equals(other: Any?): Boolean = map.equals(other)\n  override fun
hashCode(): Int = map.hashCode()\n  override fun toString(): String = map.toString()\n  override val size: Int get()
= map.size\n  override fun isEmpty(): Boolean = map.isEmpty()\n  override fun containsKey(key: K): Boolean =
map.containsKey(key)\n  override fun containsValue(value: @UnsafeVariance V): Boolean =
map.containsValue(value)\n  override fun get(key: K): V? = map.get(key)\n  override val keys: Set<K> get() =
map.keys\n
  override val values: Collection<V> get() = map.values\n  override val entries: Set<Map.Entry<K, V>> get() =
map.entries\n\n  override fun getOrDefault(key: K): V = map.getOrNull(key, { default(key)
})}\n}\n\nprivate class MutableMapWithDefaultImpl<K, V>(public override val map: MutableMap<K, V>, private
val default: (key: K) -> V) : MutableMapWithDefault<K, V> {\n  override fun equals(other: Any?): Boolean =
map.equals(other)\n  override fun hashCode(): Int = map.hashCode()\n  override fun toString(): String =
map.toString()\n  override val size: Int get() = map.size\n  override fun isEmpty(): Boolean = map.isEmpty()\n
override fun containsKey(key: K): Boolean = map.containsKey(key)\n  override fun containsValue(value:
@UnsafeVariance V): Boolean = map.containsValue(value)\n  override fun get(key: K): V? = map.get(key)\n
override val keys: MutableSet<K> get() = map.keys\n  override val values: MutableCollection<V> get() =
map.values\n
  override val entries: MutableSet<MutableMap.MutableEntry<K, V>> get() = map.entries\n\n  override fun
put(key: K, value: V): V? = map.put(key, value)\n  override fun remove(key: K): V? = map.remove(key)\n
override fun putAll(from: Map<out K, V>) = map.putAll(from)\n  override fun clear() = map.clear()\n\n  override
fun getOrDefault(key: K): V = map.getOrNull(key, { default(key) })}\n}\n\n"/*\n * Copyright
2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\nimport kotlin.random.Random\n\n/**\n * Removes a single instance of the specified element
from this\n * collection, if it is present.\n * \n * Allows to overcome type-safety restriction of `remove` that requires
to pass an element of type `E`. \n * \n
* @return `true` if the element has been successfully removed; `false` if it was not present in the collection.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes T> MutableCollection<out
T>.remove(element: T): Boolean =\n  @Suppress("UNCHECKED_CAST") (this as
MutableCollection<T>).remove(element)\n\n/**\n * Removes all of this collection's elements that are also
contained in the specified collection.\n * \n * Allows to overcome type-safety restriction of `removeAll` that requires
to pass a collection of type `Collection<E>`. \n * \n
* @return `true` if any of the specified elements was removed
from the collection, `false` if the collection was not modified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun
<@kotlin.internal.OnlyInputTypes T> MutableCollection<out T>.removeAll(elements: Collection<T>): Boolean =\n
  @Suppress("UNCHECKED_CAST") (this as MutableCollection<T>).removeAll(elements)\n\n/**\n *
Retains only the elements in this collection
that are contained in the specified collection.\n * \n * Allows to overcome type-safety restriction of `retainAll` that
requires to pass a collection of type `Collection<E>`. \n * \n
* @return `true` if any element was removed from the
collection, `false` if the collection was not modified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun
<@kotlin.internal.OnlyInputTypes T> MutableCollection<out T>.retainAll(elements: Collection<T>): Boolean =\n
  @Suppress("UNCHECKED_CAST") (this as MutableCollection<T>).retainAll(elements)\n\n/**\n * Adds the
specified [element] to this mutable collection.\n * \n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
MutableCollection<in T>.plusAssign(element: T) {\n  this.add(element)\n}\n\n/**\n * Adds all elements of the
given [elements] collection to this mutable collection.\n * \n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
<T> MutableCollection<in T>.plusAssign(elements: Iterable<T>) {\n  this.addAll(elements)\n}\n\n/**\n

```



```

* Adds all elements of the given [elements] array to this mutable collection.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in T>.plusAssign(elements:
Array<T>) {\n    this.addAll(elements)\n}\n\n/**\n * Adds all elements of the given [elements] sequence to this
mutable collection.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in
T>.plusAssign(elements: Sequence<T>) {\n    this.addAll(elements)\n}\n\n/**\n * Removes a single instance of the
specified [element] from this mutable collection.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
MutableCollection<in T>.minusAssign(element: T) {\n    this.remove(element)\n}\n\n/**\n * Removes all elements
contained in the given [elements] collection from this mutable collection.\n *\n@kotlin.internal.InlineOnly\npublic
inline operator fun <T> MutableCollection<in T>.minusAssign(elements: Iterable<T>) {\n
this.removeAll(elements)\n}\n\n/**\n * Removes
all elements contained in the given [elements] array from this mutable collection.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in T>.minusAssign(elements:
Array<T>) {\n    this.removeAll(elements)\n}\n\n/**\n * Removes all elements contained in the given [elements]
sequence from this mutable collection.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
MutableCollection<in T>.minusAssign(elements: Sequence<T>) {\n    this.removeAll(elements)\n}\n\n/**\n * Adds
all elements of the given [elements] collection to this [MutableCollection].\n *\npublic fun <T>
MutableCollection<in T>.addAll(elements: Iterable<T>): Boolean {\n    when (elements) {\n        is Collection ->
return addAll(elements)\n        else -> {\n            var result: Boolean = false\n            for (item in elements)\n
if (add(item)) result = true\n            return result\n        }\n    }\n}\n\n/**\n * Adds all elements of the given
[elements] sequence to this [MutableCollection].\n *\npublic fun <T> MutableCollection<in T>.addAll(elements:
Sequence<T>): Boolean {\n    var result: Boolean = false\n    for (item in elements) {\n        if (add(item)) result =
true\n    }\n    return result\n}\n\n/**\n * Adds all elements of the given [elements] array to this
[MutableCollection].\n *\npublic fun <T> MutableCollection<in T>.addAll(elements: Array<out T>): Boolean {\n
return addAll(elements.asList())\n}\n\n/**\n * Removes all elements from this [MutableCollection] that are also
contained in the given [elements] collection.\n *\npublic fun <T> MutableCollection<in T>.removeAll(elements:
Iterable<T>): Boolean {\n    return removeAll(elements.convertToSetForSetOperationWith(this))\n}\n\n/**\n *
Removes all elements from this [MutableCollection] that are also contained in the given [elements] sequence.\n
*\npublic fun <T> MutableCollection<in T>.removeAll(elements: Sequence<T>): Boolean {\n    val set =
elements.convertToSetForSetOperation()\n
return set.isNotEmpty() && removeAll(set)\n}\n\n/**\n * Removes all elements from this [MutableCollection]
that are also contained in the given [elements] array.\n *\npublic fun <T> MutableCollection<in
T>.removeAll(elements: Array<out T>): Boolean {\n    return elements.isNotEmpty() &&
removeAll(elements.convertToSetForSetOperation())\n}\n\n/**\n * Retains only elements of this
[MutableCollection] that are contained in the given [elements] collection.\n *\npublic fun <T>
MutableCollection<in T>.retainAll(elements: Iterable<T>): Boolean {\n    return
retainAll(elements.convertToSetForSetOperationWith(this))\n}\n\n/**\n * Retains only elements of this
[MutableCollection] that are contained in the given [elements] array.\n *\npublic fun <T> MutableCollection<in
T>.retainAll(elements: Array<out T>): Boolean {\n    if (elements.isNotEmpty())\n        return
retainAll(elements.convertToSetForSetOperation())\n    else\n        return retainNothing()\n}\n\n/**\n
* Retains only elements of this [MutableCollection] that are contained in the given [elements] sequence.\n
*\npublic fun <T> MutableCollection<in T>.retainAll(elements: Sequence<T>): Boolean {\n    val set =
elements.convertToSetForSetOperation()\n    if (set.isNotEmpty())\n        return retainAll(set)\n    else\n        return
retainNothing()\n}\n\nprivate fun MutableCollection<*>.retainNothing(): Boolean {\n    val result = isEmpty()\n
clear()\n    return result\n}\n\n/**\n * Removes all elements from this [MutableIterable] that match the given
[predicate].\n *\n * @return `true` if any element was removed from this collection, or `false` when no elements
were removed and collection was not modified.\n *\npublic fun <T> MutableIterable<T>.removeAll(predicate: (T)
-> Boolean): Boolean = filterInPlace(predicate, true)\n\n/**\n * Retains only elements of this [MutableIterable] that

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match the given [predicate].\n * \n * @return `true` if any element was removed from this collection,
or `false` when all elements were retained and collection was not modified.\n * \n public fun <T>
MutableIterable<T>.retainAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate, false)\n\nprivate fun
<T> MutableIterable<T>.filterInPlace(predicate: (T) -> Boolean, predicateResultToRemove: Boolean): Boolean {\n
var result = false\n with(iterator()) {\n while (hasNext())\n if (predicate(next()) ==
predicateResultToRemove) {\n remove()\n result = true\n }\n }\n return
result\n}\n}\n\n/**\n * Removes the element at the specified [index] from this list.\n * In Kotlin one should use the
[MutableList.removeAt] function instead.\n * \n @Deprecated("Use removeAt(index) instead.",
ReplaceWith("removeAt(index)"), level = DeprecationLevel.ERROR)\n @kotlin.internal.InlineOnly\n public inline
fun <T> MutableList<T>.remove(index: Int): T = removeAt(index)\n\n/**\n * Removes the first element from this
mutable list
and returns that removed element, or throws [NoSuchElementException] if this list is empty.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun <T>
MutableList<T>.removeFirst(): T = if (isEmpty()) throw NoSuchElementException("List is empty.") else
removeAt(0)\n\n/**\n * Removes the first element from this mutable list and returns that removed element, or
returns `null` if this list is empty.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun <T>
MutableList<T>.removeFirstOrNull(): T? = if (isEmpty()) null else removeAt(0)\n\n/**\n * Removes the last
element from this mutable list and returns that removed element, or throws [NoSuchElementException] if this list is
empty.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun <T>
MutableList<T>.removeLast(): T = if (isEmpty()) throw NoSuchElementException("List is empty.") else
removeAt(lastIndex)\n\n/**\n * Removes the last element
from this mutable list and returns that removed element, or returns `null` if this list is empty.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun <T>
MutableList<T>.removeLastOrNull(): T? = if (isEmpty()) null else removeAt(lastIndex)\n\n/**\n * Removes all
elements from this [MutableList] that match the given [predicate].\n * \n * @return `true` if any element was
removed from this collection, or `false` when no elements were removed and collection was not modified.\n
*\n public fun <T> MutableList<T>.removeAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate,
true)\n\n/**\n * Retains only elements of this [MutableList] that match the given [predicate].\n * \n * @return `true`
if any element was removed from this collection, or `false` when all elements were retained and collection was not
modified.\n * \n public fun <T> MutableList<T>.retainAll(predicate: (T) -> Boolean): Boolean =
filterInPlace(predicate, false)\n\nprivate fun
<T> MutableList<T>.filterInPlace(predicate: (T) -> Boolean, predicateResultToRemove: Boolean): Boolean {\n
if (this !is RandomAccess)\n return (this as MutableIterable<T>).filterInPlace(predicate,
predicateResultToRemove)\n var writeIndex: Int = 0\n for (readIndex in 0..lastIndex) {\n val element =
this[readIndex]\n if (predicate(element) == predicateResultToRemove)\n continue\n\n if (writeIndex
!= readIndex)\n this[writeIndex] = element\n\n writeIndex++\n }\n if (writeIndex < size) {\n for
(removeIndex in lastIndex downTo writeIndex)\n removeAt(removeIndex)\n\n return true\n } else {\n
return false\n }\n}\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\nprivate open class ReversedListReadOnly<out T>(private val delegate: List<T>) :
AbstractList<T>() {\n override val size: Int get() = delegate.size\n override fun get(index: Int): T =
delegate[reverseElementIndex(index)]\n}\n\nprivate class ReversedList<T>(private val delegate: MutableList<T>) :
AbstractMutableList<T>() {\n override val size: Int get() = delegate.size\n override fun get(index: Int): T =
delegate[reverseElementIndex(index)]\n\n override fun clear() = delegate.clear()\n override fun removeAt(index:
Int): T = delegate.removeAt(reverseElementIndex(index))\n\n override fun set(index: Int, element: T): T =

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delegate.set(reverseElementIndex(index), element)\n  override fun add(index: Int, element: T) {\n
delegate.add(reversePositionIndex(index), element)\n  }\n}\n\nprivate fun List<*>.reverseElementIndex(index:
Int) =\n  if (index in 0..lastIndex) lastIndex - index else throw IndexOutOfBoundsException("\nElement
index $index must be in range [${0..lastIndex}].")\n}\n\nprivate fun List<*>.reversePositionIndex(index: Int) =\n  if
(index in 0..size) size - index else throw IndexOutOfBoundsException("\nPosition index $index must be in range
[${0..size}].")\n}\n\n/**\n * Returns a reversed read-only view of the original List.\n * All changes made in the
original list will be reflected in the reversed one.\n * @sample samples.collections.ReversedViews.asReversedList\n
*/\n\npublic fun <T> List<T>.asReversed(): List<T> = ReversedListReadOnly(this)\n\n/**\n * Returns a reversed
mutable view of the original mutable List.\n * All changes made in the original list will be reflected in the reversed
one and vice versa.\n * @sample samples.collections.ReversedViews.asReversedMutableList\n
*/\n\n@kotlin.jvm.JvmName("asReversedMutable")\n\npublic fun <T> MutableList<T>.asReversed():
MutableList<T> = ReversedList(this)\n\n"/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SequencesKt")\n@file:OptIn(ExperimentalTypeInference::class)\n\npackage kotlin.sequences\n\nimport kotlin.coroutines.*\nimport
kotlin.coroutines.intrinsics.*\nimport kotlin.experimental.ExperimentalTypeInference\n\n/**\n * Builds a
[Sequence] lazily yielding values one by one.\n * @see kotlin.sequences.generateSequence\n * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n
*/\n\n@SinceKotlin("1.3")\n\npublic fun <T>
sequence(@BuilderInference block: suspend SequenceScope<T>().() -> Unit): Sequence<T> = Sequence {
iterator(block) }\n\n@SinceKotlin("1.3")\n\n@Deprecated("Use 'sequence { }' function instead.",
ReplaceWith("sequence(builderAction)"), level =
DeprecationLevel.ERROR)\n\n@kotlin.internal.InlineOnly\n\npublic
inline fun <T> buildSequence(@BuilderInference noinline builderAction: suspend SequenceScope<T>().() -> Unit):
Sequence<T> = Sequence { iterator(builderAction) }\n\n/**\n * Builds an [Iterator] lazily yielding values one by
one.\n * @sample samples.collections.Sequences.Building.buildIterator\n * @sample
samples.collections.Iterables.Building.iterable\n
*/\n\n@SinceKotlin("1.3")\n\npublic fun <T>
iterator(@BuilderInference block: suspend SequenceScope<T>().() -> Unit): Iterator<T> {\n  val iterator =
SequenceBuilderIterator<T>()\n  iterator.nextStep = block.createCoroutineUnintercepted(receiver = iterator,
completion = iterator)\n  return iterator\n}\n\n@SinceKotlin("1.3")\n\n@Deprecated("Use 'iterator { }' function
instead.", ReplaceWith("iterator(builderAction)"), level =
DeprecationLevel.ERROR)\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <T> buildIterator(@BuilderInference
noinline builderAction: suspend SequenceScope<T>().() -> Unit):
Iterator<T> = iterator(builderAction)\n\n/**\n * The scope for yielding values of a [Sequence] or an [Iterator],
provides [yield] and [yieldAll] suspension functions.\n * @see sequence\n * @see iterator\n * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n
*/\n\n@RestrictsSuspension\n@SinceKotlin("1.3")\n\npublic abstract class SequenceScope<in T> internal
constructor() {\n  /**\n   * Yields a value to the [Iterator] being built and suspends\n   * until the next value is
requested.\n   * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n   * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n
*/\n   public abstract suspend fun yield(value:
T)\n\n  /**\n   * Yields all values from the `iterator` to the [Iterator] being built\n   * and suspends until all these
values are iterated and the next one is requested.\n   *\n   * The sequence of values returned by the given iterator can be potentially infinite.\n   * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n
*/\n   public abstract suspend fun
yieldAll(iterator: Iterator<T>)\n\n  /**\n   * Yields a collections of values to the [Iterator] being built\n   * and
suspends until all these values are iterated and the next one is requested.\n   *\n   * @sample

```

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samples.collections.Sequences.Building.buildSequenceYieldAll\n    */\n    public suspend fun yieldAll(elements:
Iterable<T>) {\n        if (elements is Collection && elements.isEmpty()) return\n        return
yieldAll(elements.iterator())\n    }\n\n    /**\n     * Yields potentially infinite sequence of values to the [Iterator]
being built\n     * and suspends until all these values are iterated and the next one is requested.\n     *\n     * The
sequence can be potentially infinite.\n     *\n     * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n
    */\n    public suspend fun yieldAll(sequence: Sequence<T>) =
yieldAll(sequence.iterator())\n}\n\n@Deprecated("Use SequenceScope class instead."),
ReplaceWith("SequenceScope<T>"), level = DeprecationLevel.ERROR)\npublic typealias SequenceBuilder<T> =
SequenceScope<T>\n\nprivate typealias State = Int\n\nprivate const val State_NotReady: State = 0\n\nprivate const
val State_ManyNotReady: State = 1\n\nprivate const val State_ManyReady: State = 2\n\nprivate const val State_Ready:
State = 3\n\nprivate const val State_Done: State = 4\n\nprivate const val State_Failed: State = 5\n\nprivate class
SequenceBuilderIterator<T> : SequenceScope<T>(), Iterator<T>, Continuation<Unit> {\n    private var state =
State_NotReady\n    private var nextValue: T? = null\n    private var nextIterator: Iterator<T>? = null\n    var
nextStep: Continuation<Unit>? = null\n\n    override fun hasNext(): Boolean {\n        while (true) {\n            when
(state) {\n                State_NotReady -> {\n                    State_ManyNotReady ->\n                        if (nextIterator!!.hasNext()) {\n                            state =
State_ManyReady\n                            return true\n                        } else {\n                            nextIterator = null\n
}\n                    State_Done -> return false\n                    State_Ready, State_ManyReady -> return true\n                    else ->
throw exceptionalState()\n                }\n                state = State_Failed\n                val step = nextStep!!\n                nextStep =
null\n                step.resume(Unit)\n            }\n\n            override fun next(): T {\n                when (state) {\n                    State_NotReady, State_ManyNotReady -> return nextNotReady()\n                    State_ManyReady -> {\n                        state
= State_ManyNotReady\n                        return nextIterator!!.next()\n                    }\n                    State_Ready -> {\n                        state
= State_NotReady\n                        @Suppress("UNCHECKED_CAST")\n                        val
result = nextValue as T\n                        nextValue = null\n                        return result\n                    }\n                    else -> throw
exceptionalState()\n                }\n            }\n\n            private fun nextNotReady(): T {\n                if (!hasNext()) throw
NoSuchElementException() else return next()\n            }\n\n            private fun exceptionalState(): Throwable = when (state)
{\n                State_Done -> NoSuchElementException()\n                State_Failed -> IllegalStateException("Iterator has
failed.")\n                else -> IllegalStateException("Unexpected state of the iterator: $state")\n            }\n\n            override
suspend fun yield(value: T) {\n                nextValue = value\n                state = State_Ready\n                return
suspendCoroutineUninterceptedOrReturn { c ->\n                    nextStep = c\n                    COROUTINE_SUSPENDED\n                }\n            }\n\n            override suspend fun yieldAll(iterator: Iterator<T>) {\n                if (!iterator.hasNext()) return\n                nextIterator = iterator\n                state = State_ManyReady\n                return suspendCoroutineUninterceptedOrReturn
{ c ->\n                    nextStep = c\n                    COROUTINE_SUSPENDED\n                }\n            }\n\n            // Completion continuation
implementation\n            override fun resumeWith(result: Result<Unit>) {\n                result.getOrThrow() // just rethrow
exception if it is there\n                state = State_Done\n            }\n\n            override val context: CoroutineContext\n                get() =
EmptyCoroutineContext\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\ninternal fun checkWindowSizeStep(size: Int, step:
Int) {\n    require(size > 0 && step > 0) {\n        if (size != step)\n            "Both size $size and step $step must be
greater than zero.\n        else\n            "size $size must be greater than zero.\n    }\n}\n\ninternal fun <T>
Sequence<T>.windowedSequence(size: Int, step:
Int, partialWindows: Boolean, reuseBuffer: Boolean): Sequence<List<T>> {\n    checkWindowSizeStep(size,
step)\n    return Sequence { windowedIterator(iterator(), size, step, partialWindows, reuseBuffer) }\n}\n\ninternal
fun <T> windowedIterator(iterator: Iterator<T>, size: Int, step: Int, partialWindows: Boolean, reuseBuffer:
Boolean): Iterator<List<T>> {\n    if (!iterator.hasNext()) return EmptyIterator\n    return iterator<List<T>> {\n        val
bufferInitialCapacity = size.coerceAtMost(1024)\n        val gap = step - size\n        if (gap >= 0) {\n            var
buffer = ArrayList<T>(bufferInitialCapacity)\n            var skip = 0\n            for (e in iterator) {\n                if (skip >

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0) { skip -- 1; continue }\n          buffer.add(e)\n          if (buffer.size == size) {\n          yield(buffer)\n          if (reuseBuffer) buffer.clear() else buffer = ArrayList(size)\n          skip = gap\n          }\n}\n\n    if (buffer.isEmpty()) {\n    if (partialWindows || buffer.size == size) yield(buffer)\n    }\n} else {\n    var buffer = RingBuffer<T>(bufferInitialCapacity)\n    for (e in iterator) {\n    buffer.add(e)\n    if (buffer.isFull()) {\n    if (buffer.size < size) { buffer =\n    buffer.expanded(maxCapacity = size); continue }\n    yield(if (reuseBuffer) buffer else\n    ArrayList(buffer))\n    buffer.removeFirst(step)\n    }\n    if (partialWindows) {\n    while (buffer.size > step) {\n    yield(if (reuseBuffer) buffer else ArrayList(buffer))\n    buffer.removeFirst(step)\n    }\n    if (buffer.isEmpty()) yield(buffer)\n    }\n}\n}\n\ninternal class MovingSubList<out E>(private val list: List<E>) : AbstractList<E>(), RandomAccess {\nprivate\n    var fromIndex: Int = 0\n    private var _size: Int = 0\n\n    fun move(fromIndex: Int, toIndex: Int) {\n    checkRangeIndexes(fromIndex, toIndex, list.size)\n    this.fromIndex = fromIndex\n    this._size = toIndex -\n    fromIndex\n    }\n\n    override fun get(index: Int): E {\n    checkElementIndex(index, _size)\n    return\n    list[fromIndex + index]\n    }\n\n    override val size: Int get() = _size\n}\n\n/**\n * Provides ring buffer\n implementation.\n * Buffer overflow is not allowed so [add] doesn't overwrite tail but raises an exception.\n */\nprivate class RingBuffer<T>(private val buffer: Array<Any?>, filledSize: Int) : AbstractList<T>(),\nRandomAccess {\n    init {\n    require(filledSize >= 0) { \"ring buffer filled size should not be negative but it is\n    $filledSize\" }\n    require(filledSize <= buffer.size) { \"ring buffer filled size: $filledSize cannot be larger than\n    the buffer size: ${buffer.size}\" }\n    }\n\n    constructor(capacity: Int)\n    : this(arrayOfNulls<Any?>(capacity), 0)\n\n    private val capacity = buffer.size\n    private var startIndex: Int =\n    0\n\n    override var size: Int = filledSize\n    private set\n\n    override fun get(index: Int): T {\n    checkElementIndex(index, size)\n    @Suppress(\"UNCHECKED_CAST\")\n    return\n    buffer[startIndex.forward(index)] as T\n    }\n\n    fun isFull() = size == capacity\n\n    override fun iterator():\n    Iterator<T> = object : AbstractIterator<T>() {\n    private var count = size\n    private var index = startIndex\n\n    override fun computeNext() {\n    if (count == 0) {\n    done()\n    } else {\n    @Suppress(\"UNCHECKED_CAST\")\n    setNext(buffer[index] as T)\n    index =\n    index.forward(1)\n    count--\n    }\n    }\n\n    @Suppress(\"UNCHECKED_CAST\")\n    override fun <T> toArray(array: Array<T>): Array<T> {\n    val result: Array<T?> =\n    if (array.size < this.size) array.copyOf(this.size) else array as Array<T?>\n\n    val size = this.size\n    var widx = 0\n    var idx = startIndex\n    while (widx < size && idx < capacity) {\n    result[widx] =\n    buffer[idx] as T\n    widx++\n    idx++\n    }\n\n    idx = 0\n    while (widx < size) {\n    result[widx] = buffer[idx] as T\n    widx++\n    idx++\n    }\n\n    if (result.size > this.size)\n    result[this.size] = null\n\n    return result as Array<T>\n    }\n\n    override fun toArray(): Array<Any?> {\n    return toArray(arrayOfNulls(size))\n    }\n\n    /**\n     * Creates a new ring buffer with the capacity equal to the\n     minimum of [maxCapacity] and 1.5 * [capacity].\n     * The returned ring buffer contains the same elements as this\n     ring buffer.\n     */\n    fun expanded(maxCapacity: Int): RingBuffer<T> {\n    val newCapacity = (capacity +\n    (capacity shr 1) + 1).coerceAtMost(maxCapacity)\n\n    val newBuffer = if (startIndex == 0) buffer.copyOf(newCapacity) else toArray(arrayOfNulls(newCapacity))\n\n    return RingBuffer(newBuffer, size)\n    }\n\n    /**\n     * Add [element] to the buffer or fail with\n     [IllegalStateException] if no free space available in the buffer\n     */\n    fun add(element: T) {\n    if (isFull()) {\n    throw IllegalStateException(\"ring buffer is full\")\n    }\n\n    buffer[startIndex.forward(size)] =\n    element\n    size++\n    }\n\n    /**\n     * Removes [n] first elements from the buffer or fails with\n     [IllegalArgumentException] if not enough elements in the buffer to remove\n     */\n    fun removeFirst(n: Int) {\n    require(n >= 0) { \"n shouldn't be negative but it is $n\" }\n    require(n <= size) { \"n shouldn't be greater than\n    the buffer size: n = $n, size = $size\" }\n\n    if (n > 0) {\n    val start = startIndex\n    val end =\n    start.forward(n)\n\n    if

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(start > end) {\n        buffer.fill(null, start, capacity)\n        buffer.fill(null, 0, end)\n    } else {\n        buffer.fill(null, start, end)\n    }\n    startIndex = end\n    size -= n\n}\n}\n\n@Suppress("NOTHING_TO_INLINE")\n private inline fun Int.forward(n: Int): Int = (this + n) %
capacity\n}\n", "/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.collections\n\n// UByteArray
=====
\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: UByteArray, left: Int, right: Int): Int {\n    var i = left\n    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n            i++\n        while
(array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n            array[i] = array[j]\n
array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun
quickSort(\n    array: UByteArray, left: Int, right: Int) {\n    val index = partition(array, left, right)\n    if (left < index
- 1)\n        quickSort(array, left, index - 1)\n    if (index < right)\n        quickSort(array, index, right)\n}\n\n//
UShortArray
=====
\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: UShortArray, left: Int, right: Int): Int {\n    var i = left\n
    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n
            i++\n        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n
            array[i] =
array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return
i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UShortArray, left: Int, right: Int) {\n    val
index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index <
right)\n        quickSort(array, index, right)\n}\n\n// UIntArray
=====
\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: UIntArray, left: Int, right: Int): Int {\n    var i = left\n
    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n
            i++\n        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n
            array[i] =
array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return
i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UIntArray, left: Int, right: Int) {\n    val
index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index <
right)\n        quickSort(array, index, right)\n}\n\n// ULongArray
=====
\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: ULongArray, left: Int, right: Int): Int {\n    var i = left\n
    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n
            i++\n        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n
            array[i] =
array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return
i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: ULongArray, left: Int, right: Int) {\n    val index =
partition(array,
left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index < right)\n        quickSort(array,
index, right)\n}\n\n// Interfaces
=====
\n/*\n
* Sorts the given array using qsort algorithm.\n */\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:
UByteArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex -
1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UShortArray, fromIndex: Int, toIndex: Int) =
quickSort(array, fromIndex, toIndex - 1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UIntArray,
fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex -
1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: ULongArray, fromIndex: Int, toIndex: Int) =
quickSort(array, fromIndex, toIndex - 1)", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of

```

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```

package kotlin.internal.InlineOnly
 * Compares this object with the specified object
for order. Returns zero if this object is equal
 * to the specified [other] object, a negative number if it's less than
[other], or a positive number
 * if it's greater than [other].
 * This function delegates to
[Comparable.compareTo] and allows to call it in infix form.
 *
@InlineOnly
@SinceKotlin("1.6")
public inline infix fun <T> Comparable<T>.compareTo(other: T): Int =
    this.compareTo(other)
 * Copyright
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by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
package
kotlin.contracts
import kotlin.internal.ContractsDsl
import kotlin.internal.InlineOnly
 * This marker
distinguishes the
experimental contract declaration API and is used to opt-in for that feature
 * when declaring contracts of user
functions.
 * Any usage of a declaration annotated with `@ExperimentalContracts` must be accepted either
by
 * annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalContracts::class)`,
 * or by
using the compiler argument `-opt-in=kotlin.contracts.ExperimentalContracts`.
 *
@Retention(AnnotationRetention.BINARY)
@SinceKotlin("1.3")
@RequiresOptIn
@MustBeDocumente
d
public annotation class ExperimentalContracts
 * Provides a scope, where the functions of the contract
DSL, such as [returns], [callsInPlace], etc.,
 * can be used to describe the contract of a function.
 * This type is
used as a receiver type of the lambda function passed to the [contract] function.
 * @see contract
 *
@ContractsDsl
@ExperimentalContracts
@SinceKotlin("1.3")
public interface ContractBuilder {
 *
 * Describes a situation
when a function returns normally, without any exceptions thrown.
 *
 * Use [SimpleEffect.implies] function
to describe a conditional effect that happens in such case.
 *
 *
 * // @sample
samples.contracts.returnsContract
 @ContractsDsl public fun returns(): Returns
 *
 * Describes a
situation when a function returns normally with the specified return [value].
 *
 * The possible values of
[value] are limited to `true`, `false` or `null`.
 *
 * Use [SimpleEffect.implies] function to describe a
conditional effect that happens in such case.
 *
 *
 * // @sample samples.contracts.returnsTrueContract
// @sample samples.contracts.returnsFalseContract
// @sample samples.contracts.returnsNullContract
@ContractsDsl public fun returns(value: Any?): Returns
 *
 * Describes a situation when a function
returns normally with any value that is not `null`.
 *
 * Use [SimpleEffect.implies] function
to describe a conditional effect that happens in such case.
 *
 *
 * // @sample
samples.contracts.returnsNotNullContract
 @ContractsDsl public fun returnsNotNull(): ReturnsNotNull
 *
 * Specifies that the function parameter [lambda] is invoked in place.
 *
 * This contract specifies
that:
 *
 * 1. the function [lambda] can only be invoked during the call of the owner function,
 * and it won't be
invoked after that owner function call is completed;
 *
 * 2. (optionally) the function [lambda] is invoked the
amount of times specified by the [kind] parameter,
 * see the [InvocationKind] enum for possible values.
 *
 * A function declaring the `callsInPlace` effect must be _inline_.
 *
 *
 * // @sample
samples.contracts.callsInPlaceAtMostOnceContract
 * @sample
samples.contracts.callsInPlaceAtLeastOnceContract
 * @sample
samples.contracts.callsInPlaceExactlyOnceContract
 * @sample
samples.contracts.callsInPlaceUnknownContract
 *
 *
 * @ContractsDsl public fun <R> callsInPlace(lambda: Function<R>, kind: InvocationKind =
InvocationKind.UNKNOWN): CallsInPlace
 *
 * Specifies how many times a function invokes its function
parameter in place.
 *
 * See [ContractBuilder.callsInPlace] for the details of the call-in-place function contract.
 *
 *
 *
 *
@ContractsDsl
@ExperimentalContracts
@SinceKotlin("1.3")
public enum class InvocationKind {
 *
 * A function parameter will be invoked one time or not invoked at all.
 *
 *
 * // @sample
samples.contracts.callsInPlaceAtMostOnceContract
 @ContractsDsl AT_MOST_ONCE,
 *
 * A
function parameter will be invoked one or more times.
 *
 *
 * // @sample
samples.contracts.callsInPlaceAtLeastOnceContract
 @ContractsDsl AT_LEAST_ONCE,
 *
 * A

```

```

function parameter will be invoked exactly one time.\n * \n * ^\n // @sample
samples.contracts.callsInPlaceExactlyOnceContract\n
    @ContractsDsl EXACTLY_ONCE,\n\n /**\n * A function parameter is called in place, but it's unknown how
many times it can be called.\n * \n * ^\n // @sample samples.contracts.callsInPlaceUnknownContract\n
@ContractsDsl UNKNOWN\n}\n\n/**\n * Specifies the contract of a function.\n * \n * The contract description
must be at the beginning of a function and have at least one effect.\n * \n * Only the top-level functions can have a
contract for now.\n * \n * @param builder the lambda where the contract of a function is described with the help of
the [ContractBuilder] members.\n * \n * ^\n/* @sample samples.contracts.returnsContract\n* @sample
samples.contracts.returnsTrueContract\n* @sample samples.contracts.returnsFalseContract\n* @sample
samples.contracts.returnsNullContract\n* @sample samples.contracts.returnsNotNullContract\n* @sample
samples.contracts.callsInPlaceAtMostOnceContract\n* @sample
samples.contracts.callsInPlaceAtLeastOnceContract\n* @sample
samples.contracts.callsInPlaceExactlyOnceContract\n*
@sample
samples.contracts.callsInPlaceUnknownContract\n*\n\n@ContractsDsl\n@ExperimentalContracts\n@InlineOnly\n@
SinceKotlin("1.3")\n\n@Suppress("UNUSED_PARAMETER")\n\npublic inline fun contract(builder:
ContractBuilder.() -> Unit) { }\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n * \n\npackage kotlin.coroutines\n\n/**\n * Marks coroutine context element that
intercepts coroutine continuations.\n * The coroutines framework uses [ContinuationInterceptor.Key] to retrieve the
interceptor and\n * intercepts all coroutine continuations with [interceptContinuation] invocations.\n * \n *
[ContinuationInterceptor] behaves like a [polymorphic element][AbstractCoroutineContextKey], meaning that\n *
its implementation delegates [get][CoroutineContext.Element.get] and
[minusKey][CoroutineContext.Element.minusKey]\n
* to [getPolymorphicElement] and [minusPolymorphicKey] respectively.\n * [ContinuationInterceptor] subtypes
can be extracted from the coroutine context using either [ContinuationInterceptor.Key]\n * or subtype key if it
extends [AbstractCoroutineContextKey].\n * \n\n@SinceKotlin("1.3")\n\npublic interface ContinuationInterceptor :
CoroutineContext.Element {\n /**\n * The key that defines *the* context interceptor.\n * \n\n companion
object Key : CoroutineContext.Key<ContinuationInterceptor>\n\n /**\n * Returns continuation that wraps the
original [continuation], thus intercepting all resumptions.\n * This function is invoked by coroutines framework
when needed and the resulting continuations are\n * cached internally per each instance of the original
[continuation].\n * \n * This function may simply return original [continuation] if it does not want to intercept
this particular continuation.\n * \n * When the original [continuation]
completes, coroutine framework invokes [releaseInterceptedContinuation]\n * with the resulting continuation if it
was intercepted, that is if `interceptContinuation` had previously\n * returned a different continuation instance.\n
* \n\n public fun <T> interceptContinuation(continuation: Continuation<T>): Continuation<T>\n\n /**\n *
Invoked for the continuation instance returned by [interceptContinuation] when the original\n * continuation
completes and will not be used anymore. This function is invoked only if [interceptContinuation]\n * had returned
a different continuation instance from the one it was invoked with.\n * \n * Default implementation does
nothing.\n * \n * @param continuation Continuation instance returned by this interceptor's
[interceptContinuation] invocation.\n * \n\n public fun releaseInterceptedContinuation(continuation:
Continuation<*>) {\n /** do nothing by default *\n } }\n\n public override operator
fun <E : CoroutineContext.Element> get(key: CoroutineContext.Key<E>): E? {\n // getPolymorphicKey
specialized for ContinuationInterceptor key\n @OptIn(ExperimentalStdlibApi::class)\n if (key is
AbstractCoroutineContextKey<*, *>) {\n @Suppress("UNCHECKED_CAST")\n return if
(key.isSubKey(this.key)) key.tryCast(this) as? E else null\n } }\n @Suppress("UNCHECKED_CAST")\n
return if (ContinuationInterceptor === key) this as E else null\n } }\n\n public override fun minusKey(key:
CoroutineContext.Key<*>): CoroutineContext {\n // minusPolymorphicKey specialized for

```



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ContinuationInterceptor key\n    @OptIn(ExperimentalStdlibApi::class)\n    if (key is
AbstractCoroutineContextKey<*, *>) {\n        return if (key.isSubKey(this.key) && key.tryCast(this) != null)
EmptyCoroutineContext else this\n    }\n    return if (ContinuationInterceptor === key)
EmptyCoroutineContext else this\n } \n} \n", "/*\n
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.coroutines\n\n/**\n * Persistent context for the coroutine. It is an indexed set of [Element] instances.\n * An
indexed set is a mix between a set and a map.\n * Every element in this set has a unique [Key].\n
*\n * @SinceKotlin("1.3")\n */\n public interface CoroutineContext {\n    /**\n     * Returns the element with the given
[key] from this context or `null`.\n     */\n    public operator fun <E : Element> get(key: Key<E>): E?\n\n    /**\n     * Accumulates entries of this context starting with [initial] value and applying [operation]\n     * from left to right to
current accumulator value and each element of this context.\n     */\n    public fun <R> fold(initial: R, operation: (R,
Element) -> R): R\n\n    /**\n     * Returns a context containing elements from this
context and elements from other [context].\n     * The elements from this context with the same key as in the other
one are dropped.\n     */\n    public operator fun plus(context: CoroutineContext): CoroutineContext =\n        if
(context === EmptyCoroutineContext) this else // fast path -- avoid lambda creation\n            context.fold(this) {
acc, element ->\n                val removed = acc.minusKey(element.key)\n                if (removed ===
EmptyCoroutineContext) element else {\n                    // make sure interceptor is always last in the context (and thus
is fast to get when present)\n                    val interceptor = removed[ContinuationInterceptor]\n                    if
(interceptor == null) CombinedContext(removed, element) else {\n                        val left =
removed.minusKey(ContinuationInterceptor)\n                        if (left === EmptyCoroutineContext)\n                            CombinedContext(element, interceptor) else\n                                CombinedContext(CombinedContext(left,
element), interceptor)\n                    }\n                }\n            }\n\n    /**\n     * Returns a context containing elements
from this context, but without an element with\n     * the specified [key].\n     */\n    public fun minusKey(key:
Key<*>): CoroutineContext\n\n    /**\n     * Key for the elements of [CoroutineContext]. [E] is a type of element
with this key.\n     */\n    public interface Key<E : Element>\n\n    /**\n     * An element of the [CoroutineContext].
An element of the coroutine context is a singleton context by itself.\n     */\n    public interface Element :
CoroutineContext {\n        /**\n         * A key of this coroutine context element.\n         */\n        public val key:
Key<*>\n\n        public override operator fun <E : Element> get(key: Key<E>): E? =\n            @Suppress("UNCHECKED_CAST")\n                if (this.key == key) this as E else null\n\n        public override fun
<R> fold(initial: R, operation: (R, Element) ->
R): R =\n            operation(initial, this)\n\n        public override fun minusKey(key: Key<*>): CoroutineContext =\n            if (this.key == key) EmptyCoroutineContext else this\n    }\n} \n", "/*\n
* Copyright 2010-2020 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.CoroutineContext.Element\nimport kotlin.coroutines.CoroutineContext.Key\n\n/**\n * Base class
for [CoroutineContext.Element] implementations.\n * @SinceKotlin("1.3")\n */\n public abstract class
AbstractCoroutineContextElement(public override val key: Key<*>) : Element\n\n/**\n * Base class for
[CoroutineContext.Key] associated with polymorphic [CoroutineContext.Element] implementation.\n *
Polymorphic element implementation implies delegating its [get][Element.get] and
[minusKey][Element.minusKey]\n * to [getPolymorphicElement]
and [minusPolymorphicKey] respectively.\n * Polymorphic elements can be extracted from the coroutine
context using both element key and its supertype key.\n * Example of polymorphic elements:\n * ```\n * open class
BaseElement : CoroutineContext.Element {\n *     companion object Key : CoroutineContext.Key<BaseElement>\n *
override val key: CoroutineContext.Key<*> get() = Key\n *     // It is important to use getPolymorphicKey and
minusPolymorphicKey\n *     override fun <E : CoroutineContext.Element> get(key: CoroutineContext.Key<E>):
E? = getPolymorphicElement(key)\n *     override fun minusKey(key: CoroutineContext.Key<*>):
CoroutineContext = minusPolymorphicKey(key)\n * }\n * class DerivedElement : BaseElement() {\n *

```

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companion object Key : AbstractCoroutineContextKey<BaseElement, DerivedElement>(BaseElement, { it as?
DerivedElement })\n * }\n * // Now it is possible to query both `BaseElement` and `DerivedElement`\n *
someContext[BaseElement] // Returns BaseElement?,
non-null both for BaseElement and DerivedElement instances\n * someContext[DerivedElement] // Returns
DerivedElement?, non-null only for DerivedElement instance\n * ```\n * @param B base class of a polymorphic
element\n * @param baseKey an instance of base key\n * @param E element type associated with the current key\n
* @param safeCast a function that can safely cast abstract [CoroutineContext.Element] to the concrete [E] type\n *
and return the element if it is a subtype of [E] or `null` otherwise.\n
*\n@SinceKotlin("1.3")\n@ExperimentalStdlibApi\npublic abstract class AbstractCoroutineContextKey<B :
Element, E : B>(\n baseKey: Key<B>,\n private val safeCast: (element: Element) -> E?)\n) : Key<E> {\n
private val topmostKey: Key<*> = if (baseKey is AbstractCoroutineContextKey<*, *>) baseKey.topmostKey else
baseKey\n\n internal fun tryCast(element: Element): E? = safeCast(element)\n internal fun isSubKey(key:
Key<*>): Boolean = key === this || topmostKey
=== key\n}\n\n/**\n * Returns the current element if it is associated with the given [key] in a polymorphic manner
or `null` otherwise.\n * This method returns non-null value if either [Element.key] is equal to the given [key] or if
the [key] is associated\n * with [Element.key] via [AbstractCoroutineContextKey].\n * See
[AbstractCoroutineContextKey] for the example of usage.\n
*\n@SinceKotlin("1.3")\n@ExperimentalStdlibApi\npublic fun <E : Element>
Element.getPolymorphicElement(key: Key<E>): E? {\n if (key is AbstractCoroutineContextKey<*, *>) {\n
@Suppress("UNCHECKED_CAST")\n return if (key.isSubKey(this.key)) key.tryCast(this) as? E else null\n
}\n @Suppress("UNCHECKED_CAST")\n return if (this.key === key) this as E else null\n}\n\n/**\n *
Returns empty coroutine context if the element is associated with the given [key] in a polymorphic manner\n * or
`null` otherwise.\n * This method returns empty context if either [Element.key] is equal to the
given [key] or if the [key] is associated\n * with [Element.key] via [AbstractCoroutineContextKey].\n * See
[AbstractCoroutineContextKey] for the example of usage.\n
*\n@SinceKotlin("1.3")\n@ExperimentalStdlibApi\npublic fun Element.minusPolymorphicKey(key: Key<*>):
CoroutineContext {\n if (key is AbstractCoroutineContextKey<*, *>) {\n return if (key.isSubKey(this.key)
&& key.tryCast(this) != null) EmptyCoroutineContext else this\n }\n return if (this.key === key)
EmptyCoroutineContext else this\n}\n\n/**\n * An empty coroutine context.\n *\n@SinceKotlin("1.3")\npublic
object EmptyCoroutineContext : CoroutineContext, Serializable {\n private const val serialVersionUID: Long =
0\n private fun readResolve(): Any = EmptyCoroutineContext\n\n public override fun <E : Element> get(key:
Key<E>): E? = null\n public override fun <R> fold(initial: R, operation: (R, Element) -> R): R = initial\n
public override fun plus(context: CoroutineContext): CoroutineContext
= context\n public override fun minusKey(key: Key<*>): CoroutineContext = this\n public override fun
hashCode(): Int = 0\n public override fun toString(): String = "EmptyCoroutineContext"\n}\n\n//-----
- internal impl -----
\n\n// this class is not exposed, but is hidden inside implementations\n// this is a left-
biased list, so that `plus` works naturally\n@SinceKotlin("1.3")\ninternal class CombinedContext(\n private val
left: CoroutineContext,\n private val element: Element\n) : CoroutineContext, Serializable {\n\n override fun <E
: Element> get(key: Key<E>): E? {\n var cur = this\n while (true) {\n cur.element[key]?.let { return
it }\n val next = cur.left\n if (next is CombinedContext) {\n cur = next\n } else {\n
return next[key]\n }\n }\n\n public override fun <R> fold(initial: R, operation: (R, Element) -
> R):
R =\n operation(left.fold(initial, operation), element)\n\n public override fun minusKey(key: Key<*>):
CoroutineContext {\n element[key]?.let { return left }\n val newLeft = left.minusKey(key)\n return
when {\n newLeft === left -> this\n newLeft === EmptyCoroutineContext -> element\n else ->
CombinedContext(newLeft, element)\n }\n }\n\n private fun size(): Int {\n var cur = this\n var size
= 2\n while (true) {\n cur = cur.left as? CombinedContext ?: return size\n size++\n }\n }\n\n private fun
contains(element: Element): Boolean =\n get(element.key) == element\n\n private fun

```

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containsAll(context: CombinedContext): Boolean {
    var cur = context
    while (true) {
        if (!contains(cur.element)) return false
        val next = cur.left
        if (next is CombinedContext) {
            cur = next
        }
    }
    else {
        return contains(next as Element)
    }
}

override fun equals(other: Any?): Boolean =
    this === other || other is CombinedContext && other.size() == size() &&
    other.containsAll(this)

override fun hashCode(): Int = left.hashCode() + element.hashCode()

override fun toString(): String =
    "[" + fold("") { acc, element ->
        if (acc.isEmpty()) element.toString() else
        "$acc, $element"
    } + "]"

private fun writeReplace(): Any {
    val n = size()
    val elements =
        arrayOfNulls<CoroutineContext>(n)
    var index = 0
    fold(Unit) { _, element -> elements[index++] =
        element }
    check(index == n)
    @Suppress("UNCHECKED_CAST")
    return Serialized(elements
        as Array<CoroutineContext>)
}

private class Serialized(val elements: Array<CoroutineContext>) :
    Serializable {
    companion object {
        private const val serialVersionUID:
            Long = 0L
    }

    private fun readResolve(): Any = elements.fold(EmptyCoroutineContext,
        CoroutineContext::plus)
}

/*
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 * Language contributors.
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 * license/LICENSE.txt file.
 */

@file:kotlin.jvm.JvmName("IntrinsicsKt")
@file:kotlin.jvm.JvmMultifileClass
package
kotlin.coroutines.intrinsics
import kotlin.contracts.*
import kotlin.coroutines.*
import
kotlin.internal.InlineOnly

/**
 * Obtains the current continuation instance inside suspend functions and either
 * suspends currently running coroutine or returns result immediately without suspension.
 * If the [block] returns the special [COROUTINE_SUSPENDED] value, it means that suspend function did suspend the execution
 * and will not return any result immediately. In this case, the [Continuation] provided to the [block] shall
 * be resumed by invoking [Continuation.resumeWith] at some moment in the future when the result becomes
 * available to resume the computation. Otherwise, the return value of the [block] must have a type assignable
 * to [T] and represents the result of this suspend function. It means that the execution was not suspended and the
 * [Continuation] provided to the [block] shall not be invoked. As the result type of the [block] is declared as
 * `Any?` and cannot be correctly type-checked, its proper return type remains on the conscience of the suspend
 * function's author. Invocation of [Continuation.resumeWith] resumes coroutine directly in the invoker's
 * thread without going through the [ContinuationInterceptor] that might be present in the coroutine's
 * [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established.
 * [Continuation.intercepted] can be used to acquire the intercepted continuation. Note
 * that it is not recommended to call either [Continuation.resume] nor [Continuation.resumeWithException] functions
 * synchronously in the same stackframe where suspension function is run. Use [suspendCoroutine] as a safer way
 * to obtain current continuation instance.
 */
@SinceKotlin("1.3")
@InlineOnly
@Suppress("UNUSED_PARAMETER",
    "RedundantSuspendModifier")
public suspend inline fun <T>
suspendCoroutineUninterceptedOrReturn(crossinline block: (Continuation<T>) -> Any?): T {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    throw NotImplementedError("Implementation of
suspendCoroutineUninterceptedOrReturn is intrinsic")
}

/**
 * This value is used as a return value of
[suspendCoroutineUninterceptedOrReturn] `block` argument to state that
the execution was suspended and will
not return any result immediately.
**Note: this value should not be used in general code.**
Using it outside
of the context of `suspendCoroutineUninterceptedOrReturn`
function return value (including, but not limited to, storing this value in other properties, returning it from other
functions, etc) can lead to unspecified behavior of the code.
*/
// It is implemented as property with getter to
avoid ProGuard <clinit> problem with multifile IntrinsicsKt class
@SinceKotlin("1.3")
public val
COROUTINE_SUSPENDED: Any get() = CoroutineSingletons.COROUTINE_SUSPENDED
// Using enum
here ensures two important properties:
1. It makes SafeContinuation serializable with all kinds of serialization
frameworks (since all of them natively support enums)
2. It improves debugging experience, since you clearly

```

see toString() value of those objects and what package they come from\n@SinceKotlin("1.3")\n@PublishedApi // This class is Published API via serialized representation of SafeContinuation, don't rename/move\ninternal enum class CoroutineSingletons { COROUTINE_SUSPENDED, UNDECIDED, RESUMED }\n","/*\n * Copyright 2010-2018

JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.experimental\n\n/** Performs a bitwise AND operation between the two values.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.and(other: Byte): Byte = (this.toInt() and other.toInt()).toByte()\n\n/** Performs a bitwise OR operation between the two values.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.or(other: Byte): Byte = (this.toInt() or other.toInt()).toByte()\n\n/** Performs a bitwise XOR operation between the two values.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.xor(other: Byte): Byte = (this.toInt() xor other.toInt()).toByte()\n\n/** Inverts the bits in this value.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Byte.inv(): Byte = (this.toInt().inv()).toByte()\n\n/**

Performs a bitwise AND operation between the two values.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.and(other: Short): Short = (this.toInt() and other.toInt()).toShort()\n\n/** Performs a bitwise OR operation between the two values.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.or(other: Short): Short = (this.toInt() or other.toInt()).toShort()\n\n/** Performs a bitwise XOR operation between the two values.

*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.xor(other: Short): Short = (this.toInt() xor other.toInt()).toShort()\n\n/** Inverts the bits in this value.

\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Short.inv(): Short = (this.toInt().inv()).toShort()\n\n","/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache

2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.experimental\n\n/**\n * The experimental marker for type inference augmenting annotations.\n * Any usage of a declaration annotated with `@ExperimentalTypeInference` must be accepted either by\n * annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalTypeInference::class)`,\n * or by using the compiler argument `-opt-in=kotlin.experimental.ExperimentalTypeInference`.\n */\n@RequiresOptIn(level =

RequiresOptIn.Level.ERROR)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.ANNOTATION_CLASS)\n@SinceKotlin("1.3")\npublic annotation class

ExperimentalTypeInference\n","/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.internal\n\n/** Specifies that the corresponding type should be ignored during type inference.\n

*\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class NoInfer\n\n/** Specifies that the constraint built for the type during type inference should be an equality one.\n

*\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class Exact\n\n/** Specifies that a corresponding member has the lowest priority in overload resolution.\n

*\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class LowPriorityInOverloadResolution\n\n/** Specifies that the corresponding member has the highest priority in overload resolution. Effectively this means that\n * an extension annotated with this annotation will win in overload resolution over a member with the same signature.\n */\n@Target(AnnotationTarget.FUNCTION,

AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class HidesMembers\n\n/** The value of this type parameter should be mentioned in input types (argument types, receiver type or expected type).\n

```

*\n@Target(AnnotationTarget.TYPE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\ninternal
annotation class OnlyInputTypes\n\n/**\n * Specifies that this function should not be called directly without
inlining\n *\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY,
AnnotationTarget.PROPERTY_GETTER,
AnnotationTarget.PROPERTY_SETTER)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class
InlineOnly\n\n/**\n * Specifies that this declaration can have dynamic receiver type.\n
*\n@Target(AnnotationTarget.FUNCTION,
AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class
DynamicExtension\n\n/**\n * The value of this parameter should be a property reference expression (`this::foo`),
referencing a `lateinit` property,\n * the backing
field of which is accessible at the point where the corresponding argument is passed.\n
*\n@Target(AnnotationTarget.VALUE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\n@SinceK
otlin("1.2")\ninternal annotation class AccessibleLateinitPropertyLiteral\n\n/**\n * Specifies that this declaration is
only completely supported since the specified version.\n *\n * The Kotlin compiler of an earlier version is going to
report a diagnostic on usages of this declaration.\n * The diagnostic message can be specified with [message], or via
[errorCode] (takes less space, but might not be immediately clear\n * to the user). The diagnostic severity can be
specified with [level]: WARNING/ERROR mean that either a warning or an error\n * is going to be reported,
HIDDEN means that the declaration is going to be removed from resolution completely.\n *\n * [versionKind]
specifies which version should be compared with the [version] value, when compiling the usage of the annotated
declaration.\n *
Note that prior to 1.2, only [RequireKotlinVersionKind.LANGUAGE_VERSION] was supported, so the Kotlin
compiler before 1.2 is going to\n * treat any [RequireKotlin] as if it requires the language version. Since 1.2, the
Kotlin compiler supports\n * [RequireKotlinVersionKind.LANGUAGE_VERSION],
[RequireKotlinVersionKind.COMPILER_VERSION] and [RequireKotlinVersionKind.API_VERSION].\n * If the
actual value of [versionKind] is something different (e.g. a new version kind, added in future versions of Kotlin),\n *
Kotlin 1.2 is going to ignore this [RequireKotlin] altogether, where as Kotlin before 1.2 is going to treat this as a
requirement\n * on the language version.\n *\n * This annotation is erased at compile time; its arguments are stored
in a more compact form in the Kotlin metadata.\n *\n@Target(AnnotationTarget.CLASS,
AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR,
AnnotationTarget.TYPEALIAS)\n@Retention(AnnotationRetention.SOURCE)\n@Repeatable\n@SinceKotlin("1.
2")\ninternal
annotation class RequireKotlin(\n val version: String,\n val message: String = "",\n val level:
DeprecationLevel = DeprecationLevel.ERROR,\n val versionKind: RequireKotlinVersionKind =
RequireKotlinVersionKind.LANGUAGE_VERSION,\n val errorCode: Int = -1)\n\n/**\n * The kind of the
version that is required by [RequireKotlin].\n *\n@SinceKotlin("1.2")\ninternal enum class
RequireKotlinVersionKind {\n LANGUAGE_VERSION,\n COMPILER_VERSION,\n
API_VERSION,\n}\n\n/**\n * Specifies that this declaration is a part of special DSL, used for constructing
function's contract.\n *\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.2")\ninternal annotation
class ContractsDsl\n\n/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\npackage kotlin.properties\n\nimport kotlin.reflect.KProperty\n\n/**\n
* Standard property delegates.\n *\npublic object Delegates {\n /**\n * Returns a property delegate for a
read/write property with a non-`null` value that is initialized not during\n * object construction time but at a later
time. Trying to read the property before the initial value has been\n * assigned results in an exception.\n *
*\n * @sample samples.properties.Delegates.notNullDelegate\n * \n public fun <T : Any> notNull():
ReadWriteProperty<Any?, T> = NotNullVar()\n\n /**\n * Returns a property delegate for a read/write property
that calls a specified callback function when changed.\n * @param initialValue the initial value of the property.\n
* @param onChange the callback which is called after the change of the property is made. The value of the

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property\n * has already been changed when this callback is invoked.\n * \n * @sample
samples.properties.Delegates.observableDelegate\n * \n public
inline fun <T> observable(initialValue: T, crossinline onChange: (property: KProperty<*>, oldValue: T, newValue:
T) -> Unit):\n    ReadWriteProperty<Any?, T> =\n    object : ObservableProperty<T>(initialValue) {\n
override fun afterChange(property: KProperty<*>, oldValue: T, newValue: T) = onChange(property, oldValue,
newValue)\n    }\n\n /**\n * Returns a property delegate for a read/write property that calls a specified
callback function when changed,\n * allowing the callback to veto the modification.\n * @param initialValue
the initial value of the property.\n * @param onChange the callback which is called before a change to the
property value is attempted.\n * The value of the property hasn't been changed yet, when this callback is
invoked.\n * If the callback returns `true` the value of the property is being set to the new value,\n * and if the
callback returns `false` the new value is discarded and the property remains
its old value.\n * \n * @sample samples.properties.Delegates.vetoableDelegate\n * @sample
samples.properties.Delegates.throwVetoableDelegate\n * \n public inline fun <T> vetoable(initialValue: T,
crossinline onChange: (property: KProperty<*>, oldValue: T, newValue: T) -> Boolean):\n
ReadWriteProperty<Any?, T> =\n    object : ObservableProperty<T>(initialValue) {\n    override fun
beforeChange(property: KProperty<*>, oldValue: T, newValue: T): Boolean = onChange(property, oldValue,
newValue)\n    }\n\n\nprivate class NotNullVar<T : Any>(): ReadWriteProperty<Any?, T> {\n    private var
value: T? = null\n    public override fun getValue(thisRef: Any?, property: KProperty<*>): T {\n    return value
?: throw IllegalStateException("\Property ${property.name} should be initialized before get.")\n    }\n\n    public
override fun setValue(thisRef: Any?, property: KProperty<*>, value: T) {\n    this.value = value\n
}\n}\n\n", /*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n\npackage
kotlin.properties\n\nimport kotlin.reflect.KProperty\n\n/**\n * Base interface that can be used for implementing
property delegates of read-only properties.\n * \n * This is provided only for convenience; you don't have to extend
this interface\n * as long as your property delegate has methods with the same signatures.\n * \n * @param T the
type of object which owns the delegated property.\n * @param V the type of the property value.\n * \n\npublic fun
interface ReadOnlyProperty<in T, out V> {\n    /**\n * Returns the value of the property for the given object.\n
* @param thisRef the object for which the value is requested.\n * @param property the metadata for the
property.\n * @return the property value.\n * \n\n    public operator fun getValue(thisRef:
T, property: KProperty<*>): V\n}\n\n/**\n * Base interface that can be used for implementing property delegates of
read-write properties.\n * \n * This is provided only for convenience; you don't have to extend this interface\n * as
long as your property delegate has methods with the same signatures.\n * \n * @param T the type of object which
owns the delegated property.\n * @param V the type of the property value.\n * \n\npublic interface
ReadWriteProperty<in T, V> : ReadOnlyProperty<T, V> {\n    /**\n * Returns the value of the property for the
given object.\n * @param thisRef the object for which the value is requested.\n * @param property the
metadata for the property.\n * @return the property value.\n * \n\n    public override operator fun
getValue(thisRef: T, property: KProperty<*>): V\n\n    /**\n * Sets the value of the property for the given
object.\n * @param thisRef the object for which the value is requested.\n * @param property the metadata for
the property.\n * @param value the value to set.\n * \n\n    public operator fun setValue(thisRef: T, property:
KProperty<*>, value: V)\n}\n\n/**\n * Base interface that can be used for implementing property delegate
providers.\n * \n * This is provided only for convenience; you don't have to extend this interface\n * as long as your
delegate provider has a method with the same signature.\n * \n * @param T the type of object which owns the
delegated property.\n * @param D the type of property delegates this provider provides.\n
*\n * \n\n@SinceKotlin("1.4")\npublic fun interface PropertyDelegateProvider<in T, out D> {\n    /**\n * Returns the
delegate of the property for the given object.\n * \n * This function can be used to extend the logic of creating
the object (e.g. perform validation checks)\n * to which the property implementation is delegated.\n * \n *
*\n * @param thisRef the object for which property delegate is requested.\n * @param property the metadata

```

```

for the property.\n * @return the property delegate.\n */\n public operator fun provideDelegate(thisRef: T,
property: KProperty<*>): D{\n}\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.properties\n\nimport kotlin.reflect.KProperty\n\n/**\n * Implements the core logic of a property delegate for a read/write property that calls callback functions when
changed.\n * @param initialValue the initial value of the property.\n */\npublic abstract class
ObservableProperty<V>(initialValue: V) : ReadWriteProperty<Any?, V> {\n private var value = initialValue\n
/**\n * The callback which is called before a change to the property value is attempted.\n * The value of the
property hasn't been changed yet, when this callback is invoked.\n * If the callback returns `true` the value of
the property is being set to the new value,\n * and if the callback returns `false` the new value is discarded and
the property remains its old value.\n */\n protected open fun beforeChange(property: KProperty<*>, oldValue:
V, newValue: V): Boolean = true\n /**\n * The callback which is called after the change of the property is
made. The value of the property\n * has already been changed when this callback is invoked.\n */\n protected
open fun afterChange(property: KProperty<*>, oldValue: V, newValue: V): Unit {} \n\n public override fun
getValue(thisRef: Any?, property: KProperty<*>): V {\n return value\n }\n\n public override fun
setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n val oldValue = this.value\n if
(!beforeChange(property, oldValue, value)) {\n return\n }\n this.value = value\n
afterChange(property, oldValue, value)\n }\n}"/*\n * Copyright 2010-2020 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\n@file:Suppress("PackageDirectoryMismatch")\npackage
kotlin\n\nimport kotlin.reflect.*\n\n/**\n * An extension operator that allows delegating a read-only property of type
[V]\n * to a property reference to a property of type [V] or its subtype.\n */\n * @receiver A property reference to a
read-only or mutable property of type [V] or its subtype.\n * The reference is without a receiver, i.e. it either
references a top-level property or\n * has the receiver bound to it.\n */\n * Example:\n */\n * class Login(val
username: String)\n * val defaultLogin = Login("Admin")\n * val defaultUsername by defaultLogin::username\n *
// equivalent to\n * val defaultUserName get() = defaultLogin.username\n * ```\n */\n * @SinceKotlin("1.4")\n */\n * @kotlin.internal.InlineOnly\n */\n * public inline operator fun <V>
KProperty0<V>.getValue(thisRef:
Any?, property: KProperty<*>): V {\n return get()\n}\n\n/**\n * An extension operator that allows delegating a
mutable property of type [V]\n * to a property reference to a mutable property of the same type [V].\n */\n *
@receiver A property reference to a mutable property of type [V].\n * The reference is without a receiver, i.e. it
either references a top-level property or\n * has the receiver bound to it.\n */\n * Example:\n */\n * class
Login(val username: String, var incorrectAttemptCounter: Int = 0)\n * val defaultLogin = Login("Admin")\n * var
defaultLoginAttempts by defaultLogin::incorrectAttemptCounter\n * // equivalent to\n * var defaultLoginAttempts:
Int\n * get() = defaultLogin.incorrectAttemptCounter\n * set(value) { defaultLogin.incorrectAttemptCounter =
value }\n * ```\n */\n * @SinceKotlin("1.4")\n */\n * @kotlin.internal.InlineOnly\n */\n * public inline operator fun <V>
KMutableProperty0<V>.setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n set(value)\n}\n\n/**\n * An extension operator that allows delegating a read-only member or extension property of type [V]\n * to a
property reference to a member or extension property of type [V] or its subtype.\n */\n * @receiver A property
reference to a read-only or mutable property of type [V] or its subtype.\n * The reference has an unbound receiver of
type [T].\n */\n * Example:\n */\n * class Login(val username: String)\n * val Login.user by
Login::username\n * // equivalent to\n * val Login.user get() = this.username\n * ```\n */\n * @SinceKotlin("1.4")\n */\n * @kotlin.internal.InlineOnly\n */\n * public inline operator fun <T, V> KProperty1<T,
V>.getValue(thisRef: T, property: KProperty<*>): V {\n return get(thisRef)\n}\n\n/**\n * An extension operator
that allows delegating a mutable member or extension property of type [V]\n * to a property reference to a member
or extension mutable property of the same type [V].\n */\n * @receiver A property reference to a read-only or
mutable property

```

```

of type [V] or its subtype.\n * The reference has an unbound receiver of type [T].\n *\n * Example:\n *\n * ```\n * class Login(val username: String, var incorrectAttemptCounter: Int)\n * var Login.attempts by\n * Login::incorrectAttemptCounter\n * // equivalent to\n * var Login.attempts: Int\n * get() =\n * this.incorrectAttemptCounter\n * set(value) { this.incorrectAttemptCounter = value }\n * ```\n *\n * @SinceKotlin("1.4")\n * @kotlin.internal.InlineOnly\n * public inline operator fun <T, V> KMutableProperty1<T,\n * V>.setValue(thisRef: T, property: KProperty<*>, value: V) {\n * set(thisRef, value)\n * }"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.random\n\nimport kotlin.math.nextDown\n\n/**\n * An abstract class that is implemented by random number generator algorithms.\n *\n * The companion object [Random.Default]\n * is the default instance of [Random].\n *\n * To get a seeded instance of random generator use [Random] function.\n *\n * @sample samples.random.Randoms.defaultRandom\n */\n@SinceKotlin("1.3")\npublic abstract class Random {\n\n    /**\n     * Gets the next random [bitCount] number of bits.\n     *\n     * Generates an `Int` whose lower [bitCount] bits are filled with random values and the remaining upper bits are zero.\n     *\n     * @param bitCount number of bits to generate, must be in range 0..32, otherwise the behavior is unspecified.\n     *\n     * @sample samples.random.Randoms.nextBits\n     */\n    public abstract fun nextBits(bitCount: Int): Int\n\n    /**\n     * Gets the next random `Int` from the random number generator.\n     *\n     * Generates an `Int` random value uniformly distributed between `Int.MIN_VALUE` and `Int.MAX_VALUE` (inclusive).\n     *\n     * @sample samples.random.Randoms.nextInt\n     */\n    public open fun nextInt(): Int = nextBits(32)\n\n    /**\n     * Gets the next random non-negative `Int` from the random number generator less than the specified [until] bound.\n     *\n     * Generates an `Int` random value uniformly distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n     *\n     * @param until must be positive.\n     *\n     * @throws IllegalArgumentException if [until] is negative or zero.\n     *\n     * @sample samples.random.Randoms.nextIntFromUntil\n     */\n    public open fun nextInt(until: Int): Int = nextInt(0, until)\n\n    /**\n     * Gets the next random `Int` from the random number generator in the specified range.\n     *\n     * Generates an `Int` random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n     *\n     * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n     *\n     * @sample samples.random.Randoms.nextIntFromUntil\n     */\n    public open fun nextInt(from: Int, until: Int): Int {\n        checkRangeBounds(from, until)\n        val n = until - from\n        if (n > 0 || n == Int.MIN_VALUE) {\n            val rnd = if (n and -n == n) {\n                val bitCount = fastLog2(n)\n                nextBits(bitCount)\n            } else {\n                var v: Int\n                do {\n                    val bits = nextInt().ushr(1)\n                    v = bits % n\n                } while (bits - v + (n - 1) < 0)\n                v\n            }\n            return from + rnd\n        } else {\n            while (true) {\n                val rnd = nextInt()\n                if (rnd in from until until) return rnd\n            }\n        }\n    }\n\n    /**\n     * Gets the next random `Long` from the random number generator.\n     *\n     * Generates a `Long` random value uniformly distributed between `Long.MIN_VALUE` and `Long.MAX_VALUE` (inclusive).\n     *\n     * @sample samples.random.Randoms.nextLong\n     */\n    public open fun nextLong(): Long = nextInt().toLong().shl(32) + nextInt()\n\n    /**\n     * Gets the next random non-negative `Long` from the random number generator less than the specified [until] bound.\n     *\n     * Generates a `Long` random value uniformly distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n     *\n     * @param until must be positive.\n     *\n     * @throws IllegalArgumentException if [until] is negative or zero.\n     *\n     * @sample samples.random.Randoms.nextLongFromUntil\n     */\n    public open fun nextLong(until: Long): Long = nextLong(0, until)\n\n    /**\n     * Gets the next random `Long` from the random number generator in the specified range.\n     *\n     * Generates a `Long` random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n     *\n     * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n     *\n     * @sample samples.random.Randoms.nextLongFromUntil\n     */\n    public open fun nextLong(from: Long, until: Long): Long {\n        checkRangeBounds(from, until)\n        val n = until - from\n        if (n > 0) {\n            val rnd: Long\n            if (n and -n == n) {\n                val nLow = n.toInt()\n                val nHigh = (n ushr 32).toInt()\n                rnd = when {\n                    nLow != 0 -> {\n
```



```

    val bitCount = fastLog2(nLow)\n                // toUInt().toLong()\n
nextBits(bitCount).toLong() and 0xFFFF_FFFF\n                }\n                nHigh == 1 ->\n                //
toUInt().toLong()\n                nextInt().toLong() and 0xFFFF_FFFF\n                else -> {\n                val
bitCount = fastLog2(nHigh)\n                nextBits(bitCount).toLong().shl(32) + (nextInt().toLong() and
0xFFFF_FFFF)\n                }\n                }\n                } else {\n                var v: Long\n
do {\n                val bits = nextLong().ushr(1)\n                v = bits % n\n                } while (bits - v + (n - 1)
< 0)\n                rnd = v\n                }\n                return from + rnd\n                } else {\n                while (true) {\n                val
rnd = nextLong()\n                if (rnd in from until until) return rnd\n                }\n                }\n                /**\n                * Gets the
next random [Boolean] value.\n                *\n                * @sample samples.random.Randoms.nextBoolean\n                */\n                public open
fun nextBoolean(): Boolean = nextBits(1) != 0\n                /**\n                * Gets the next random [Double] value uniformly
distributed between 0 (inclusive) and 1 (exclusive).\n                *\n                * @sample samples.random.Randoms.nextDouble\n
*/\n                public open fun nextDouble(): Double = doubleFromParts(nextBits(26), nextBits(27))\n                /**\n                * Gets
the next random non-negative `Double` from the random number generator less than the specified [until] bound.\n
*/\n
                * Generates a `Double` random value uniformly distributed between 0 (inclusive) and [until] (exclusive).\n                *\n
                * @throws IllegalArgumentException if [until] is negative or zero.\n                *\n                * @sample
samples.random.Randoms.nextDoubleFromUntil\n                */\n                public open fun nextDouble(until: Double): Double =
nextDouble(0.0, until)\n                /**\n                * Gets the next random `Double` from the random number generator in the
specified range.\n                *\n                * Generates a `Double` random value uniformly distributed between the specified [from]
(inclusive) and [until] (exclusive) bounds.\n                *\n                * [from] and [until] must be finite otherwise the behavior is
unspecified.\n                *\n                * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n
*/\n                * @sample samples.random.Randoms.nextDoubleFromUntil\n                */\n                public open fun nextDouble(from: Double,
until: Double): Double {\n                checkRangeBounds(from, until)\n                val size = until - from\n
                val r = if (size.isInfinite() && from.isFinite() && until.isFinite()) {\n                val r1 = nextDouble() * (until / 2 -
from / 2)\n                from + r1 + r1\n                } else {\n                from + nextDouble() * size\n                }\n                return if (r >=
until) until.nextDown() else r\n                }\n                /**\n                * Gets the next random [Float] value uniformly distributed
between 0 (inclusive) and 1 (exclusive).\n                *\n                * @sample samples.random.Randoms.nextFloat\n                */\n
                public open fun nextFloat(): Float = nextBits(24) / (1 shl 24).toFloat()\n                /**\n                * Fills a subrange of the
specified byte [array] starting from [fromIndex] inclusive and ending [toIndex] exclusive\n                * with random
bytes.\n                *\n                * @return [array] with the subrange filled with random bytes.\n                *\n                * @sample
samples.random.Randoms.nextBytes\n                */\n                public open fun nextBytes(array: ByteArray, fromIndex: Int = 0,
toIndex: Int = array.size): ByteArray {\n                require(fromIndex in
0..array.size && toIndex in 0..array.size) { "\n                fromIndex ($fromIndex) or toIndex ($toIndex) are out of range:
0..${array.size}.\n                " }\n                require(fromIndex <= toIndex) { "\n                fromIndex ($fromIndex) must be not greater than
toIndex ($toIndex).\n                " }\n                val steps = (toIndex - fromIndex) / 4\n                var position = fromIndex\n
repeat(steps) {\n                val v = nextInt()\n                array[position] = v.toByte()\n                array[position + 1] =
v.ushr(8).toByte()\n                array[position + 2] = v.ushr(16).toByte()\n                array[position + 3] =
v.ushr(24).toByte()\n                position += 4\n                }\n                val remainder = toIndex - position\n                val vr =
nextBits(remainder * 8)\n                for (i in 0 until remainder) {\n                array[position + i] = vr.ushr(i * 8).toByte()\n
}\n                return array\n                }\n                /**\n                * Fills the specified byte [array] with random bytes and returns it.\n
*/\n                * @return [array] filled with random bytes.\n
                *\n                * @sample samples.random.Randoms.nextBytes\n                */\n                public open fun nextBytes(array: ByteArray):
ByteArray = nextBytes(array, 0, array.size)\n                /**\n                * Creates a byte array of the specified [size], filled with
random bytes.\n                *\n                * @sample samples.random.Randoms.nextBytes\n                */\n                public open fun
nextBytes(size: Int): ByteArray = nextBytes(ByteArray(size))\n                /**\n                * The default random number
generator.\n                *\n                * On JVM this generator is thread-safe, its methods can be invoked from multiple threads.\n
*/\n                * @sample samples.random.DefaultRandom\n                */\n                companion object Default : Random(),
Serializable {\n                private val defaultRandom: Random = defaultPlatformRandom()\n                private object

```

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Serialized : Serializable {
    private const val serialVersionUID = 0L
    private fun readResolve(): Any = Random
}
private fun writeReplace(): Any = Serialized
override fun nextBits(bitCount: Int): Int = defaultRandom.nextBits(bitCount)
override fun nextInt(): Int = defaultRandom.nextInt()
override fun nextInt(until: Int): Int = defaultRandom.nextInt(until)
override fun nextInt(from: Int, until: Int): Int = defaultRandom.nextInt(from, until)
override fun nextLong(): Long = defaultRandom.nextLong()
override fun nextLong(until: Long): Long = defaultRandom.nextLong(until)
override fun nextLong(from: Long, until: Long): Long = defaultRandom.nextLong(from, until)
override fun nextBoolean(): Boolean = defaultRandom.nextBoolean()
override fun nextDouble(): Double = defaultRandom.nextDouble()
override fun nextDouble(until: Double): Double = defaultRandom.nextDouble(until)
override fun nextDouble(from: Double, until: Double): Double = defaultRandom.nextDouble(from, until)
override fun nextFloat(): Float = defaultRandom.nextFloat()
override fun nextBytes(array: ByteArray): ByteArray = defaultRandom.nextBytes(array)
override fun nextBytes(size: Int): ByteArray = defaultRandom.nextBytes(size)
override fun nextBytes(array: ByteArray, fromIndex: Int, toIndex: Int): ByteArray = defaultRandom.nextBytes(array, fromIndex, toIndex)
}

Returns a repeatable random number generator seeded with the given [seed] `Int` value.
Two generators with the same seed produce the same sequence of values within the same version of Kotlin runtime.
Note: Future versions of Kotlin may change the algorithm of this seeded number generator so that it will return a sequence of values different from the current one for a given seed.
On JVM the returned generator is NOT thread-safe. Do not invoke it from multiple threads without proper synchronization.
@sample samples.random.Randoms.seededRandom
@SinceKotlin("1.3")
public fun Random(seed: Int): Random = XorWowRandom(seed, seed.shr(31))
Returns a repeatable random number generator seeded with the given [seed] `Long` value.
Two generators with the same seed produce the same sequence of values within the same version of Kotlin runtime.
Note: Future versions of Kotlin may change the algorithm of this seeded number generator so that it will return a sequence of values different from the current one for a given seed.
On JVM the returned generator is NOT thread-safe. Do not invoke it from multiple threads without proper synchronization.
@sample samples.random.Randoms.seededRandom
@SinceKotlin("1.3")
public fun Random(seed: Long): Random = XorWowRandom(seed.toInt(), seed.shr(32).toInt())
Gets the next random `Int` from the random number generator in the specified [range].
Generates an `Int` random value uniformly distributed in the specified [range]: from `range.start` inclusive to `range.endInclusive` inclusive.
@throws IllegalArgumentException if [range] is empty.
@SinceKotlin("1.3")
public fun Random.nextInt(range: IntRange): Int = when {
    range.isEmpty() -> throw IllegalArgumentException("Cannot get random in empty range: $range")
    range.last < Int.MAX_VALUE -> nextInt(range.first, range.last + 1)
    range.first > Int.MIN_VALUE -> nextInt(range.first - 1, range.last) + 1
    else -> nextInt()
}
Gets the next random `Long` from the random number generator in the specified [range].
Generates a `Long` random value uniformly distributed in the specified [range]: from `range.start` inclusive to `range.endInclusive` inclusive.
@throws IllegalArgumentException if [range] is empty.
@SinceKotlin("1.3")
public fun Random.nextLong(range: LongRange): Long = when {
    range.isEmpty() -> throw IllegalArgumentException("Cannot get random in empty range: $range")
    range.last < Long.MAX_VALUE -> nextLong(range.first, range.last + 1)
    range.first > Long.MIN_VALUE -> nextLong(range.first - 1, range.last) + 1
    else -> nextLong()
}
internal expect fun defaultPlatformRandom(): Random
internal expect fun doubleFromParts(hi26: Int, low27: Int): Double
internal fun fastLog2(value: Int): Int = 31 - value.countLeadingZeroBits()
Takes upper [bitCount] bits (0..32) from this number.
internal fun Int.takeUpperBits(bitCount: Int): Int = this.ushr(32 - bitCount) and (-bitCount).shr(31)
internal fun checkRangeBounds(from: Int, until: Int) = require(until > from) { boundsErrorMessage(from, until) }
internal fun checkRangeBounds(from: Long, until: Long) = require(until > from) { boundsErrorMessage(from, until) }

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fun checkRangeBounds(from: Double, until: Double) = require(until > from) { boundsErrorMessage(from, until)
}
internal fun boundsErrorMessage(from: Any, until: Any) = "Random range is empty: [$from,
$until)."
/*
 * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
 * Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
 * found in the license/LICENSE.txt file.
 */
package kotlin.random

/**
 * Gets the next random [UInt]
 * from the random number generator.
 */
fun Random.nextInt(): UInt = nextInt().toUInt()

/**
 * Generates a [UInt] random value uniformly distributed between
 * [UInt.MIN_VALUE] and [UInt.MAX_VALUE] (inclusive).
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
Random.nextInt(until: UInt): UInt = nextInt(0u, until).toUInt()

/**
 * Gets the next random
 * [UInt] from the random number generator in the specified range.
 */
fun Random.nextInt(from: UInt, until: UInt): UInt {
    checkUIntRangeBounds(from, until)
    val signedFrom = from.toInt() xor Int.MIN_VALUE
    val signedUntil = until.toInt() xor Int.MIN_VALUE
    val signedResult = nextInt(signedFrom, signedUntil) xor Int.MIN_VALUE
    return signedResult.toUInt()
}

/**
 * Gets the next
 * random [UInt] from the random number generator in the specified [range].
 */
fun Random.nextInt(range: UIntRange): UInt = when {
    range.isEmpty() -> throw
    IllegalArgument("Cannot get random in empty range: $range")
    range.last < UInt.MAX_VALUE ->
    nextInt(range.first, range.last + 1u)
    range.first > UInt.MIN_VALUE -> nextInt(range.first - 1u, range.last) +
    1u
    else -> nextInt()
}

/**
 * Gets the next random [ULong] from the random number generator.
 */
fun Random.nextULong(): ULong = nextLong().toULong()

/**
 * Generates a [ULong] random value uniformly distributed between
 * [ULong.MIN_VALUE] and
 * [ULong.MAX_VALUE] (inclusive).
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
Random.nextULong(until: ULong): ULong = nextULong(0uL, until)

/**
 * Gets the next random [ULong] from
 * the random number generator in the specified range.
 */
fun Random.nextULong(from: ULong, until: ULong): ULong {
    checkULongRangeBounds(from, until)
    val signedFrom = from.toLong() xor Long.MIN_VALUE
    val signedUntil = until.toLong() xor
    Long.MIN_VALUE
    val signedResult = nextLong(signedFrom, signedUntil) xor Long.MIN_VALUE
    return signedResult.toULong()
}

/**
 * Gets the next random
 * [ULong] from the random number generator in the specified [range].
 */
fun Random.nextULong(range: ULongRange): ULong = when {
    range.isEmpty() -> throw
    IllegalArgument("Cannot get random in empty range: $range")
    range.last < ULong.MAX_VALUE ->
    nextULong(range.first, range.last + 1uL)
    range.first > ULong.MIN_VALUE -> nextULong(range.first - 1uL, range.last) +
    1uL
    else -> nextULong()
}

```

```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(range: ULongRange): ULong = when {\n    range.isEmpty() -> throw
IllegalArgumentExceptio("Cannot get random in empty range: $range")\n    range.last < ULong.MAX_VALUE -
> nextULong(range.first, range.last + 1u)\n    range.first > ULong.MIN_VALUE -> nextULong(range.first - 1u,
range.last) + 1u\n    else -> nextULong()\n}\n\n/**\n * Fills the specified unsigned byte [array] with random bytes
and returns it.\n *\n * @return [array] filled with random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Random.nextUBytes(array: UByteArray):
UByteArray {\n    nextBytes(array.asByteArray())\n
    return array\n}\n\n/**\n * Creates an unsigned byte array of the specified [size], filled with random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Random.nextUBytes(size: Int): UByteArray
= nextBytes(size).asUByteArray()\n\n/**\n * Fills a subrange of the specified `UByte` [array] starting from
[fromIndex] inclusive and ending [toIndex] exclusive with random UBytes.\n *\n * @return [array] with the
subrange filled with random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Random.nextUBytes(array: UByteArray, fromIndex: Int = 0, toIndex: Int = array.size): UByteArray {\n
    nextBytes(array.asByteArray(), fromIndex, toIndex)\n    return array\n}\n\ninternal fun
checkUIntRangeBounds(from: UInt, until: UInt) = require(until > from) { boundsErrorMessage(from, until)
}\n\ninternal fun checkULongRangeBounds(from: ULong, until: ULong) = require(until > from) {
boundsErrorMessage(from, until) }\n", "/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n@npackage kotlin.random\n\n/**\n * Random number generator, using Marsaglia's "xorwow" algorithm\n
*\n * Cycles after 2^192 - 2^32 repetitions.\n
*\n * For more details, see Marsaglia, George (July 2003). "Xorshift RNGs". Journal of Statistical Software. 8
(14). doi:10.18637/jss.v008.i14\n
*\n * Available at https://www.jstatsoft.org/v08/i14/paper\n
*\n * @ninternal class
XorWowRandom internal constructor(\n    private var x: Int,\n    private var y: Int,\n    private var z: Int,\n    private
var w: Int,\n    private var v: Int,\n    private var addend: Int\n) : Random(), Serializable {\n    internal
constructor(seed1: Int, seed2: Int) :n        this(seed1, seed2, 0, 0, seed1.inv(), (seed1 shl 10) xor (seed2 ushr
4))\n    init {\n        require((x or y or z or w or v) != 0) { "Initial
state must have at least one non-zero element." }\n        // some trivial seeds can produce several values with
zeroes in upper bits, so we discard first 64\n        repeat(64) { nextInt() }\n        } \n        override fun nextInt(): Int {\n
// Equivalent to the xorwow algorithm\n        // From Marsaglia, G. 2003. Xorshift RNGs. J. Statis. Soft. 8, 14, p.
5\n        var t = x\n        t = t xor (t ushr 2)\n        x = y\n        y = z\n        z = w\n        val v0 = v\n        w = v0\n        t
= (t xor (t shl 1)) xor v0 xor (v0 shl 4)\n        v = t\n        addend += 362437\n        return t + addend\n        }\n
        override fun nextBits(bitCount: Int): Int =\n            nextInt().takeUpperBits(bitCount)\n        }\n        private companion object
{\n            private const val serialVersionUID: Long = 0L\n        }\n    }\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in
the license/LICENSE.txt file.\n
*\n@nfile:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("RangesKt")\n\npackage
kotlin.ranges\n\n/**\n * Represents a range of [Comparable] values.\n
*\n@private open class ComparableRange<T> :
Comparable<T>>(\n    override val start: T,\n    override val endInclusive: T\n) : ClosedRange<T> {\n    override
fun equals(other: Any?): Boolean {\n        return other is ComparableRange<*> && (isEmpty() && other.isEmpty())
||\n            start == other.start && endInclusive == other.endInclusive\n    }\n    override fun hashCode(): Int
{\n        return if (isEmpty()) -1 else 31 * start.hashCode() + endInclusive.hashCode()\n    }\n    override fun
toString(): String = "$start..$endInclusive"\n}\n\n/**\n * Creates a range from this [Comparable] value to the
specified [that] value.\n *\n * This value needs to be smaller than or equal to [that] value, otherwise the returned
range will be empty.\n *\n * @sample samples.ranges.Ranges.rangeFromComparable\n
*\n@public operator fun <T : Comparable<T>> T.rangeTo(that: T): ClosedRange<T> = ComparableRange(this,
that)\n\n/**\n * Represents a range of floating point numbers.\n
*\n * Extends [ClosedRange] interface providing

```

custom operation [lessThanOrEquals] for comparing values of range domain type.

* This interface is implemented by floating point ranges returned by [Float.rangeTo] and [Double.rangeTo] operators to achieve IEEE-754 comparison order instead of total order of floating point numbers.

```

@SinceKotlin("1.1")
public interface ClosedFloatingPointRange<T : Comparable<T>> : ClosedRange<T> {
    override fun contains(value: T): Boolean = lessThanOrEquals(start, value) && lessThanOrEquals(value, endInclusive)
    override fun isEmpty(): Boolean = !lessThanOrEquals(start, endInclusive)
}

```

/** Compares two values of range domain type and returns true if first is less than or equal to second.

```

fun lessThanOrEquals(a: T, b: T): Boolean

```

*/

* A closed range of values of type `Double`.

* Numbers are compared with the ends of this range according to IEEE-754.

```

private class ClosedDoubleRange(
    start: Double,
    endInclusive: Double
) : ClosedFloatingPointRange<Double> {
    private val _start = start
    private val _endInclusive = endInclusive
    override val start: Double get() = _start
    override val endInclusive: Double get() = _endInclusive
    override fun lessThanOrEquals(a: Double, b: Double): Boolean = a <= b
    override fun contains(value: Double): Boolean = value >= _start && value <= _endInclusive
    override fun isEmpty(): Boolean = !(_start <= _endInclusive)
    override fun equals(other: Any?): Boolean {
        return other is ClosedDoubleRange && (isEmpty() && other.isEmpty() ||
            _start == other._start && _endInclusive == other._endInclusive)
    }
    override fun hashCode(): Int {
        return if (isEmpty()) -1 else 31 * _start.hashCode() +
            _endInclusive.hashCode()
    }
    override fun toString(): String = "$_start..$_endInclusive"
}

```

Creates a range from this [Double] value to the specified [that] value.

* Numbers are compared with the ends of this range according to IEEE-754.

```

@sample samples.ranges.Ranges.rangeFromDouble

```

*/

```

@SinceKotlin("1.1")
public operator fun Double.rangeTo(that: Double): ClosedFloatingPointRange<Double> =
    ClosedDoubleRange(this, that)

```

/** A closed range of values of type `Float`.

* Numbers are compared with the ends of this range according to IEEE-754.

```

private class ClosedFloatRange(
    start: Float,
    endInclusive: Float
) : ClosedFloatingPointRange<Float> {
    private val _start = start
    private val _endInclusive = endInclusive
    override val start: Float get() = _start
    override val endInclusive: Float get() = _endInclusive
    override fun lessThanOrEquals(a: Float, b: Float): Boolean = a <= b
    override fun contains(value: Float): Boolean = value >= _start && value <= _endInclusive
    override fun isEmpty(): Boolean = !(_start <= _endInclusive)
    override fun equals(other: Any?): Boolean {
        return other is ClosedFloatRange && (isEmpty() && other.isEmpty() ||
            _start == other._start && _endInclusive == other._endInclusive)
    }
    override fun hashCode(): Int {
        return if (isEmpty()) -1 else 31 *
            _start.hashCode() + _endInclusive.hashCode()
    }
    override fun toString(): String =
        "$_start..$_endInclusive"
}

```

Creates a range from this [Float] value to the specified [that] value.

* Numbers are compared with the ends of this range according to IEEE-754.

```

@sample
samples.ranges.Ranges.rangeFromFloat

```

*/

```

@SinceKotlin("1.1")
public operator fun Float.rangeTo(that: Float): ClosedFloatingPointRange<Float> =
    ClosedFloatRange(this, that)

```

* Returns `true` if this iterable range contains the specified [element].

* Always returns `false` if the [element] is `null`.

```

@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public inline fun <T, R> R.contains(element: T?): Boolean where T : Any, R : Iterable<T>, R : ClosedRange<T> =
    element != null && contains(element)

```

internal fun checkStepIsPositive(isPositive: Boolean, step: Number) {
 if (!isPositive)
 throw IllegalArgumentException("Step must be positive, was: \$step.")
}

*/

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```

@file:kotlin.jvm.JvmName("KClasses")
@file:Suppress("UNCHECKED_CAST")
package kotlin.reflect
import kotlin.internal.LowPriorityInOverloadResolution

```

/** Casts the given [value] to the class represented by this [KClass] object.

* Throws an exception if the value is `null` or if it is not an instance of this

```

class.\n *\n * This is an experimental function that behaves as a similar function from kotlin.reflect.full on JVM.\n
*\n * @see [KClass.isInstance]\n * @see [KClass.safeCast]\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @LowPriorityInOverloadResoluti
on\n fun <T : Any> KClass<T>.cast(value: Any?): T {\n     if (!isInstance(value)) throw ClassCastException("Value
cannot be cast to $qualifiedOrSimpleName")\n     return value as T\n }\n\n // TODO: replace with qualifiedName
when it is fully supported in K/JS\n internal expect val KClass<*>.qualifiedOrSimpleName: String?\n\n /**\n * Casts
the given [value] to the class represented by this [KClass] object.\n * Returns `null` if the value is `null` or if it is not
an instance of this class.\n *\n * This is an experimental function that behaves as a similar function from
kotlin.reflect.full on JVM.\n *\n * @see [KClass.isInstance]\n * @see [KClass.cast]\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @LowPriorityInOverloadResoluti
on\n fun
<T : Any> KClass<T>.safeCast(value: Any?): T? {\n     return if (isInstance(value)) value as T else null\n }\n\n
/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n package
kotlin.reflect\n\n import kotlin.jvm.JvmField\n\n import kotlin.jvm.JvmStatic\n\n\n /**\n * Represents a type
projection. Type projection is usually the argument to another type in a type usage.\n * For example, in the type
`Array<out Number>`, `out Number` is the covariant projection of the type represented by the class `Number`.\n *\n
* Type projection is either the star projection, or an entity consisting of a specific type plus optional variance.\n *\n
* See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/generics.html#type-projections)\n *
for more information.\n */\n\n @SinceKotlin("1.1")\n public
data class KTypeProjection constructor(\n     /**\n     * The use-site variance specified in the projection, or `null` if
this is a star projection.\n     */\n     public val variance: KVariance?,\n     /**\n     * The type specified in the
projection, or `null` if this is a star projection.\n     */\n     public val type: KType?) {\n     init {\n
require((variance == null) == (type == null)) {\n         if (variance == null)\n             "Star projection must have
no type specified." \n         else\n             "The projection variance $variance requires type to be specified." \n
}\n     }\n     override fun toString(): String = when (variance) {\n         null -> "*" \n         KVariance.INVARIANT
-> type.toString()\n         KVariance.IN -> "in $type" \n         KVariance.OUT -> "out $type" \n     }\n     public
companion object {\n         // provided for compiler access\n         @JvmField\n         @PublishedApi\n         internal
val
star: KTypeProjection = KTypeProjection(null, null)\n\n         /**\n         * Star projection, denoted by the `*`
character.\n         * For example, in the type `KClass<*>`, `*` is the star projection.\n         * See the [Kotlin
language documentation](https://kotlinlang.org/docs/reference/generics.html#star-projections)\n         * for more
information.\n         */\n         public val STAR: KTypeProjection get() = star\n\n         /**\n         * Creates an
invariant projection of a given type. Invariant projection is just the type itself,\n         * without any use-site variance
modifiers applied to it.\n         * For example, in the type `Set<String>`, `String` is an invariant projection of the type
represented by the class `String`.\n         */\n         @JvmStatic\n         public fun invariant(type: KType):
KTypeProjection =\n             KTypeProjection(KVariance.INVARIANT, type)\n\n         /**\n         * Creates a
contravariant projection of a given type, denoted by the `in`
modifier applied to a type.\n         * For example, in the type `MutableList<in Number>`, `in Number` is a
contravariant projection of the type of class `Number`.\n         */\n         @JvmStatic\n         public fun
contravariant(type: KType): KTypeProjection =\n             KTypeProjection(KVariance.IN, type)\n\n         /**\n         *
Creates a covariant projection of a given type, denoted by the `out` modifier applied to a type.\n         * For example,
in the type `Array<out Number>`, `out Number` is a covariant projection of the type of class `Number`.\n         */\n
         @JvmStatic\n         public fun covariant(type: KType): KTypeProjection =\n             KTypeProjection(KVariance.OUT, type)\n     }\n }\n\n /**\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n package kotlin.reflect\n\n /**\n * Represents variance applied

```

to a type parameter on the declaration site (*declaration-site variance*),\n * or to a type in a projection (*use-site variance*). \n * See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/generics.html#variance)\n * for more information. \n * @see [KTypeParameter.variance]\n * @see [KTypeProjection]\n * ^\n@SinceKotlin("1.1")\nenum class KVariance {\n /**\n * The affected type parameter or type is *invariant*, which means it has no variance applied to it.\n */\n INVARIANT,\n /**\n * The affected type parameter or type is *contravariant*. Denoted by the `in` modifier in the source code.\n */\n IN,\n /**\n * The affected type parameter or type is *covariant*. Denoted by the `out` modifier in the source code.\n */\n OUT,\n },"/>\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt

file.\n *\n@npackage kotlin.reflect\n/**\n * Returns a runtime representation of the given reified type [T] as an instance of [KType].\n *\n * Note that on JVM, the created type has no annotations ([KType.annotations] returns an empty list)\n * even if the type in the source code is annotated. Support for type annotations might be added in a future version.\n *\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <reified T> typeOf(): KType =\n throw UnsupportedOperationException("\n * This function is implemented as an intrinsic on all supported platforms.")\n"/>\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n

^\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage

kotlin.text\n/**\n * An object to which char sequences and values can be

appended.\n *\nexpect interface Appendable {\n /**\n * Appends the specified character [value] to this Appendable and returns this instance.\n */\n * @param value the character to append.\n */\n fun append(value: Char): Appendable\n /**\n * Appends the specified character sequence [value] to this Appendable and returns this instance.\n */\n * @param value the character sequence to append. If [value] is `null`, then the four characters `"\n * null\n * "` are appended to this Appendable.\n */\n fun append(value: CharSequence?): Appendable\n /**\n * Appends a subsequence of the specified character sequence [value] to this Appendable and returns this instance.\n */\n * @param value the character sequence from which a subsequence is appended. If [value] is `null`,\n * then characters are appended as if [value] contained the four characters `"\n * null\n * "`.\n * @param startIndex the beginning (inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n */\n * @throws

IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.\n */\n fun append(value: CharSequence?, startIndex: Int, endIndex: Int): Appendable}\n\n/**\n * Appends a subsequence of the specified character sequence [value] to this Appendable and returns this instance.\n */\n * @param value the character sequence from which a subsequence is appended.\n * @param startIndex the beginning (inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n */\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.\n

^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic

fun <T : Appendable> T.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): T {\n @Suppress("UNCHECKED_CAST")\n return append(value, startIndex, endIndex) as T}\n\n/**\n * Appends all arguments to the given [Appendable].\n */\npublic fun <T : Appendable> T.append(vararg value: CharSequence?): T {\n for (item in value)\n append(item)\n return this}\n\n/**\n * Appends a line feed character (`\n * \n * `) to this Appendable. ^\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(): Appendable = append("\n * \n * ")\n\n/**\n * Appends value to the given Appendable and a line feed character (`\n * \n * `) after it. ^\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(value: CharSequence?): Appendable = append(value).appendLine()\n\n/**\n * Appends value to the given Appendable and a line feed character (`\n * \n * `) after it.

```

*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun Appendable.appendLine(value:
Char): Appendable = append(value).appendLine()\n\ninternal fun <T> Appendable.appendElement(element: T,
transform: ((T) -> CharSequence)?) {\n    when {\n        transform != null -> append(transform(element))\n        element is CharSequence? -> append(element)\n        element is Char -> append(element)\n        else ->
append(element.toString())\n    }\n}\n"/n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\/n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage
kotlin.text\n/n/**\n * Trims leading whitespace characters followed by [marginPrefix] from every line of a source
string and removes\n * the first and the last lines if they are blank (notice difference blank vs empty).\n * \n * Doesn't
affect a line if it doesn't contain [marginPrefix] except the first and
the last blank lines.\n * \n * Doesn't preserve the original line endings.\n * \n * @param marginPrefix non-blank
string, which is used as a margin delimiter. Default is `|` (pipe character).\n * \n * @sample
samples.text.Strings.trimMargin\n * @see trimIndent\n * @see kotlin.text.isWhitespace\n *\/n\npublic fun
String.trimMargin(marginPrefix: String = "|"): String =\n    replaceIndentByMargin("|", marginPrefix)\n/n/**\n * Detects indent by [marginPrefix] as it does [trimMargin] and replace it with [newIndent].\n * \n * @param
marginPrefix non-blank string, which is used as a margin delimiter. Default is `|` (pipe character).\n * \n *\/n\npublic fun
String.replaceIndentByMargin(newIndent: String = "|", marginPrefix: String = "|"): String {\n
    require(marginPrefix.isNotBlank()) { "marginPrefix must be non-blank string." }\n    val lines = lines()\n    return
lines.reindent(length + newIndent.length * lines.size, getIndentFunction(newIndent), { line ->\n        val
firstNonWhitespaceIndex
= line.indexOfFirst { !it.isWhitespace() }\n        when {\n            firstNonWhitespaceIndex == -1 -> null\n            line.startsWith(marginPrefix, firstNonWhitespaceIndex) -> line.substring(firstNonWhitespaceIndex +
marginPrefix.length)\n            else -> null\n        }\n    })\n/n/**\n * Detects a common minimal indent of all the
input lines, removes it from every line and also removes the first and the last\n * lines if they are blank (notice
difference blank vs empty).\n * \n * Note that blank lines do not affect the detected indent level.\n * \n * In case if
there are non-blank lines with no leading whitespace characters (no indent at all) then the\n * common indent is 0,
and therefore this function doesn't change the indentation.\n * \n * Doesn't preserve the original line endings.\n * \n *
@sample samples.text.Strings.trimIndent\n * @see trimMargin\n * @see kotlin.text.isBlank\n *\/n\npublic fun
String.trimIndent(): String = replaceIndent("\n")\n/n/**\n * Detects a common
minimal indent like it does [trimIndent] and replaces it with the specified [newIndent].\n * \n *\/n\npublic fun
String.replaceIndent(newIndent: String = "\n"): String {\n    val lines = lines()\n    val minCommonIndent = lines\n        .filter(String::isNotBlank)\n        .map(String::indentWidth)\n        .minOrNull() ?: 0\n    return
lines.reindent(length + newIndent.length * lines.size, getIndentFunction(newIndent), { line ->
line.drop(minCommonIndent) })\n/n/**\n * Prepends [indent] to every line of the original string.\n * \n * Doesn't
preserve the original line endings.\n * \n *\/n\npublic fun String.prependIndent(indent: String = " "): String =\n    lineSequence()\n        .map {\n            when {\n                it.isBlank() -> {\n                    when {\n                        it.length < indent.length -> indent\n                        else -> it\n                    }\n                }\n            }\n        }.joinToString("\n")\n\nprivate
fun String.indentWidth(): Int = indexOfFirst { !it.isWhitespace() }.let { if (it == -1) length else it }\n\nprivate fun
getIndentFunction(indent: String) = when {\n    indent.isEmpty() -> { line: String -> line }\n    else -> { line: String ->
indent + line }\n}\n\nprivate inline fun List<String>.reindent(\n    resultSizeEstimate: Int,\n    indentAddFunction:
(String) -> String,\n    indentCutFunction: (String) -> String?): String {\n    val lastIndex = lastIndex\n    return
mapIndexedNotNull { index, value ->\n        if ((index == 0 || index == lastIndex) && value.isBlank())\n            null\n        else\n            indentCutFunction(value)?.let(indentAddFunction) ?: value\n    }\n}.joinTo(StringBuilder(resultSizeEstimate), "\n")\n    .toString()\n}\n"/n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt

```



```

file.\n *\n\npackage kotlin.text\n\n/**\n * Defines names for Unicode symbols used in proper Typography.\n *\npublic object Typography {\n /** The character &#x22; \u2013 quotation mark *\n public const val quote: Char = "\u0022"\n /** The character &#x24; \u2013 dollar sign *\n public const val dollar: Char = "\u0024"\n /** The character &#x26; \u2013 ampersand *\n public const val amp: Char = "\u0026"\n /** The character &#x3C; \u2013 less-than sign *\n public const val less: Char = "\u003C"\n /** The character &#x3E; \u2013 greater-than sign *\n public const val greater: Char = "\u003E"\n /** The non-breaking space character *\n public const val nbsp: Char = "\u00A0"\n /** The character &#xD7; *\n public const val times: Char = "\u00D7"\n /** The character &#xA2; *\n public const val cent: Char = "\u00A2"\n /** The character &#xA3; *\n public const val pound: Char = "\u00A3"\n /** The character &#xA7; *\n public const val section: Char = "\u00A7"\n /** The character &#xA9; *\n public const val copyright: Char = "\u00A9"\n /** The character &#xAB; *\n @SinceKotlin("1.6")\n public const val leftGuillemet: Char = "\u00AB"\n /** The character &#xBB; *\n @SinceKotlin("1.6")\n public const val rightGuillemet: Char = "\u00BB"\n /** The character &#xAE; *\n public const val registered: Char = "\u00AE"\n /** The character &#xB0; *\n public const val degree: Char = "\u00B0"\n /** The character &#xB1; *\n public const val plusMinus: Char = "\u00B1"\n /** The character &#xB6; *\n public const val paragraph: Char = "\u00B6"\n /** The character &#xB7; *\n public const val middleDot: Char = "\u00B7"\n /** The character &#xBD; *\n public const val half: Char = "\u00BD"\n /** The character &#x2013; *\n public const val ndash: Char = "\u2013"\n /** The character &#x2014; *\n public const val mdash: Char = "\u2014"\n /** The character &#x2018; *\n public const val leftSingleQuote: Char = "\u2018"\n /** The character &#x2019; *\n public const val rightSingleQuote: Char = "\u2019"\n /** The character &#x201A; *\n public const val lowSingleQuote: Char = "\u201A"\n /** The character &#x201C; *\n public const val leftDoubleQuote: Char = "\u201C"\n /** The character &#x201D; *\n public const val rightDoubleQuote: Char = "\u201D"\n /** The character &#x201E; *\n public const val lowDoubleQuote: Char = "\u201E"\n /** The character &#x2020; *\n public const val dagger: Char = "\u2020"\n /** The character &#x2021; *\n public const val doubleDagger: Char = "\u2021"\n /** The character &#x2022; *\n public const val bullet: Char = "\u2022"\n /** The character &#x2026; *\n public const val ellipsis: Char = "\u2026"\n /** The character &#x2032; *\n public const val prime: Char = "\u2032"\n /** The character &#x2033; *\n public const val doublePrime: Char = "\u2033"\n /** The character &#x20AC; *\n public const val euro: Char = "\u20AC"\n /** The character &#x2122; *\n public const val tm: Char = "\u2122"\n /** The character &#x2248; *\n public const val almostEqual: Char = "\u2248"\n /** The character &#x2260; *\n public const val notEqual: Char = "\u2260"\n /** The character &#x2264; *\n public const val lessOrEqual: Char = "\u2264"\n /** The character &#x2265; *\n public const val greaterOrEqual: Char = "\u2265"\n\n /** The character &#xAB; *\n @Deprecated("This constant has a typo in the name. Use leftGuillemet instead.")\n ReplaceWith("Typography.leftGuillemet()")\n @DeprecatedSinceKotlin("1.6")\n public const val leftGuillemete: Char = "\u00AB"\n\n /** The character &#xBB; *\n @Deprecated("This constant has a typo in the name. Use rightGuillemet instead.")\n ReplaceWith("Typography.rightGuillemet()")\n @DeprecatedSinceKotlin("1.6")\n public const val rightGuillemete: Char = "\u00BB"\n\n /**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.text\n\n/**\n * Represents a collection of captured groups in a single match of a regular expression.\n * This collection has size of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.\n * Groups are indexed from 1 to `groupCount` and group with the index 0 corresponds to the entire match.\n * An element of the collection at the particular index can be `null` if the corresponding group in the regular expression is optional and there was no match captured by that group.\n *\npublic interface MatchGroupCollection : Collection<MatchGroup?> {\n /** Returns a group with the specified [index].\n * @return An instance of [MatchGroup] if the group with the specified [index] was matched or `null` otherwise.\n * Groups are indexed from 1 to the count of groups in the regular expression. A group with the index 0 corresponds to the entire match.\n *\n public operator fun get(index: Int): MatchGroup?\n }\n\n /**\n * Extends

```

[MatchGroupCollection] by introducing a way to get matched groups by name, when regex supports it.

```

*^@SinceKotlin("1.1")\npublic interface MatchNamedGroupCollection : MatchGroupCollection {\n /**\n *
Returns a named group with the specified [name].\n * @return An instance of [MatchGroup] if the group with the
specified [name] was matched or `null` otherwise.\n * @throws IllegalArgumentException if there is no group
with the specified [name] defined in the regex pattern.\n * @throws UnsupportedOperationException if getting
named groups isn't supported on the current platform.\n */\n public operator fun get(name:
String): MatchGroup?\n}\n\n/**\n * Represents the results from a single regular expression match.\n */\npublic
interface MatchResult {\n /** The range of indices in the original string where match was captured. */\n public
val range: IntRange\n /** The substring from the input string captured by this match. */\n public val value:
String\n /**\n * A collection of groups matched by the regular expression.\n */\n * This collection has size
of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.\n * Groups are indexed
from 1 to `groupCount` and group with the index 0 corresponds to the entire match.\n */\n public val groups:
MatchGroupCollection\n /**\n * A list of matched indexed group values.\n */\n * This list has size of
`groupCount + 1` where `groupCount` is the count of groups in the regular expression.\n * Groups are indexed
from 1 to `groupCount` and group with the index 0 corresponds to the entire
match.\n */\n * If the group in the regular expression is optional and there were no match captured by that
group,\n * corresponding item in [groupValues] is an empty string.\n */\n * @sample
samples.text.Regexps.matchDestructuringToGroupValues\n */\n public val groupValues: List<String>\n\n
/**\n * An instance of [MatchResult.Destructured] wrapper providing components for destructuring assignment
of group values.\n */\n * component1 corresponds to the value of the first group, component2 of the
second, and so on.\n */\n * @sample samples.text.Regexps.matchDestructuringToGroupValues\n */\n
public val destructured: Destructured get() = Destructured(this)\n /** Returns a new [MatchResult] with the
results for the next match, starting at the position\n * at which the last match ended (at the character after the last
matched character).\n */\n public fun next(): MatchResult?\n /**\n * Provides components
for destructuring assignment of group values.\n */\n * [component1] corresponds to the value of the first group,
[component2] of the second, and so on.\n */\n * If the group in the regular expression is optional and
there were no match captured by that group,\n * corresponding component value is an empty string.\n */\n *
@sample samples.text.Regexps.matchDestructuringToGroupValues\n */\n public class Destructured internal
constructor(public val match: MatchResult) {\n @kotlin.internal.InlineOnly\n public operator inline fun
component1(): String = match.groupValues[1]\n @kotlin.internal.InlineOnly\n public operator inline fun
component2(): String = match.groupValues[2]\n @kotlin.internal.InlineOnly\n public operator inline fun
component3(): String = match.groupValues[3]\n @kotlin.internal.InlineOnly\n public operator inline fun
component4(): String = match.groupValues[4]\n @kotlin.internal.InlineOnly\n
public operator inline fun component5(): String = match.groupValues[5]\n @kotlin.internal.InlineOnly\n
public operator inline fun component6(): String = match.groupValues[6]\n @kotlin.internal.InlineOnly\n
public operator inline fun component7(): String = match.groupValues[7]\n @kotlin.internal.InlineOnly\n
public operator inline fun component8(): String = match.groupValues[8]\n @kotlin.internal.InlineOnly\n
public operator inline fun component9(): String = match.groupValues[9]\n @kotlin.internal.InlineOnly\n
public operator inline fun component10(): String = match.groupValues[10]\n\n /**\n * Returns
destructured group values as a list of strings.\n * First value in the returned list corresponds to the value of the
first group, and so on.\n */\n * @sample samples.text.Regexps.matchDestructuringToGroupValues\n
*/\n public fun
toList(): List<String> = match.groupValues.subList(1, match.groupValues.size)\n }\n}", "/*\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass()\n@file:kotlin.jvm.JvmName("DurationUnitKt")\n\npackage
kotlin.time\n\n/**\n * The list of possible time measurement units, in which a duration can be expressed.\n */\n *
The smallest time unit is [NANOSECONDS] and the largest is [DAYS], which corresponds to exactly 24

```

```

[HOURLS].\n *\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\npublic expect enum class
DurationUnit {\n /**\n * Time unit representing one nanosecond, which is 1/1000 of a microsecond.\n *\n
NANOSECONDS,\n /**\n * Time unit representing one microsecond, which is 1/1000 of a millisecond.\n
*\n
MICROSECONDS,\n /**\n * Time unit representing
one millisecond, which is 1/1000 of a second.\n *\n
MILLISECONDS,\n /**\n * Time unit representing
one second.\n *\n
SECONDS,\n /**\n * Time unit representing one minute.\n *\n
MINUTES,\n
/**\n * Time unit representing one hour.\n *\n
HOURS,\n /**\n * Time unit representing one day, which
is always equal to 24 hours.\n *\n
DAYS;\n}\n\n/** Converts the given time duration [value] expressed in the
specified [sourceUnit] into the specified [targetUnit]. *\n@SinceKotlin("1.3")\n\ninternal expect fun
convertDurationUnit(value: Double, sourceUnit: DurationUnit, targetUnit: DurationUnit): Double\n\n// overflown
result is unspecified\n@SinceKotlin("1.5")\n\ninternal expect fun convertDurationUnitOverflow(value: Long,
sourceUnit: DurationUnit, targetUnit: DurationUnit): Long\n\n// overflown result is coerced in the Long range
boundaries\n@SinceKotlin("1.5")\n\ninternal expect fun convertDurationUnit(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit):
Long\n\n\n@SinceKotlin("1.3")\n\n@Suppress("REDUNDANT_ELSE_IN_WHEN")\n\ninternal fun
DurationUnit.shortName(): String = when (this) {\n DurationUnit.NANOSECONDS -> "\ns"\n
DurationUnit.MICROSECONDS -> "\nus"\n DurationUnit.MILLISECONDS -> "\ms"\n
DurationUnit.SECONDS -> "\s"\n DurationUnit.MINUTES -> "\m"\n DurationUnit.HOURS -> "\h"\n
DurationUnit.DAYS -> "\d"\n else -> error("Unknown unit: $this")\n}\n\n@SinceKotlin("1.5")\n\ninternal fun
durationUnitByShortName(shortName: String): DurationUnit = when (shortName) {\n "\ns" ->
DurationUnit.NANOSECONDS\n "\nus" -> DurationUnit.MICROSECONDS\n "\ms" ->
DurationUnit.MILLISECONDS\n "\s" -> DurationUnit.SECONDS\n "\m" -> DurationUnit.MINUTES\n
"\h" -> DurationUnit.HOURS\n "\d" -> DurationUnit.DAYS\n else -> throw
IllegalArgumentException("Unknown duration unit short name:
$shortName")\n}\n\n@SinceKotlin("1.5")\n\ninternal fun durationUnitByIsoChar(isoChar:
Char, isTimeComponent: Boolean): DurationUnit =\n when {\n !isTimeComponent -> {\n when
(isoChar) {\n 'D' -> DurationUnit.DAYS\n else -> throw IllegalArgumentException("Invalid or
unsupported duration ISO non-time unit: $isoChar")\n }\n }\n else -> {\n when (isoChar) {\n
'H' -> DurationUnit.HOURS\n 'M' -> DurationUnit.MINUTES\n 'S' ->
DurationUnit.SECONDS\n else -> throw IllegalArgumentException("Invalid duration ISO time unit:
$isoChar")\n }\n }\n },"/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\npackage kotlin.time\n\nimport kotlin.annotation.AnnotationTarget.*\n\n/**\n *
This annotation marks the experimental preview of
the standard library API for measuring time and working with durations.\n *\n * > Note that this API is in a preview
state and has a very high chance of being changed in the future.\n *\n * Do not use it if you develop a library since your
library will become binary incompatible\n * with the future versions of the standard library.\n *\n * Any usage of a
declaration annotated with `@ExperimentalTime` must be accepted either by\n * annotating that usage with the
[OptIn] annotation, e.g. `@OptIn(ExperimentalTime::class)`,\n * or by using the compiler argument `-opt-
in=kotlin.time.ExperimentalTime`.\n *\n\n@RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Target(\n
CLASS,\n ANNOTATION_CLASS,\n PROPERTY,\n FIELD,\n LOCAL_VARIABLE,\n
VALUE_PARAMETER,\n CONSTRUCTOR,\n FUNCTION,\n PROPERTY_GETTER,\n
PROPERTY_SETTER,\n TYPEALIAS)\n\n@SinceKotlin("1.3")\n\npublic annotation class
ExperimentalTime\n"/*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.time\n\n/**\n * A source of time for measuring time intervals.\n *\n * The only operation provided by the

```

```

time source is [markNow]. It returns a [TimeMark], which can be used to query the elapsed time later.
@see [measureTime]
@see [measureTimedValue]
@SinceKotlin("1.3")
@ExperimentalTime
public interface TimeSource {
    /**
     * Marks a point in time on this time source.
     *
     * The returned [TimeMark] instance encapsulates the captured time point and allows querying
     * the duration of time interval [elapsed][TimeMark.elapsedNow] from that point.
     */
    public fun markNow(): TimeMark

    /**
     * The most precise time source available in the platform.
     *
     * This time source returns its readings from a source of monotonic time when it is available in a target platform,
     * and resorts to a non-monotonic time source otherwise.
     */
    public object Monotonic : TimeSource by MonotonicTimeSource {
        override fun toString(): String = MonotonicTimeSource.toString()
    }

    /**
     * Represents a time point notched on a particular [TimeSource]. Remains bound to the time source it was taken from
     * and allows querying for the duration of time elapsed from that point (see the function [elapsedNow]).
     */
    @SinceKotlin("1.3")
    @ExperimentalTime
    public abstract class TimeMark {
        /**
         * Returns the amount of time passed from this mark measured with the time source from which this mark was taken.
         *
         * Note that the value returned by this function can change on subsequent invocations.
         */
        public abstract fun elapsedNow(): Duration

        /**
         * Returns a time mark on the same time source that is ahead of this time mark by the specified [duration].
         *
         * The returned time mark is more _late_ when the [duration] is positive, and more _early_ when the [duration] is negative.
         */
        public open operator fun plus(duration: Duration): TimeMark = AdjustedTimeMark(this, duration)

        /**
         * Returns a time mark on the same time source that is behind this time mark by the specified [duration].
         *
         * The returned time mark is more _early_ when the [duration] is positive, and more _late_ when the [duration] is negative.
         */
        public open operator fun minus(duration: Duration): TimeMark = plus(-duration)

        /**
         * Returns true if this time mark has passed according to the time source from which this mark was taken.
         *
         * Note that the value returned by this function can change on subsequent invocations.
         *
         * If the time source is monotonic, it can change only from `false` to `true`, namely, when the time mark becomes behind
         * the current point of the time source.
         */
        public fun hasPassedNow(): Boolean = !elapsedNow().isNegative()

        /**
         * Returns false if this time mark has not passed according to the time source from which this mark was taken.
         *
         * Note that the value returned by this function can change on subsequent invocations.
         *
         * If the time source is monotonic, it can change only from `true` to `false`, namely, when the time mark becomes behind the current point of the time source.
         */
        public fun hasNotPassedNow(): Boolean = elapsedNow().isNegative()
    }

    @ExperimentalTime
    @SinceKotlin("1.3")
    @kotlin.internal.InlineOnly
    @Deprecated(" Subtracting one TimeMark from another is not a well defined operation because these time marks could have been obtained from the different time sources.", level = DeprecationLevel.ERROR)
    @Suppress("UNUSED_PARAMETER")
    public inline operator fun TimeMark.minus(other: TimeMark): Duration = throw Error("Operation is disallowed.")

    @ExperimentalTime
    @SinceKotlin("1.3")
    @kotlin.internal.InlineOnly
    @Deprecated(" Comparing one TimeMark to another is not a well defined operation because these time marks could have been obtained from the different time sources.", level = DeprecationLevel.ERROR)
    @Suppress("UNUSED_PARAMETER")
    public inline operator fun TimeMark.compareTo(other: TimeMark): Int = throw Error("Operation is disallowed.")

    @ExperimentalTime
    private class AdjustedTimeMark(val mark: TimeMark, val adjustment: Duration) : TimeMark() {
        override fun elapsedNow(): Duration = mark.elapsedNow() - adjustment
        override fun plus(duration: Duration): TimeMark = AdjustedTimeMark(mark, adjustment + duration)
    }
}

/*
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 */
@package kotlin.time
@SinceKotlin("1.3")
@ExperimentalTime
internal expect object MonotonicTimeSource : TimeSource {
    /**
     * An abstract class used to implement time sources that return their readings as [Long] values in the specified [unit].
     *
     * @property unit The unit in which this time

```

```

source's readings are expressed.
*/@SinceKotlin("1.3")@ExperimentalTime
public abstract class
AbstractLongTimeSource(protected val unit: DurationUnit) : TimeSource {
    /** This protected method should be overridden to return the current reading of the time source expressed as a [Long] number in the unit specified by the [unit] property.
    protected abstract fun read(): Long
    private class
LongTimeMark(private val startedAt: Long, private val timeSource: AbstractLongTimeSource, private val offset: Duration) : TimeMark() {
    override fun elapsedNow(): Duration = (timeSource.read() - startedAt).toDuration(timeSource.unit) - offset
    override fun plus(duration: Duration): TimeMark = LongTimeMark(startedAt, timeSource, offset + duration)
}
override fun markNow(): TimeMark = LongTimeMark(read(), this, Duration.ZERO)
}
/** An abstract class used to implement time sources that return their readings as [Double] values in the specified [unit].
    @property unit The unit in which this time source's readings are expressed.
*/@SinceKotlin("1.3")@ExperimentalTime
public abstract class AbstractDoubleTimeSource(protected val unit: DurationUnit) : TimeSource {
    /** This protected method should be overridden to return the current reading of the time source expressed as a [Double] number in the unit specified by the [unit] property.
    protected abstract fun read(): Double
    private class DoubleTimeMark(private val startedAt: Double, private val timeSource: AbstractDoubleTimeSource, private val offset: Duration) : TimeMark() {
    override fun elapsedNow(): Duration = (timeSource.read() - startedAt).toDuration(timeSource.unit) - offset
    override fun plus(duration: Duration): TimeMark = DoubleTimeMark(startedAt, timeSource, offset + duration)
}
override fun markNow(): TimeMark = DoubleTimeMark(read(), this, Duration.ZERO)
}
/** A time source that has programmatically updatable readings. It is useful as a predictable source of time in tests.
    * The current reading value can be advanced by the specified duration amount with the operator [plusAssign]:
    * val timeSource = TestTimeSource()
    * timeSource += 10.seconds
    * Implementation note: the current reading value is stored as a [Long] number of nanoseconds, thus it's capable to represent a time range of approximately 1292 years.
    * Should the reading value overflow as the result of [plusAssign] operation, an [IllegalStateException] is thrown.
*/@SinceKotlin("1.3")@ExperimentalTime
public class TestTimeSource : AbstractLongTimeSource(unit = DurationUnit.NANOSECONDS) {
    private var reading: Long = 0L
    override fun read(): Long = reading
    /** Advances the current reading value of this time source by the specified [duration].
    * [duration] value is rounded down towards zero when converting it to a [Long] number of nanoseconds.
    * For example, if the duration being added is `0.6.nanoseconds`, the reading doesn't advance because the duration value is rounded to zero nanoseconds.
    * @throws IllegalStateException when the reading value overflows as the result of this operation.
    public operator fun plusAssign(duration: Duration) {
        val longDelta = duration.toLong(unit)
        reading = if (longDelta != Long.MIN_VALUE && longDelta != Long.MAX_VALUE) {
            // when delta fits in long, add it as long
            val newReading = reading + longDelta
            if (reading xor longDelta >= 0 && reading xor newReading < 0) overflow(duration)
            newReading
        } else {
            val delta = duration.toDouble(unit)
            // when delta is greater than long, add it as double
            val newReading = reading + delta
            if (newReading > Long.MAX_VALUE || newReading < Long.MIN_VALUE) overflow(duration)
            newReading.toLong()
        }
    }
    private fun overflow(duration: Duration) {
        throw IllegalStateException("TestTimeSource will overflow if its reading ${reading}ns is advanced by $duration.")
    }
}
/** Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.
    * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
    package kotlin.time
    import kotlin.contracts.*
    /** Executes the given function [block] and returns the duration of elapsed time interval.
    * The elapsed time is measured with [TimeSource.Monotonic].
    @SinceKotlin("1.3")@ExperimentalTime
    public inline fun measureTime(block: () -> Unit): Duration {
        contract {
            callsInPlace(block, InvocationKind.EXACTLY_ONCE)
        }
        return TimeSource.Monotonic.measureTime(block)
    }
    /** Executes the given function [block] and returns the duration of elapsed time interval.
    * The elapsed time is measured with the specified `this` [TimeSource] instance.

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun TimeSource.measureTime(block: () -> Unit):
Duration {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    val mark =
markNow()\n    block()\n    return mark.elapsedNow()\n}\n\n/**\n * Data class representing a result of executing
an action, along with the duration of elapsed time interval.\n *\n * @property value the result of the action.\n *\n * @property duration the time elapsed to execute the action.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic data class TimedValue<T>(val value:
T, val duration: Duration)\n\n/**\n * Executes the given function [block] and returns an instance of [TimedValue]
class, containing both\n * the result of the function execution and the duration of elapsed time interval.\n *\n * The
elapsed time is measured with [TimeSource.Monotonic].\n *\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic
inline fun <T> measureTimedValue(block: () -> T): TimedValue<T> {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    }\n    return
TimeSource.Monotonic.measureTimedValue(block)\n}\n\n/**\n * Executes the given [block] and returns an
instance of [TimedValue] class, containing both\n * the result of function execution and the duration of elapsed time
interval.\n *\n * The elapsed time is measured with the specified `this` [TimeSource] instance.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun <T> TimeSource.measureTimedValue(block: ()
-> T): TimedValue<T> {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    }\n    val mark = markNow()\n    val result = block()\n    return
TimedValue(result, mark.elapsedNow())\n}\n\n"/**\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n@package kotlin\n\nimport kotlin.coroutines.*\nimport
kotlin.coroutines.intrinsics.*\nimport kotlin.native.concurrent.SharedImmutable\n\n/**\n * Defines deep recursive
function that keeps its stack on the heap,\n * which allows very deep recursive computations that do not use the
actual call stack.\n * To initiate a call to this deep recursive function use its [invoke] function.\n * As a rule of
thumb, it should be used if recursion goes deeper than a thousand calls.\n *\n * The [DeepRecursiveFunction] takes
one parameter of type [T] and returns a result of type [R].\n * The [block] of code defines the body of a recursive
function.

In this block\n * [callRecursive][DeepRecursiveScope.callRecursive] function can be used to make a recursive
call\n * to the declared function. Other instances of [DeepRecursiveFunction] can be called\n * in this scope with
`callRecursive` extension, too.\n *\n * For example, take a look at the following recursive tree class and a deeply\n *
recursive instance of this tree with 100K nodes:\n *\n * ```\n * class Tree(val left: Tree? = null, val right: Tree? =
null)\n * val deepTree = generateSequence(Tree()) { Tree(it) }.take(100_000).last()\n * ```\n *\n * A regular
recursive function can be defined to compute a depth of a tree:\n *\n * ```\n * fun depth(t: Tree?): Int =\n *     if (t ==
null) 0 else max(depth(t.left), depth(t.right)) + 1\n * println(depth(deepTree)) // StackOverflowError\n * ```\n *\n *
If this `depth` function is called for a `deepTree` it produces [StackOverflowError] because of deep recursion.\n *
However, the `depth` function can be rewritten using `DeepRecursiveFunction`
in the following way, and then\n * it successfully computes [depth(deepTree)][DeepRecursiveFunction.invoke]
expression:\n *\n * ```\n * val depth = DeepRecursiveFunction<Tree?, Int> { t ->\n *     if (t == null) 0 else
max(callRecursive(t.left), callRecursive(t.right)) + 1\n * }\n * println(depth(deepTree)) // Ok\n * ```\n *\n * Deep
recursive functions can also mutually call each other using a heap for the stack via\n *
[callRecursive][DeepRecursiveScope.callRecursive] extension. For example, the\n * following pair of mutually
recursive functions computes the number of tree nodes at even depth in the tree.\n *\n * ```\n * val mutualRecursion
= object {\n *     val even: DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->\n *         if (t ==
null) 0 else odd.callRecursive(t.left) + odd.callRecursive(t.right) + 1\n *     }\n *     val odd:
DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->\n *         if (t == null) 0 else
even.callRecursive(t.left)
+ even.callRecursive(t.right)\n *     }\n * }\n * ```\n *\n * @param [T] the function parameter type.\n * @param [R]
the function result type.\n * @param block the function body.\n
*\n@SinceKotlin("1.4")\n@ExperimentalStdlibApi\npublic class DeepRecursiveFunction<T, R>(\n    internal val

```



```

(true) {\n          // Note: cont is set to null in DeepRecursiveScopeImpl.resumeWith when the whole computation
completes\n          val result = this.result\n          val cont = this.cont\n          ?: return (result as
Result<R>).getOrThrow() // done -- final result\n          // The order of comparison is important here for that case of
rogue class with broken equals\n          if (UNDEFINED_RESULT == result) {\n          // call \"function\" with
\"value\" using \"cont\" as completion\n          val r = try {\n          // This is block.startCoroutine(this,
value, cont)\n          function.startCoroutineUninterceptedOrReturn(this, value, cont)\n          } catch (e:
Throwable) {\n
cont.resumeWithException(e)\n          continue\n          }\n          // If the function returns without
suspension -- calls its continuation immediately\n          if (r !== COROUTINE_SUSPENDED)\ncont.resume(r as R)\n          } else {\n          // we returned from a crossFunctionCompletion trampoline -- call
resume here\n          this.result = UNDEFINED_RESULT // reset result back\ncont.resumeWith(result)\n          }\n          }\n          }\n          }\"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n\n// Auto-generated file. DO NOT
EDIT!\n\n@file:kotlin.jvm.JvmName(\"NumbersKt\")\n\n@file:kotlin.jvm.JvmMultifileClass\n\npackage
kotlin\n\nimport kotlin.math.sign\n\n/** Divides this value by the other value, flooring the result to an integer that is
closer
to negative infinity. *\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Byte.floorDiv(other:
Byte): Int = \n this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute
value less than the absolute value of the divisor.\n *\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic
inline fun Byte.mod(other: Byte): Byte = \n this.toInt().mod(other.toInt()).toByte()\n\n/** Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.
*\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Byte.floorDiv(other: Short): Int = \n
this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring division of this value by the other
value.\n * \n * The result is either zero or has the same sign as the _divisor_
and has the absolute value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Byte.mod(other: Short): Short = \n
this.toInt().mod(other.toInt()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer
that is closer to negative infinity. *\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
Byte.floorDiv(other: Int): Int = \n this.toInt().floorDiv(other)\n\n/**\n * Calculates the remainder of flooring
division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and
has the absolute value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Byte.mod(other: Int): Int = \n
this.toInt().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to
negative infinity. *\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic
inline fun Byte.floorDiv(other: Long): Long = \n this.toLong().floorDiv(other)\n\n/**\n * Calculates the
remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign
as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Byte.mod(other: Long): Long = \n
this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer
to negative infinity. *\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Short.floorDiv(other:
Byte): Int = \n this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute
value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun Short.mod(other: Byte): Byte = \n
this.toInt().mod(other.toInt()).toByte()\n\n/** Divides this value by the other value, flooring the result to an integer
that is closer to negative infinity. *\n\n@SinceKotlin(\"1.5\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun

```



```

Short.floorDiv(other: Short): Int = \n  this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Short.mod(other: Short): Short = \n this.toInt().mod(other.toInt()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Short.floorDiv(other: Int): Int = \n  this.toInt().floorDiv(other)\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Short.mod(other: Int): Int = \n this.toInt().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Short.floorDiv(other: Long): Long = \n  this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Short.mod(other: Long): Long = \n  this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.floorDiv(other: Byte): Int = \n this.floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Byte): Byte = \n  this.mod(other.toInt()).toByte()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.floorDiv(other: Short): Int = \n this.floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Short): Short = \n this.mod(other.toInt()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.floorDiv(other: Int): Int {\n  var q = this / other\n  if (this xor other < 0 && q * other != this) q--\n  return q\n}\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Int): Int {\n  val r = this % other\n  return r + (other and (((r xor other) and (r or -r)) shr 31))\n}\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.floorDiv(other: Long): Long = \n this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Int.mod(other: Long): Long = \n  this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Long.floorDiv(other: Byte): Long = \n this.floorDiv(other.toLong())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun Long.mod(other: Byte): Byte = \n this.mod(other.toLong()).toByte()\n\n/** Divides this value by the other value, flooring the result to an integer that

```

```

is closer to negative infinity.
@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Long.floorDiv(other: Short): Long =
    this.floorDiv(other.toLong())
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Long.mod(other: Short): Short =
    this.mod(other.toLong()).toShort()
    Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Long.floorDiv(other: Int): Long =
    this.floorDiv(other.toLong())
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Long.mod(other: Int): Int =
    this.mod(other.toLong()).toInt()
    Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Long.floorDiv(other: Long): Long {
    var q = this / other
    if (this xor other < 0 && q * other != this) q--
    return q
}
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Long.mod(other: Long): Long {
    val r = this % other
    return r + (other and (((r xor other) and (r or -r)) shr 63))
}
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
    * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Float.mod(other: Float): Float {
    val r = this % other
    return if (r != 0.0.toFloat() && r.sign != other.sign) r + other else r
}
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
    * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Float.mod(other: Double): Double =
    this.toDouble().mod(other)
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
    * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Double.mod(other: Float): Double =
    this.mod(other.toDouble())
    * Calculates the remainder of flooring division of this value by the other value.
    * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
    * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.

@SinceKotlin("1.5")@kotlin.internal.InlineOnly
public inline fun Double.mod(other: Double): Double {
    val r = this % other
    return if (r != 0.0 && r.sign != other.sign) r + other else r
}
    * Copyright 2010-2018

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@npackage kotlin
nimport kotlin.internal.InlineOnly
n
    * Returns a hash code value for the object or zero if the object is `null`.

@see Any.hashCode
@SinceKotlin("1.3")@InlineOnly
public inline fun Any?.hashCode(): Int =
    this?.hashCode() ?: 0
    * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language

```



```

otherwise.\n * Once this function has returned `true` it stays `true` for the rest of lifetime of this Lazy instance.\n
*/\n public fun isInitialized(): Boolean\n}\n\n/**\n * Creates a new instance of the [Lazy] that is already
initialized with the specified [value].\n */\npublic fun <T> lazyOf(value: T): Lazy<T> =
InitializedLazyImpl(value)\n\n/**\n * An extension to delegate a read-only property of type [T] to an instance of
[Lazy].\n */\n * This extension allows to use instances of Lazy for property
delegation:\n * `val property: String by lazy { initializer }`\n */\n@kotlin.internal.InlineOnly\npublic inline operator
fun <T> Lazy<T>.getValue(thisRef: Any?, property: KProperty<*>): T = value\n\n/**\n * Specifies how a [Lazy]
instance synchronizes initialization among multiple threads.\n */\npublic enum class LazyThreadSafetyMode {\n\n
/**\n * Locks are used to ensure that only a single thread can initialize the [Lazy] instance.\n */\n
SYNCHRONIZED,\n\n /**\n * Initializer function can be called several times on concurrent access to
uninitialized [Lazy] instance value,\n * but only the first returned value will be used as the value of [Lazy]
instance.\n */\n PUBLICATION,\n\n /**\n * No locks are used to synchronize an access to the [Lazy]
instance value; if the instance is accessed from multiple threads, its behavior is undefined.\n */\n * This mode
should not be used unless the [Lazy] instance is guaranteed never to be initialized
from more than one thread.\n */\n NONE,\n}\n\ninternal object UNINITIALIZED_VALUE\n\n// internal to
be called from lazy in JS\ninternal class UnsafeLazyImpl<out T>(initializer: () -> T) : Lazy<T>, Serializable {\n
private var initializer: (() -> T)? = initializer\n private var _value: Any? = UNINITIALIZED_VALUE\n\n
override val value: T\n get() {\n if (_value === UNINITIALIZED_VALUE) {\n _value =
initializer!()\n initializer = null\n }\n @Suppress("UNCHECKED_CAST")\n return
_value as T\n }\n\n override fun isInitialized(): Boolean = _value !== UNINITIALIZED_VALUE\n\n
override fun toString(): String = if (isInitialized()) value.toString() else "Lazy value not initialized yet."\n\n
private fun writeReplace(): Any = InitializedLazyImpl(value)\n}\n\ninternal class InitializedLazyImpl<out
T>(override val value: T) : Lazy<T>, Serializable {\n override fun isInitialized():
Boolean = true\n override fun toString(): String = value.toString()\n}\n\n"/*\n * Copyright 2010-2019
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("NumbersKt")\npackage kotlin\n\n/**\n *
Counts the number of set bits in the binary representation of this [Int] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.countOneBits(): Int\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary
representation of this [Int] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.countLeadingZeroBits(): Int\n\n/**\n * Counts the number of consecutive least significant bits that are zero in
the binary representation of this [Int] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
expect fun Int.countTrailingZeroBits(): Int\n\n/**\n * Returns a number having a single bit set in the position of the
most significant set bit of this [Int] number,\n * or zero, if this number is zero.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.takeHighestOneBit(): Int\n\n/**\n * Returns a number having a single bit set in the position of the least
significant set bit of this [Int] number,\n * or zero, if this number is zero.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.takeLowestOneBit(): Int\n\n/**\n * Rotates the binary representation of this [Int] number left by the specified
[bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least
significant bits on the right side.\n * Rotating the number left by a negative bit count is the same
as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating
by a multiple of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateLeft(n) ==
number.rotateLeft(n % 32)`\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun

```

Int.rotateLeft(bitCount: Int): Int\n\n/**\n * Rotates the binary representation of this [Int] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 32)`\n

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.rotateRight(bitCount: Int): Int\n\n/**\n * Counts the number of set bits in the binary representation of this [Long] number.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.countOneBits(): Int\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Long] number.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.countLeadingZeroBits(): Int\n\n/**\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Long] number.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.countTrailingZeroBits(): Int\n\n/**\n * Returns a number having a single bit set in the position of the most significant set bit of this [Long] number,\n * or zero, if this number is zero.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.takeHighestOneBit(): Long\n\n/**\n * Returns a number having a single bit set in the position of the least significant set bit of this [Long] number,\n * or zero, if this number is zero.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.takeLowestOneBit(): Long\n\n/**\n * Rotates the binary representation of this [Long] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n *\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n *\n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 64)`\n

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.rotateLeft(bitCount: Int): Long\n\n/**\n * Rotates the binary representation of this [Long] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 64)`\n

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.rotateRight(bitCount: Int): Long\n\n/**\n * Counts the number of set bits in the binary representation of this [Byte] number.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.countOneBits(): Int = (toInt() and 0xFF).countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Byte] number.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.countLeadingZeroBits(): Int = (toInt() and 0xFF).countLeadingZeroBits() - (Int.SIZE_BITS - Byte.SIZE_BITS)\n\n/**\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Byte] number.\n

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.countTrailingZeroBits(): Int = (toInt() or 0x100).countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most significant set bit of this [Byte] number,\n * or zero, if this

number is zero.\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
```

```
c inline fun Byte.takeHighestOneBit(): Byte = (toInt() and 0xFF).takeHighestOneBit().toByte()\n\n/**\n * Returns a number having a single bit set in the position of the least significant set bit of this [Byte] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic c inline fun Byte.takeLowestOneBit(): Byte = toInt().takeLowestOneBit().toByte()\n\n/**\n * Rotates the binary representation of this [Byte] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 8)`\n
```

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
```

```
Byte.rotateLeft(bitCount: Int): Byte =\n    (toInt().shl(bitCount and 7) or (toInt() and 0xFF).ushr(8 - (bitCount and 7))).toByte()\n\n/**\n * Rotates the binary representation of this [Byte] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 8)`\n
```

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
```

```
Byte.rotateRight(bitCount: Int): Byte =\n    (toInt().shl(8 - (bitCount and 7)) or (toInt() and 0xFF).ushr(bitCount and 7)).toByte()\n\n/**\n * Counts the number of set bits in the binary representation of this [Short] number.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic c inline fun Short.countOneBits(): Int = (toInt() and 0xFFFF).countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Short] number.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic c inline fun Short.countLeadingZeroBits(): Int =\n    (toInt() and 0xFFFF).countLeadingZeroBits() - (Int.SIZE_BITS - Short.SIZE_BITS)\n\n/**\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Short] number.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic c inline fun Short.countTrailingZeroBits():
```

```
Int = (toInt() or 0x10000).countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most significant set bit of this [Short] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic c inline fun Short.takeHighestOneBit(): Short = (toInt() and 0xFFFF).takeHighestOneBit().toShort()\n\n/**\n * Returns a number having a single bit set in the position of the least significant set bit of this [Short] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic c inline fun Short.takeLowestOneBit(): Short = toInt().takeLowestOneBit().toShort()\n\n/**\n * Rotates the binary representation of this [Short] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number
```

```
as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 16)`\n
```

```

*\/n@SinceKotlin("1.6")\/n@WasExperimental(ExperimentalStdlibApi::class)\/npublic fun
Short.rotateLeft(bitCount: Int): Short =\/n (toInt().shl(bitCount and 15) or (toInt() and 0xFFFF).ushr(16 - (bitCount
and 15))).toShort()\/n\/n**\/n * Rotates the binary representation of this [Short] number right by the specified
[bitCount] number of bits.\/n * The least significant bits pushed out from the right side reenter the number as the
most significant bits on the left side.\/n *\/n * Rotating the number right by a negative bit count is the same as rotating
it left by the negated bit count:\/n * `number.rotateRight(-n) ==
number.rotateLeft(n)`\/n * Rotating by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more
generally\/n * `number.rotateRight(n) == number.rotateRight(n % 16)`\/n
*\/n@SinceKotlin("1.6")\/n@WasExperimental(ExperimentalStdlibApi::class)\/npublic fun
Short.rotateRight(bitCount: Int): Short =\/n (toInt().shl(16 - (bitCount and 15)) or (toInt() and
0xFFFF).ushr(bitCount and 15)).toShort()\/n"/**\/n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\/n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\/n *\/n\/npackage kotlin\/nimport kotlin.internal.RequireKotlin\/nimport
kotlin.internal.RequireKotlinVersionKind\/n\/n@kotlin.internal.InlineOnly\/n@SinceKotlin("1.2")\/n@Suppress("IN
VISIBLE_MEMBER", "INVISIBLE_REFERENCE")\/n@RequireKotlin("1.2.30", level =
DeprecationLevel.HIDDEN, versionKind = RequireKotlinVersionKind.COMPILER_VERSION)\/npublic inline fun
<R> suspend(noinline
block: suspend () -> R): suspend () -> R = block\/n"/**\/n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\/n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\/n *\/n@file:kotlin.jvm.JvmName("TuplesKt")\/n\/npackage
kotlin\/n\/n**\/n * Represents a generic pair of two values.\/n *\/n * There is no meaning attached to values in this
class, it can be used for any purpose.\/n * Pair exhibits value semantics, i.e. two pairs are equal if both components
are equal.\/n *\/n * An example of decomposing it into values:\/n * @sample samples.misc.Tuples.pairDestructuring\/n
*\/n * @param A type of the first value.\/n * @param B type of the second value.\/n * @property first First value.\/n *
@property second Second value.\/n * @constructor Creates a new instance of Pair.\/n *\/npublic data class Pair<out
A, out B>(\/n public val first: A,\/n public val second: B) : Serializable {\/n\/n /**\/n * Returns
string representation of the [Pair] including its [first] and [second] values.\/n *\/n public override fun toString():
String = "$first, $second"\/n}\/n\/n**\/n * Creates a tuple of type [Pair] from this and [that].\/n *\/n * This can be
useful for creating [Map] literals with less noise, for example:\/n * @sample
samples.collections.Maps.instantiation.mapFromPairs\/n *\/npublic infix fun <A, B> A.to(that: B): Pair<A, B> =
Pair(this, that)\/n\/n**\/n * Converts this pair into a list.\/n * @sample samples.misc.Tuples.pairToList\/n *\/npublic
fun <T> Pair<T, T>.toList(): List<T> = listOf(first, second)\/n\/n**\/n * Represents a triad of values\/n *\/n * There is
no meaning attached to values in this class, it can be used for any purpose.\/n * Triple exhibits value semantics, i.e.
two triples are equal if all three components are equal.\/n * An example of decomposing it into values:\/n * @sample
samples.misc.Tuples.tripleDestructuring\/n *\/n * @param A type of the first value.\/n * @param B type
of the second value.\/n * @param C type of the third value.\/n * @property first First value.\/n * @property second
Second value.\/n * @property third Third value.\/n *\/npublic data class Triple<out A, out B, out C>(\/n public val
first: A,\/n public val second: B,\/n public val third: C) : Serializable {\/n\/n /**\/n * Returns string
representation of the [Triple] including its [first], [second] and [third] values.\/n *\/n public override fun
toString(): String = "$first, $second, $third"\/n}\/n\/n**\/n * Converts this triple into a list.\/n * @sample
samples.misc.Tuples.tripleToList\/n *\/npublic fun <T> Triple<T, T, T>.toList(): List<T> = listOf(first, second,
third)\/n"/**\/n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\/n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\/n *\/n\/n//
Auto-generated file. DO NOT EDIT!\/n\/npackage kotlin.ranges\/n\/n\/nimport kotlin.internal.*\/n\/n**\/n
* A range of values of type `UInt`.\/n
*\/n@SinceKotlin("1.5")\/n@WasExperimental(ExperimentalUnsignedTypes::class)\/npublic class UIntRange(start:
UInt, endInclusive: UInt) : UIntProgression(start, endInclusive, 1), ClosedRange<UInt> {\/n override val start:
UInt get() = first\/n override val endInclusive: UInt get() = last\/n\/n override fun contains(value: UInt): Boolean =

```

```

first <= value && value <= last\n\n  /** \n   * Checks if the range is empty.\n   \n   * The range is empty if its
start value is greater than the end value.\n   */\n  override fun isEmpty(): Boolean = first > last\n\n  override fun
equals(other: Any?): Boolean =\n    other is UIntRange && (isEmpty() && other.isEmpty()) ||\n    first ==
other.first && last == other.last\n\n  override fun hashCode(): Int =\n    if (isEmpty()) -1 else (31 * first.toInt()
+ last.toInt())\n\n  override fun toString(): String = "$first..$last"\n\n  companion object {\n
    /** An empty range of values of type UInt. */\n    public val EMPTY: UIntRange =
UIntRange(UInt.MAX_VALUE, UInt.MIN_VALUE)\n  }\n\n  /** \n   * A progression of values of type `UInt`.\n
*/\n  @SinceKotlin("1.5")\n  @WasExperimental(ExperimentalUnsignedTypes::class)\n  public open class
UIntProgression\n  internal constructor(\n    start: UInt,\n    endInclusive: UInt,\n    step: Int\n  ) : Iterable<UInt> {\n
    init {\n      if (step == 0.toInt()) throw kotlin.IllegalArgumentException("Step must be non-zero.")\n      if (step
== Int.MIN_VALUE) throw kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to
avoid overflow on negation.")\n    }\n\n    /** \n     * The first element in the progression.\n     */\n    public val first:
UInt = start\n\n    /** \n     * The last element in the progression.\n     */\n    public val last: UInt =
getProgressionLastElement(start, endInclusive, step)\n\n    /** \n     * The step of the progression.\n     */\n    public
val step:
Int = step\n\n    final override fun iterator(): Iterator<UInt> = UIntProgressionIterator(first, last, step)\n\n    /** \n
     * Checks if the progression is empty.\n     \n     * Progression with a positive step is empty if its first element is
greater than the last element.\n     * Progression with a negative step is empty if its first element is less than the last
element.\n     */\n    public open fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun
equals(other: Any?): Boolean =\n    other is UIntProgression && (isEmpty() && other.isEmpty()) ||\n    first == other.first && last == other.last && step == other.step\n\n    override fun hashCode(): Int =\n    if
(isEmpty()) -1 else (31 * (31 * first.toInt() + last.toInt()) + step.toInt())\n\n    override fun toString(): String = if (step
> 0) "$first..$last step $step" else "$first downTo $last step ${-step}"\n\n    companion object {\n      /** \n
       * Creates UIntProgression
       within the specified bounds of a closed range.\n       \n       * The progression starts with the [rangeStart] value and goes
toward the [rangeEnd] value not excluding it, with the specified [step].\n       \n       * In order to go backwards the [step]
must be negative.\n       \n       * [step] must be greater than `Int.MIN_VALUE` and not equal to zero.\n       */\n      public fun fromClosedRange(rangeStart: UInt, rangeEnd: UInt, step: Int): UIntProgression =
UIntProgression(rangeStart, rangeEnd, step)\n    }\n\n    /** \n     * An iterator over a progression of values of type
`UInt`.\n     \n     * @property step the number by which the value is incremented on each step.\n     */\n    @SinceKotlin("1.3")\n    @Suppress("DEPRECATION_ERROR")\n    private class UIntProgressionIterator(first:
UInt, last: UInt, step: Int) : UIntIterator() {\n      private val finalElement = last\n      private var hasNext: Boolean = if
(step > 0) first <= last else first >= last\n      private val step = step.toInt() // use
2-complement math for negative steps\n      private var next = if (hasNext) first else finalElement\n\n      override fun
hasNext(): Boolean = hasNext\n\n      override fun nextUInt(): UInt {\n        val value = next\n        if (value ==
finalElement) {\n          if (!hasNext) throw kotlin.NoSuchElementException()\n          hasNext = false\n        }
else {\n          next += step\n        }\n        return value\n      }\n    }\n\n    /** \n     * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n     * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n     */\n    @Auto-generated file. DO NOT EDIT!\n    @package
kotlin.collections\n    /** An iterator over a sequence of values of type `UByte`. */\n    @Deprecated("This class is not
going to be stabilized and is to be removed soon.", level =
DeprecationLevel.ERROR)\n    @SinceKotlin("1.3")\n    public abstract class UByteIterator : Iterator<UByte> {\n
    final override
fun next() = nextUByte()\n\n    /** Returns the next value in the sequence without boxing. */\n    public abstract fun
nextUByte(): UByte\n  }\n\n  /** An iterator over a sequence of values of type `UShort`. */\n  @Deprecated("This class
is not going to be stabilized and is to be removed soon.", level =
DeprecationLevel.ERROR)\n  @SinceKotlin("1.3")\n  public abstract class UShortIterator : Iterator<UShort> {\n
    final override fun next() = nextUShort()\n\n    /** Returns the next value in the sequence without boxing. */\n

```



```

public abstract fun nextUShort(): UShort\n}\n\n** An iterator over a sequence of values of type `UInt`.
*\n@Deprecated("This class is not going to be stabilized and is to be removed soon.", level =
DeprecationLevel.ERROR)\n@SinceKotlin("1.3")\npublic abstract class UIntIterator : Iterator<UInt> {\n    final
override fun next() = nextUInt()\n\n    /** Returns the next value in the sequence without boxing. */\n    public
abstract fun nextUInt(): UInt\n}\n\n** An
iterator over a sequence of values of type `ULong`. *\n@Deprecated("This class is not going to be stabilized and
is to be removed soon.", level = DeprecationLevel.ERROR)\n@SinceKotlin("1.3")\npublic abstract class
ULongIterator : Iterator<ULong> {\n    final override fun next() = nextULong()\n\n    /** Returns the next value in
the sequence without boxing. */\n    public abstract fun nextULong(): ULong\n}\n\n", /*\n * Copyright 2010-2022
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin.ranges\n\n\nimport kotlin.internal.*\n\n**\n * A range of values of type `ULong`. \n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic class
ULongRange(start: ULong, endInclusive: ULong) : ULongProgression(start, endInclusive, 1),
ClosedRange<ULong> {\n    override val start:
ULong get() = first\n    override val endInclusive: ULong get() = last\n\n    override fun contains(value: ULong):
Boolean = first <= value && value <= last\n\n    /** \n    * Checks if the range is empty.\n    \n    * The range is
empty if its start value is greater than the end value.\n    */\n    override fun isEmpty(): Boolean = first > last\n\n
override fun equals(other: Any?): Boolean =\n        other is ULongRange && (isEmpty() && other.isEmpty()) ||\n
        first == other.first && last == other.last\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31
* (first xor (first shr 32)).toInt() + (last xor (last shr 32)).toInt())\n\n    override fun toString(): String =
"\$first..\$last"\n\n    companion object {\n        /** An empty range of values of type ULong. */\n        public val
EMPTY: ULongRange = ULongRange(ULong.MAX_VALUE, ULong.MIN_VALUE)\n    }\n}\n\n**\n * A
progression of values of type `ULong`. \n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
open class ULongProgression\ninternal constructor(\n    start: ULong,\n    endInclusive: ULong,\n    step: Long\n) :
Iterable<ULong> {\n    init {\n        if (step == 0.toLong()) throw kotlin.IllegalArgumentException("\Step must be
non-zero.")\n        if (step == Long.MIN_VALUE) throw kotlin.IllegalArgumentException("\Step must be greater
than Long.MIN_VALUE to avoid overflow on negation.")\n    }\n\n    /**\n    * The first element in the
progression.\n    */\n    public val first: ULong = start\n\n    /**\n    * The last element in the progression.\n    */\n
public val last: ULong = getProgressionLastElement(start, endInclusive, step)\n\n    /**\n    * The step of the
progression.\n    */\n    public val step: Long = step\n\n    final override fun iterator(): Iterator<ULong> =
ULongProgressionIterator(first, last, step)\n\n    /** \n    * Checks if the progression is empty.\n    \n    *
Progression with a positive
step is empty if its first element is greater than the last element.\n    * Progression with a negative step is empty if
its first element is less than the last element.\n    */\n    public open fun isEmpty(): Boolean = if (step > 0) first > last
else first < last\n\n    override fun equals(other: Any?): Boolean =\n        other is ULongProgression && (isEmpty()
&& other.isEmpty()) ||\n        first == other.first && last == other.last && step == other.step\n\n    override fun
hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (31 * (first xor (first shr 32)).toInt() + (last xor (last shr
32)).toInt()) + (step xor (step ushr 32)).toInt())\n\n    override fun toString(): String = if (step > 0) "\$first..\$last
step\n\n    companion object {\n        /**\n        * Creates
ULongProgression within the specified bounds of a closed range.\n        * The progression starts with the
[rangeStart] value and goes toward the
[rangeEnd] value not excluding it, with the specified [step].\n        * In order to go backwards the [step] must be
negative.\n        *\n        * [step] must be greater than `Long.MIN_VALUE` and not equal to zero.\n        */\n
public fun fromClosedRange(rangeStart: ULong, rangeEnd: ULong, step: Long): ULongProgression =
ULongProgression(rangeStart, rangeEnd, step)\n    }\n}\n\n**\n * An iterator over a progression of values of type
`ULong`. \n * @property step the number by which the value is incremented on each step.\n

```

```

*\n@SinceKotlin("1.3")\n@Suppress("DEPRECATION_ERROR")\nprivate class
ULongProgressionIterator(first: ULong, last: ULong, step: Long) : ULongIterator() {\n  private val finalElement =
last\n  private var hasNext: Boolean = if (step > 0) first <= last else first >= last\n  private val step =
step.toULong() // use 2-complement math for negative steps\n  private var next = if (hasNext) first else
finalElement\n\n  override fun hasNext(): Boolean
= hasNext\n\n  override fun nextULong(): ULong {\n    val value = next\n    if (value == finalElement) {\n
if (!hasNext) throw kotlin.NoSuchElementException()\n    hasNext = false\n    } else {\n    next +=
step\n    }\n    return value\n  }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.math\n\n/**\n * Returns the smaller of two values.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun min(a: UInt, b: UInt): UInt {\n  return minOf(a, b)\n}\n\n"/*\n * Returns the smaller of two
values.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun min(a: ULong, b: ULong): ULong {\n  return minOf(a,
b)\n}\n\n"/*\n * Returns the greater of two values.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun max(a: UInt, b: UInt): UInt {\n  return maxOf(a, b)\n}\n\n"/*\n * Returns the greater of two
values.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun max(a: ULong, b: ULong): ULong {\n  return maxOf(a, b)\n}\n\n"/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmName("UNumbersKt")\npackage kotlin\n\n/**\n * Counts the number of set bits in the
binary representation of this [UInt] number.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countOneBits():
Int = toInt().countOneBits()\n\n"/*\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UInt] number.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countLeadingZeroBits(): Int =
toInt().countLeadingZeroBits()\n\n"/*\n * Counts the number of consecutive least significant bits that are zero in the
binary representation of this [UInt] number.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countTrailingZeroBits(): Int =
toInt().countTrailingZeroBits()\n\n"/*\n * Returns a number having a single bit set in the position of the most
significant set bit of this [UInt] number,\n * or zero, if this number is zero.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.takeHighestOneBit(): UInt =
toInt().takeHighestOneBit().toUInt()\n\n"/*\n * Returns a number having a single bit set in the position of the least
significant set bit of this [UInt] number,\n * or zero, if this number is zero.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.takeLowestOneBit(): UInt =
toInt().takeLowestOneBit().toUInt()\n\n"/*\n * Rotates the binary representation of this [UInt] number left by the
specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as
the least significant bits on the right side.\n * \n * Rotating the number left by a negative bit count is the same as
rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * \n * Rotating by a
multiple of [UInt.SIZE_BITS]

```

```

(32) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.rotateLeft(bitCount: Int):
UInt = toInt().rotateLeft(bitCount).toUInt()\n\n/**\n * Rotates the binary representation of this [UInt] number
right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter
the number as the most significant bits on the left side.\n * \n * Rotating the number right by a negative bit count is
the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * \n *
Rotating by a multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n *
`number.rotateRight(n) == number.rotateRight(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun UInt.rotateRight(bitCount: Int): UInt = toInt().rotateRight(bitCount).toUInt()\n\n/**\n * Counts the
number of set bits in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countOneBits(): Int =
toLong().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countLeadingZeroBits(): Int
= toLong().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countTrailingZeroBits(): Int
= toLong().countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most
significant set bit of this [ULong] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeHighestOneBit(): ULong
= toLong().takeHighestOneBit().toULong()\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [ULong] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeLowestOneBit(): ULong
= toLong().takeLowestOneBit().toULong()\n\n/**\n * Rotates the binary representation
of this [ULong] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out
from the left side reenter the number as the least significant bits on the right side.\n * \n * Rotating the number left
by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) ==
number.rotateRight(n)`\n * \n * Rotating by a multiple of [ULong.SIZE_BITS] (64) returns the same number, or
more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.rotateLeft(bitCount:
Int): ULong = toLong().rotateLeft(bitCount).toULong()\n\n/**\n * Rotates the binary representation of this [ULong]
number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side
reenter the number as the most significant bits
on the left side.\n * \n * Rotating the number right by a negative bit count is the same as rotating it left by the
negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * \n * Rotating by a multiple of
[ULong.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateRight(n) ==
number.rotateRight(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.rotateRight(bitCount:
Int): ULong = toLong().rotateRight(bitCount).toULong()\n\n/**\n * Counts the number of set bits in the binary

```

```

representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countOneBits(): Int =
toUInt().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of
this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countLeadingZeroBits(): Int =
toByte().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero in
the binary representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countTrailingZeroBits(): Int =
toByte().countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most
significant set bit of this [UByte] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.takeHighestOneBit(): UByte
= toInt().takeHighestOneBit().toUByte()\n\n/**\n
* Returns a number having a single bit set in the position of the least significant set bit of this [UByte] number,\n *
or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.takeLowestOneBit(): UByte =
toInt().takeLowestOneBit().toUByte()\n\n/**\n * Rotates the binary representation of this [UByte] number left by
the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the
number as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the
same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n *
Rotating by a multiple of [UByte.SIZE_BITS] (8) returns the same number, or more generally\n *
`number.rotateLeft(n) == number.rotateLeft(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.rotateLeft(bitCount:
Int): UByte = toByte().rotateLeft(bitCount).toUByte()\n\n/**\n * Rotates the binary representation of this [UByte]
number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side
reenter the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit
count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n
*\n * Rotating by a multiple of [UByte.SIZE_BITS] (8) returns the same number, or more generally\n *
`number.rotateRight(n) == number.rotateRight(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.rotateRight(bitCount:
Int): UByte = toByte().rotateRight(bitCount).toUByte()\n\n
* Counts the number of set bits in the binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countOneBits(): Int =
toUInt().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countLeadingZeroBits(): Int =
toShort().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countTrailingZeroBits():

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Int = toShort().countTrailingZeroBits()\n\n**\n * Returns a number having a single bit set in the position of the
most significant set bit of this [UShort] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeHighestOneBit(): UShort
= toInt().takeHighestOneBit().toUShort()\n\n**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [UShort] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeLowestOneBit(): UShort
= toInt().takeLowestOneBit().toUShort()\n\n**\n * Rotates the binary representation of this [UShort] number left
by the specified [bitCount] number of bits.\n * The most significant bits pushed out
from the left side reenter the number as the least significant bits on the right side.\n *\n * Rotating the number left
by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) ==
number.rotateRight(n)`\n *\n * Rotating by a multiple of [UShort.SIZE_BITS] (16) returns the same number, or
more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 16)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.rotateLeft(bitCount:
Int): UShort = toShort().rotateLeft(bitCount).toUShort()\n\n**\n * Rotates the binary representation of this
[UShort] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the
right side reenter the number as the most significant bits on the left side.\n *\n * Rotating the number right by a
negative bit count is the same as rotating it left by the
negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple of
[UShort.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateRight(n) ==
number.rotateRight(n % 16)`\n *\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.rotateRight(bitCount:
Int): UShort = toShort().rotateRight(bitCount).toUShort()\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n@package kotlin.internal\n\n// (a - b) mod c\nprivate fun
differenceModulo(a: UInt, b: UInt, c: UInt): UInt {\n    val ac = a % c\n    val bc = b % c\n    return if (ac >= bc) ac -
bc else ac - bc + c\n}\n\nprivate fun differenceModulo(a: ULong, b: ULong, c: ULong): ULong {\n    val ac = a %
c\n    val bc
= b % c\n    return if (ac >= bc) ac - bc else ac - bc + c\n}\n\n**\n * Calculates the final element of a bounded
arithmetic progression, i.e. the last element of the progression which is in the range\n * from [start] to [end] in case
of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n *\n * No validation on passed
parameters is performed. The given parameters should satisfy the condition:\n *\n * - either `step > 0` and `start <=
end`,\n *\n * - or `step < 0` and `start >= end`.\n *\n * @param start first element of the progression\n * @param end
ending bound for the progression\n * @param step increment, or difference of successive elements in the
progression\n * @return the final element of the progression\n * @suppress\n
*\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun getProgressionLastElement(start: UInt, end: UInt, step:
Int): UInt = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end, start, step.toUInt())\n
step <
0 -> if (start <= end) end else end + differenceModulo(start, end, (-step).toUInt())\n    else -> throw
kotlin.IllegalArgumentException("Step is zero.")\n}\n\n**\n * Calculates the final element of a bounded
arithmetic progression, i.e. the last element of the progression which is in the range\n * from [start] to [end] in case
of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n *\n * No validation on passed
parameters is performed. The given parameters should satisfy the condition:\n *\n * - either `step > 0` and `start <=
end`,\n *\n * - or `step < 0` and `start >= end`.\n *\n * @param start first element of the progression\n * @param end
ending bound for the progression\n * @param step increment, or difference of successive elements in the
progression\n * @return the final element of the progression\n * @suppress\n

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*^@PublishedApi^@SinceKotlin("1.3")^internal fun getProgressionLastElement(start: ULong, end: ULong,
step: Long): ULong = when {
    step > 0 -> if (start >= end) end else end - differenceModulo(end, start, step.toULong())
    step < 0 -> if (start <=
end) end else end + differenceModulo(start, end, (-step).toULong())
    else -> throw
kotlin.IllegalArgumentException("Step is zero.")
}
^@file:kotlin.jvm.JvmName("UStringsKt") // string representation
of unsigned numbers
^package kotlin.text
^Returns a string representation of this [Byte] value in the
specified [radix].
^@throws IllegalArgumentException when [radix] is not a valid radix for number to string
conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^@kotlin.internal.InlineOnly
^public /*inline*/ fun UByte.toString(radix: Int): String = this.toInt().toString(radix)
^Returns
a string representation of this [Short] value in the specified [radix].
^@throws IllegalArgumentException
when [radix] is not a valid radix for number to string conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^@kotlin.internal.InlineOnly
^public /*inline*/ fun UShort.toString(radix: Int): String = this.toInt().toString(radix)
^Returns a string
representation of this [Int] value in the specified [radix].
^@throws IllegalArgumentException when [radix] is
not a valid radix for number to string conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^@kotlin.internal.InlineOnly
^public /*inline*/ fun UInt.toString(radix: Int): String = this.toLong().toString(radix)
^Returns a string
representation of this [Long] value in the specified [radix].
^@throws IllegalArgumentException when [radix]
is not a valid radix for number to string conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public
fun ULong.toString(radix: Int): String = ulongToString(this.toLong(), checkRadix(radix))
^Parses the
string as a signed [UByte] number and returns the result.
^@throws NumberFormatException if the string is not a
valid representation of a number.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public fun String.toUByte():
UByte = toUByteOrNull() ?: numberFormatException(this)
^Parses the string as a signed [UByte] number and
returns the result.
^@throws NumberFormatException if the string is not a valid representation of a number.
^@throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public fun
String.toUByte(radix: Int): UByte = toUByteOrNull(radix) ?: numberFormatException(this)
^Parses the
string as a [UShort] number and
returns the result.
^@throws NumberFormatException if the string is not a valid representation of a number.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public fun String.toUShort():
UShort = toUShortOrNull() ?: numberFormatException(this)
^Parses the string as a [UShort] number and
returns the result.
^@throws NumberFormatException if the string is not a valid representation of a number.
^@throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public fun
String.toUShort(radix: Int): UShort = toUShortOrNull(radix) ?: numberFormatException(this)
^Parses the
string as an [UInt] number and returns the result.
^@throws NumberFormatException if the string is not a valid
representation of a number.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public fun String.toUInt():
UInt
= toUIntOrNull() ?: numberFormatException(this)
^Parses the string as an [UInt] number and returns the
result.
^@throws NumberFormatException if the string is not a valid representation of a number.
^@throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalUnsignedTypes::class)^public fun

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conversion.\n *^@\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toULongOrNull(radix: Int): ULong? {\n    checkRadix(radix)\n    val length = this.length\n    if (length ==
0) return null\n    val limit: ULong = ULong.MAX_VALUE\n    val start: Int\n    val firstChar = this[0]\n    if
(firstChar < '0') {\n        if (length == 1 || firstChar != '+') return null\n        start = 1\n    } else {\n        start = 0\n
}\n\n    val limitForMaxRadix = 512409557603043100uL // limit / 36\n    var limitBeforeMul =
limitForMaxRadix\n    val uradix = radix.toULong()\n    var result = 0uL\n    for (i in start until length) {\n        val
digit = digitOf(this[i], radix)\n        if (digit < 0) return null\n
        if (result > limitBeforeMul) {\n            if (limitBeforeMul == limitForMaxRadix) {\n                limitBeforeMul =
limit / uradix\n                if (result > limitBeforeMul) {\n                    return null\n                }\n            } else {\n
                return null\n            }\n        }\n        result *= uradix\n        val beforeAdding = result\n        result +=
digit.toUInt()\n        if (result < beforeAdding) return null // overflow has happened\n    }\n    return
result\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n *^@\n@file:Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\npackage kotlin\nimport
kotlin.annotation.AnnotationTarget.*\nimport kotlin.internal.RequireKotlin\nimport
kotlin.internal.RequireKotlinVersionKind\n\n/**\n * Marks the API that is dependent on the
experimental unsigned types, including those types themselves.\n * Usages of such API will be reported as
warnings unless an explicit opt-in with\n * the [OptIn] annotation, e.g.
`@OptIn(ExperimentalUnsignedTypes::class)`\n * or with the `-opt-in=kotlin.ExperimentalUnsignedTypes`
compiler option is given.\n * It's recommended to propagate the experimental status to the API that depends on
unsigned types by annotating it with this annotation.\n */\n@RequiresOptIn(level =
RequiresOptIn.Level.WARNING)\n@MustBeDocumented\n@Target(CLASS, ANNOTATION_CLASS,
PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION,
PROPERTY_GETTER, PROPERTY_SETTER,
TYPEALIAS)\n@Retention(AnnotationRetention.BINARY)\n@RequireKotlin("1.2.50", versionKind =
RequireKotlinVersionKind.COMPILER_VERSION)\npublic annotation class ExperimentalUnsignedTypes\n", "/*\n
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is governed by
the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MathKt")\n\npackage
kotlin.math\n\n// constants, can't use them from nativeMath as they are not constants there\n\n/** Ratio of the
circumference of a circle to its diameter, approximately 3.14159. */\n@SinceKotlin("1.2")\npublic const val PI:
Double = 3.141592653589793\n\n/** Base of the natural logarithms, approximately 2.71828.
*/\n@SinceKotlin("1.2")\npublic const val E: Double = 2.718281828459045\n\n// region =====
Double Math =====\n\n/** Computes the sine of the angle [x]
given in radians.\n * Special cases:\n * - `sin(NaN|+Inf|-Inf)` is `NaN`\n */\n@SinceKotlin("1.2")\npublic
expect fun sin(x: Double): Double\n\n/** Computes the cosine of the angle [x] given in radians.\n * Special
cases:\n * - `cos(NaN|+Inf|-Inf)` is `NaN`\n */\n@SinceKotlin("1.2")\npublic expect
fun cos(x: Double): Double\n\n/** Computes the tangent of the angle [x] given in radians.\n * Special cases:\n
* - `tan(NaN|+Inf|-Inf)` is `NaN`\n */\n@SinceKotlin("1.2")\npublic expect fun tan(x: Double): Double\n\n/**
Computes the arc sine of the value [x];\n * the returned value is an angle in the range from `-PI/2` to `PI/2`
radians.\n * Special cases:\n * - `asin(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n
*/\n@SinceKotlin("1.2")\npublic expect fun asin(x: Double): Double\n\n/** Computes the arc cosine of the
value [x];\n * the returned value is an angle in the range from `0.0` to `PI` radians.\n * Special cases:\n
* - `acos(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n */\n@SinceKotlin("1.2")\npublic expect fun acos(x: Double):
Double\n\n/** Computes the arc tangent of the value [x];\n * the returned value is an angle in the range from `-
PI/2` to `PI/2` radians.\n * Special cases:\n * - `atan(NaN)` is `NaN`\n */\n@SinceKotlin("1.2")\npublic

```


expect fun atan(x: Double): Double\n\n/**\n * Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond\n * to the rectangular coordinates `(x, y)` by computing the arc tangent of the value $[y] / [x]$;\n * the returned value is an angle in the range from $-\text{PI}$ to PI radians.\n * Special cases:\n * - $\text{atan2}(0.0, 0.0)$ is 0.0 \n * - $\text{atan2}(0.0, x)$ is 0.0 for $x > 0$ and PI for $x < 0$ \n * - $\text{atan2}(-0.0, x)$ is -0.0 for $x > 0$ and $-\text{PI}$ for $x < 0$ \n * - $\text{atan2}(y, +\text{Inf})$ is 0.0 for $0 < y < +\text{Inf}$ and -0.0 for $-\text{Inf} < y < 0$ \n * - $\text{atan2}(y, -\text{Inf})$ is PI for $0 < y < +\text{Inf}$ and $-\text{PI}$ for $-\text{Inf} < y < 0$ \n * - $\text{atan2}(y, 0.0)$ is $\text{PI}/2$ for $y > 0$ and $-\text{PI}/2$ for $y < 0$ \n * - $\text{atan2}(+\text{Inf}, x)$ is $\text{PI}/2$ for finite x \n * - $\text{atan2}(-\text{Inf}, x)$ is $-\text{PI}/2$ for finite x \n * - $\text{atan2}(\text{NaN}, x)$ and $\text{atan2}(y, \text{NaN})$ is NaN \n */\n\npublic expect fun atan2(y: Double, x: Double): Double\n\n/**\n * Computes the hyperbolic sine of the value $[x]$.\n * Special cases:\n * - $\text{sinh}(\text{NaN})$ is NaN \n * - $\text{sinh}(+\text{Inf})$ is $+\text{Inf}$ \n * - $\text{sinh}(-\text{Inf})$ is $-\text{Inf}$ \n */\n\npublic expect fun sinh(x: Double): Double\n\n/**\n * Computes the hyperbolic cosine of the value $[x]$.\n * Special cases:\n * - $\text{cosh}(\text{NaN})$ is NaN \n * - $\text{cosh}(+\text{Inf}-\text{Inf})$ is $+\text{Inf}$ \n */\n\npublic expect fun cosh(x: Double): Double\n\n/**\n * Computes the hyperbolic tangent of the value $[x]$.\n * Special cases:\n * - $\text{tanh}(\text{NaN})$ is NaN \n * - $\text{tanh}(+\text{Inf})$ is 1.0 \n * - $\text{tanh}(-\text{Inf})$ is -1.0 \n */\n\npublic expect fun tanh(x: Double): Double\n\n/**\n * Computes the inverse hyperbolic sine of the value $[x]$.\n * The returned value is y such that $\text{sinh}(y) == x$.\n * Special cases:\n * - $\text{asinh}(\text{NaN})$ is NaN \n * - $\text{asinh}(+\text{Inf})$ is $+\text{Inf}$ \n * - $\text{asinh}(-\text{Inf})$ is $-\text{Inf}$ \n */\n\npublic expect fun asinh(x: Double): Double\n\n/**\n * Computes the inverse hyperbolic cosine of the value $[x]$.\n * The returned value is positive y such that $\text{cosh}(y) == x$.\n * Special cases:\n * - $\text{acosh}(\text{NaN})$ is NaN \n * - $\text{acosh}(x)$ is NaN when $x < 1$ \n * - $\text{acosh}(+\text{Inf})$ is $+\text{Inf}$ \n */\n\npublic expect fun acosh(x: Double): Double\n\n/**\n * Computes the inverse hyperbolic tangent of the value $[x]$.\n * The returned value is y such that $\text{tanh}(y) == x$.\n * Special cases:\n * - $\text{atanh}(\text{NaN})$ is NaN \n * - $\text{atanh}(x)$ is NaN when $x > 1$ or $x < -1$ \n * - $\text{atanh}(1.0)$ is $+\text{Inf}$ \n * - $\text{atanh}(-1.0)$ is $-\text{Inf}$ \n */\n\npublic expect fun atanh(x: Double): Double\n\n/**\n * Computes $\sqrt{x^2 + y^2}$ without intermediate overflow or underflow.\n * Special cases:\n * - returns $+\text{Inf}$ if any of arguments is infinite\n * - returns NaN if any of arguments is NaN and the other is not infinite\n */\n\npublic expect fun hypot(x: Double, y: Double): Double\n\n/**\n * Computes the positive square root of the value $[x]$.\n * Special cases:\n * - $\text{sqrt}(x)$ is NaN when $x < 0$ or x is NaN \n */\n\npublic expect fun sqrt(x: Double): Double\n\n/**\n * Computes Euler's number e raised to the power of the value $[x]$.\n * Special cases:\n * - $\text{exp}(\text{NaN})$ is NaN \n * - $\text{exp}(+\text{Inf})$ is $+\text{Inf}$ \n * - $\text{exp}(-\text{Inf})$ is 0.0 \n */\n\npublic expect fun exp(x: Double): Double\n\n/**\n * Computes $\text{exp}(x) - 1$.\n * This function can be implemented to produce more precise result for $[x]$ near zero.\n * Special cases:\n * - $\text{expm1}(\text{NaN})$ is NaN \n * - $\text{expm1}(+\text{Inf})$ is $+\text{Inf}$ \n * - $\text{expm1}(-\text{Inf})$ is -1.0 \n * @see [exp] function.\n */\n\npublic expect fun expm1(x: Double): Double\n\n/**\n * Computes the logarithm of the value $[x]$ to the given $[base]$.\n * Special cases:\n * - $\text{log}(x, b)$ is NaN if either x or b are NaN \n * - $\text{log}(x, b)$ is NaN when $x < 0$ or $b <= 0$ or $b == 1.0$ \n * - $\text{log}(+\text{Inf}, +\text{Inf})$ is NaN \n * - $\text{log}(+\text{Inf}, b)$ is $+\text{Inf}$ for $b > 1$ and $-\text{Inf}$ for $b < 1$ \n * - $\text{log}(0.0, b)$ is $-\text{Inf}$ for $b > 1$ and $+\text{Inf}$ for $b > 1$ \n * See also logarithm functions for common fixed bases: [ln], [log10] and [log2].\n */\n\npublic expect fun log(x: Double, base: Double): Double\n\n/**\n * Computes the natural logarithm (base 'E') of the value $[x]$.\n * Special cases:\n * - $\text{ln}(\text{NaN})$ is NaN \n * - $\text{ln}(x)$ is NaN when $x < 0.0$ \n * - $\text{ln}(+\text{Inf})$ is $+\text{Inf}$ \n * - $\text{ln}(0.0)$ is $-\text{Inf}$ \n */\n\npublic expect fun ln(x: Double): Double\n\n/**\n * Computes the common logarithm (base 10) of the value $[x]$.\n * @see [ln] function for special cases.\n */\n\npublic expect fun log10(x: Double): Double\n\n/**\n * Computes the binary logarithm (base 2) of the value $[x]$.\n * @see [ln] function for special cases.\n */\n\npublic expect fun log2(x: Double): Double\n\n/**\n * Computes $\text{ln}(x + 1)$.\n * This function can be implemented to produce more precise result for $[x]$ near zero.\n * Special cases:\n * - $\text{ln1p}(\text{NaN})$ is NaN \n * - $\text{ln1p}(x)$ is NaN where $x < -1.0$ \n * - $\text{ln1p}(-1.0)$ is $-\text{Inf}$ \n * - $\text{ln1p}(+\text{Inf})$ is $+\text{Inf}$ \n * @see [ln] function\n * @see

[`expm1`] function\n *
`@SinceKotlin("1.2")\npublic expect fun ln1p(x: Double): Double\n\n` * Rounds the given value [x] to an integer towards positive infinity.\n *
`@return` the smallest double value that is greater than or equal to the given value [x] and is a mathematical integer.\n *
 Special cases:\n * - `ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *
`@SinceKotlin("1.2")\npublic expect fun ceil(x: Double): Double\n\n` * Rounds the given value [x] to an integer towards negative infinity.\n *
`@return` the largest double value that is smaller than or equal to the given value [x] and is a mathematical integer.\n *
 Special cases:\n * - `floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *
`@SinceKotlin("1.2")\npublic expect fun floor(x: Double): Double\n\n` * Rounds the given value [x] to an integer towards zero.\n *
`@return` the value [x] having its fractional part truncated.\n *
 Special cases:\n * - `truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *
`@SinceKotlin("1.2")\npublic expect fun truncate(x: Double): Double\n\n` * Rounds the given value [x] towards the closest integer with ties rounded towards even integer.\n *
 Special cases:\n * - `round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n *
`@SinceKotlin("1.2")\npublic expect fun round(x: Double): Double\n\n` * Returns the absolute value of the given value [x].\n *
 Special cases:\n * - `abs(NaN)` is `NaN`\n *
`@see` `absoluteValue` extension property for [Double]\n *
`@SinceKotlin("1.2")\npublic expect fun abs(x: Double): Double\n\n` * Returns the sign of the given value [x]:\n * - `-1.0` if the value is negative,\n * - zero if the value is zero,\n * - `1.0` if the value is positive\n *
 Special case:\n * - `sign(NaN)` is `NaN`\n *
`@SinceKotlin("1.2")\npublic expect fun sign(x: Double): Double\n\n` * Returns the smaller of two values.\n *
 If either value is `NaN`, then the result is `NaN`.\n *
`@SinceKotlin("1.2")\npublic expect fun min(a: Double, b: Double): Double\n\n` * Returns the greater of two values.\n *
 If either value is `NaN`, then the result is `NaN`.\n *
`@SinceKotlin("1.2")\npublic expect fun max(a: Double, b: Double): Double\n\n` extensions\n *
 Raises this value to the power [x].\n *
 Special cases:\n * - `b.pow(0.0)` is `1.0`\n * - `b.pow(1.0) == b`\n * - `b.pow(NaN)` is `NaN`\n * - `NaN.pow(x)` is `NaN` for `x != 0.0`\n * - `b.pow(Inf)` is `NaN` for `abs(b) == 1.0`\n * - `b.pow(x)` is `NaN` for `b < 0` and `x` is finite and not an integer\n *
`@SinceKotlin("1.2")\npublic expect fun Double.pow(x: Double): Double\n\n` *
 Raises this value to the integer power [n].\n *
 See the other overload of [pow] for details.\n *
`@SinceKotlin("1.2")\npublic expect fun Double.pow(n: Int): Double\n\n` * Returns the absolute value of this value.\n *
 Special cases:\n * - `NaN.absoluteValue` is `NaN`\n *
`@see` `abs` function\n *
`@SinceKotlin("1.2")\npublic expect val Double.absoluteValue: Double\n\n` * Returns the sign of this value:\n * - `-1.0` if the value is negative,\n * - zero if the value is zero,\n * - `1.0` if the value is positive\n *
 Special case:\n * - `NaN.sign` is `NaN`\n *
`@SinceKotlin("1.2")\npublic expect val Double.sign: Double\n\n` * Returns this value with the sign bit same as of the [sign] value.\n *
 If [sign] is `NaN` the sign of the result is undefined.\n *
`@SinceKotlin("1.2")\npublic expect fun Double.withSign(sign: Double): Double\n\n` * Returns this value with the sign bit same as of the [sign] value.\n *
`@SinceKotlin("1.2")\npublic expect fun Double.withSign(sign: Int): Double\n\n` * Returns the ulp (unit in the last place) of this value.\n *
 An ulp is a positive distance between this value and the next nearest [Double] value larger in magnitude.\n *
 Special Cases:\n * - `NaN.ulp` is `NaN`\n * - `x.ulp` is `+Inf` when `x` is `+Inf` or `-Inf`\n * - `0.0.ulp` is `Double.MIN_VALUE`\n *
`@SinceKotlin("1.2")\npublic expect val Double.ulp: Double\n\n` * Returns the [Double] value nearest to this value in direction of positive infinity.\n *
`@SinceKotlin("1.2")\npublic expect fun Double.nextUp(): Double\n\n` * Returns the [Double] value nearest to this value in direction of negative infinity.\n *
`@SinceKotlin("1.2")\npublic expect fun Double.nextDown(): Double\n\n` * Returns the [Double] value nearest to this value in direction from this value towards the value [to].\n *
 Special cases:\n * - `x.nextTowards(y)` is `NaN` if either `x` or `y` are `NaN`\n * - `x.nextTowards(x) == x`\n *
`@SinceKotlin("1.2")\npublic expect fun Double.nextTowards(to: Double): Double\n\n` * Rounds this [Double] value to the nearest integer and converts the result to [Int].\n *
 Ties are rounded towards positive infinity.\n *
 Special cases:\n * - `x.roundToInt() == Int.MAX_VALUE` when `x >`

Int.MAX_VALUE` when `x > Int.MAX_VALUE`
 @throws
 IllegalArgumentException when this value is NaN`
 public expect fun
 Double.roundToInt(): Int` Rounds this [Double] value to the nearest integer and converts the result to
 [Long].` Ties are rounded towards positive infinity.`
 Special cases:` - `x.roundToLong() ==
 Long.MAX_VALUE` when `x > Long.MAX_VALUE`
 * - `x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE`
 @throws
 IllegalArgumentException when this value is NaN`
 public expect fun
 Double.roundToLong(): Long` endregion` region ===== Float Math
 =====` Computes the sine of the angle [x] given in
 radians.`
 Special cases:` - `sin(NaN|+Inf|-Inf)` is NaN`
 public expect fun
 sin(x: Float): Float` Computes the cosine of the angle [x] given in radians.`
 Special cases:` -
 `cos(NaN|+Inf|-Inf)` is NaN`
 public expect fun
 cos(x: Float): Float` Computes
 the tangent of the angle [x] given in radians.`
 Special cases:` - `tan(NaN|+Inf|-Inf)` is NaN`
 public expect fun
 tan(x: Float): Float` Computes the arc sine of the value
 [x];`
 the returned value is an angle in the range from
 -PI/2` to PI/2` radians.`
 Special cases:` - `asin(x)` is NaN`, when `abs(x) > 1` or x is NaN`
 public expect fun
 asin(x: Float): Float` Computes the arc cosine of the value
 [x];`
 the returned value is an angle in the range from 0.0` to PI radians.`
 Special cases:` - `acos(x)`
 is NaN`, when `abs(x) > 1` or x is NaN`
 public expect fun
 acos(x: Float):
 Float` Computes the arc tangent of the value [x];`
 the returned value is an angle in the range from -
 PI/2` to PI/2` radians.`
 Special cases:` - `atan(NaN)` is NaN`
 public expect fun
 atan(x: Float): Float` Returns the angle `theta` of the polar coordinates `(r, theta)` that
 correspond
 to the rectangular coordinates `(x, y)` by computing the arc tangent of the value [y] / [x];`
 the
 returned value is an angle in the range from -PI` to PI` radians.`
 Special cases:`
 * - `atan2(0.0, 0.0)` is 0.0`
 * - `atan2(0.0, x)` is 0.0` for `x > 0` and PI` for `x < 0`
 * - `atan2(-0.0, x)` is -
 0.0` for `x > 0` and -PI` for `x < 0`
 * - `atan2(y, +Inf)` is 0.0` for `0 < y < +Inf` and -0.0` for `-Inf < y < 0`
 *
 - `atan2(y, -Inf)` is PI` for `0 < y < +Inf` and -PI` for `-Inf < y < 0`
 * - `atan2(y, 0.0)` is PI/2` for `y > 0` and -
 PI/2` for `y < 0`
 * - `atan2(+Inf, x)` is PI/2` for finite `x`
 * - `atan2(-Inf, x)` is -PI/2` for finite `x`
 * -
 `atan2(NaN, x)` and `atan2(y, NaN)` is NaN`
 public expect fun
 atan2(y: Float, x:
 Float): Float` Computes the hyperbolic sine of the value [x].`
 Special cases:` - `sinh(NaN)` is
 NaN`
 * - `sinh(+Inf)` is +Inf`
 * - `sinh(-Inf)` is -Inf`
 public expect fun
 sinh(x: Float): Float` Computes the hyperbolic cosine of the value [x].`
 Special cases:` - `cosh(NaN)`
 is NaN`
 * - `cosh(+Inf|-Inf)` is +Inf`
 public expect fun
 cosh(x: Float): Float`
 Computes the hyperbolic tangent of the value [x].`
 Special cases:` - `tanh(NaN)` is NaN`
 * -
 `tanh(+Inf)` is 1.0`
 * - `tanh(-Inf)` is -1.0`
 public expect fun
 tanh(x: Float):
 Float` Computes the inverse hyperbolic sine of the value [x].`
 The returned value is `y` such that
 `sinh(y) == x`.
 Special cases:` - `asinh(NaN)` is NaN`
 * - `asinh(+Inf)` is +Inf`
 * - `asinh(-Inf)`
 is -Inf`
 public expect fun
 asinh(x: Float): Float` Computes the inverse
 hyperbolic cosine of the value [x].`
 The returned value is positive `y` such that `cosh(y) == x`.
 Special
 cases:` - `acosh(NaN)` is NaN`
 * - `acosh(x)` is NaN` when `x < 1`
 * - `acosh(+Inf)` is +Inf`
 public expect fun
 acosh(x: Float): Float`
 Computes the inverse hyperbolic tangent of the value [x].`
 The returned value is `y` such that `tanh(y) ==
 x`.
 Special cases:` - `tanh(NaN)` is NaN`
 * - `tanh(x)` is NaN` when `x > 1` or `x < -1`
 * -
 `tanh(1.0)` is +Inf`
 * - `tanh(-1.0)` is -Inf`
 public expect fun
 atanh(x: Float):
 Float` Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.`
 Special cases:`
 - returns +Inf` if any of arguments is infinite`
 * - returns NaN` if any of arguments is NaN` and the other is not
 infinite`
 public expect fun
 hypot(x: Float, y: Float): Float` Computes the

positive square root of the value [x].
Special cases:
`sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN`

`SinceKotlin("1.2")\npublic expect fun sqrt(x: Float): Float`
Computes Euler's number `e` raised to the power of the value [x].
Special cases:
`exp(NaN)`
is `NaN`
`exp(+Inf)` is `+Inf`
`exp(-Inf)` is `0.0`

`SinceKotlin("1.2")\npublic expect fun exp(x: Float): Float`
Computes `exp(x) - 1`.
This function can be implemented to produce more precise result for [x] near zero.
Special cases:
`expm1(NaN)` is `NaN`
`expm1(+Inf)` is `+Inf`
`expm1(-Inf)` is `-1.0`
@see [exp] function.

`SinceKotlin("1.2")\npublic expect fun expm1(x: Float): Float`
Computes the logarithm of the value [x] to the given [base].
Special cases:
`log(x, b)` is `NaN` if either `x` or `b` are `NaN`
`log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0`
`log(+Inf, +Inf)` is `NaN`
`log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1`
`log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b < 1`
See also logarithm functions for common fixed bases: [ln], [log10] and [log2].

`SinceKotlin("1.2")\npublic expect fun log(x: Float, base: Float): Float`
Computes the natural logarithm (base `E`) of the value [x].
Special cases:
`ln(NaN)` is `NaN`
`ln(x)` is `NaN` when `x < 0.0`
`ln(+Inf)` is `+Inf`
`ln(0.0)` is `-Inf`

`SinceKotlin("1.2")\npublic expect fun ln(x: Float): Float`
Computes the common logarithm (base 10) of the value [x].
@see [ln] function for special cases.

`SinceKotlin("1.2")\npublic expect fun log10(x: Float): Float`
Computes the binary logarithm (base 2) of the value [x].
@see [ln] function for special cases.

`SinceKotlin("1.2")\npublic expect fun log2(x: Float): Float`
Computes `ln(a + 1)`.
This function can be implemented to produce more precise result for [x] near zero.
Special cases:
`ln1p(NaN)` is `NaN`
`ln1p(x)` is `NaN` where `x < -1.0`
`ln1p(-1.0)` is `-Inf`
`ln1p(+Inf)` is `+Inf`
@see [ln] function
@see [expm1] function

`SinceKotlin("1.2")\npublic expect fun ln1p(x: Float): Float`
Rounds the given value [x] to an integer towards positive infinity.
@return the smallest Float value that is greater than or equal to the given value [x] and is a mathematical integer.
Special cases:
`ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

`SinceKotlin("1.2")\npublic expect fun ceil(x: Float): Float`
Rounds the given value [x] to an integer towards negative infinity.
@return the largest Float value that is smaller than or equal to the given value [x] and is a mathematical integer.
Special cases:
`floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

`SinceKotlin("1.2")\npublic expect fun floor(x: Float): Float`
Rounds the given value [x] to an integer towards zero.
@return the value [x] having its fractional part truncated.
Special cases:
`truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

`SinceKotlin("1.2")\npublic expect fun truncate(x: Float): Float`
Rounds the given value [x] towards the closest integer with ties rounded towards even integer.
Special cases:
`round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

`SinceKotlin("1.2")\npublic expect fun round(x: Float): Float`
Returns the absolute value of the given value [x].
Special cases:
`abs(NaN)` is `NaN`
@see absoluteValue extension property for [Float]

`SinceKotlin("1.2")\npublic expect fun abs(x: Float): Float`
Returns the sign of the given value [x]:
`-1.0` if the value is negative,
`0.0` if the value is zero,
`1.0` if the value is positive
Special case:
`sign(NaN)` is `NaN`

`SinceKotlin("1.2")\npublic expect fun sign(x: Float): Float`
Returns the smaller of two values.
If either value is `NaN`, then the result is `NaN`.

`SinceKotlin("1.2")\npublic expect fun min(a: Float, b: Float): Float`
Returns the greater of two values.
If either value is `NaN`, then the result is `NaN`.

`SinceKotlin("1.2")\npublic expect fun max(a: Float, b: Float): Float`
Raises this value to the power [x].
Special cases:
`b.pow(0.0)` is `1.0`
`b.pow(1.0) == b`
`b.pow(NaN)` is `NaN`
`NaN.pow(x)` is `NaN` for `x != 0.0`
`b.pow(Inf)` is `NaN` for `abs(b) == 1.0`
`b.pow(x)` is `NaN` for `b < 0` and `x` is finite and not an integer

`SinceKotlin("1.2")\npublic expect fun Float.pow(x: Float): Float`
Raises this value to the integer power [n].
See the other overload of [pow] for details.

`SinceKotlin("1.2")\npublic expect fun Float.pow(n: Int): Float`

Int): Float\n\n/**\n * Returns the absolute value of this value.\n *\n * Special cases:\n * - `NaN.absoluteValue` is `NaN`\n *\n * @see abs function\n *\n@SinceKotlin("1.2")\npublic expect val Float.absoluteValue: Float\n\n/**\n * Returns the sign of this value:\n * - `-1.0` if the value is negative,\n * - zero if the value is zero,\n * - `1.0` if the value is positive\n *\n * Special case:\n * - `NaN.sign` is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect val Float.sign: Float\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.\n *\n * If [sign] is `NaN` the sign of the result is undefined.\n *\n@SinceKotlin("1.2")\npublic expect fun Float.withSign(sign: Float): Float\n\n/**\n * Returns this value with the sign bit same as of the [sign] value.\n *\n@SinceKotlin("1.2")\npublic expect fun Float.withSign(sign: Int): Float\n\n/**\n * Rounds this [Float] value to the nearest integer and converts the result to [Int].\n *\n * Ties are rounded towards positive infinity.\n *\n * Special cases:\n * - `x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`\n * - `x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE`\n *\n * @throws IllegalArgumentException when this value is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun Float.roundToInt(): Int\n\n/**\n * Rounds this [Float] value to the nearest integer and converts the result to [Long].\n *\n * Ties are rounded towards positive infinity.\n *\n * Special cases:\n * - `x.roundToLong() == Long.MAX_VALUE` when `x > Long.MAX_VALUE`\n * - `x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE`\n *\n * @throws IllegalArgumentException when this value is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun Float.roundToLong(): Long\n\n\n// endregion\n\n// region\n\n==== Integer Math =====\n\n/**\n * Returns the absolute value of the given value [n].\n *\n * Special cases:\n * - `abs(Int.MIN_VALUE)` is `Int.MIN_VALUE` due to an overflow\n *\n * @see absoluteValue extension property for [Int]\n *\n@SinceKotlin("1.2")\npublic expect fun abs(n: Int): Int\n\n/**\n * Returns the smaller of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun min(a: Int, b: Int): Int\n\n/**\n * Returns the greater of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun max(a: Int, b: Int): Int\n\n/**\n * Returns the absolute value of this value.\n *\n * Special cases:\n * - `Int.MIN_VALUE.absoluteValue` is `Int.MIN_VALUE` due to an overflow\n *\n * @see abs function\n *\n@SinceKotlin("1.2")\npublic expect val Int.absoluteValue: Int\n\n/**\n * Returns the sign of this value:\n * - `-1` if the value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n *\n@SinceKotlin("1.2")\npublic expect val Int.sign: Int\n\n/**\n * Returns the absolute value of the given value [n].\n *\n * Special cases:\n * - `abs(Long.MIN_VALUE)` is `Long.MIN_VALUE` due to an overflow\n *\n * @see absoluteValue extension property for [Long]\n *\n@SinceKotlin("1.2")\npublic expect fun abs(n: Long): Long\n\n/**\n * Returns the smaller of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun min(a: Long, b: Long): Long\n\n/**\n * Returns the greater of two values.\n *\n@SinceKotlin("1.2")\npublic expect fun max(a: Long, b: Long): Long\n\n/**\n * Returns the absolute value of this value.\n *\n * Special cases:\n * - `Long.MIN_VALUE.absoluteValue` is `Long.MIN_VALUE` due to an overflow\n *\n * @see abs function\n *\n@SinceKotlin("1.2")\npublic expect val Long.absoluteValue: Long\n\n/**\n * Returns the sign of this value:\n * - `-1` if the value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n *\n@SinceKotlin("1.2")\npublic expect val Long.sign: Int\n\n\n// endregion\n\nendregion\n"],"names":["mappings":":AAWC,CAXA,yB;EACG,IAAI,OAAO,MAAO,KAAL,UAAW,IAAG,MAAM,IAA1C,C;IACI,MAAM,CAAC,QAAD,EA AW,CAAC,SAAD,CAAX,EA AwB,OAAxB,C;SAEL,IAAL,OAAO,OA AQ,KAAL,QA AvB,C;IACD,OAAO,CAAC,MAAM,QAAP,C;;IAGP,IAAI,OA AQ,GAAE,E;IACd,OAAO,CAAC,IAAI,OAAL,C;;CAEd,CAAC,IAAD,EA AO,kB;EACJ,IAAI,IAAI,M;ECPZ,MAAM,eAAgB,GAAE,a;IACpB,OA AoD,CAA5C,KA AK,QA AQ,CAAC,CAAD,CAAI,IAAG,CAAE,YAAW,SA AW,KAAG,CAAC,OAAQ,KAAL,c;G ;EAGxE,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAE,YAAW,SA AU,IAAG,CAAC,OAAQ,KAAL,c;G;EAGID,M AAM,aAAc,GAAE,a;IACIB,OAAO,CAAE,YAAW,U;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAE,Y AAW,WAA Y,IAAG,CAAC,OAAQ,KAAL,W;G;EAGpD,MAAM,WAA Y,GAAE,a;IAC hB,OAAO,CAAE,YAAW, U;G;EAGxB,MAAM,aAAc,GAAE,a;IACIB,OAAO,CAAE,YAAW,Y;G;EAGxB,MAAM,cAAe,GAAE,a;IACnB,O AAO,CAAE,YAAW,Y;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,KA AK,QA AQ,CAAC,CAAD,CAAI,IA

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gB,yB;UApEK,U;UAAA,wBAoEQ,OApER,W;YAA sC,6B;;;QAC3D,OAAO,W;O;KANX,C;kFASA,6C;MAKiB,
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,OAAO,K;;MACtD,OAAO,I;K;IAGX,2B;MAMI,OAAO,CAAC,mB;K;+EAGZ,gC;MAOoB,Q;MADhB,IAAI,mB
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0B;O;KAPJ,C;igAUA,yB;MAAA,sC;MnBvZA,+B;MmBuZA,0BAOgC,yB;QnB9ZhC,+B;emB8ZgC,6B;UAAA,q
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Ad,C;UAAc,uB;UACV,cAAc,sBAAK,KAAL,C;UACd,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QAEnC,
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,CAAL,C;UAAyB,WAAY,WAAI,OAAJ,C;;MAC3D,OAAO,W;K;+FAGX,6C;MASoB,Q;MAAA,2B;MAAhB,OA
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,OAAO,I;K;IAGX,sC;MASKB,Q;MAHd,WAAmB,wBAAR,OAAQ,EA AwB,EA AxB,C;MACnB,IAAI,SAAQ,CA
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F,IADIF,EAC0F,IAD1F,EACkG,IADIG,EAC0G,IAD1G,EACKH,IADIH,EAC0H,IAD1H,EACKI,IADII,EAETb,IA
FsB,EAEd,IAFc,EAEN,IAFM,EAEE,IAFF,EAEU,IAFV,EAekB,IAFIB,EAE0B,IAF1B,EAekC,IAFIC,EAE0C,IA
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FIG,EAE0G,KAF1G,E;K;;IAF9B,6B;MAAA,4B;QAAA,W;;MAAA,qB;K;IAQA,0C;MAKI,aAAa,C;MACb,UAA
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;;MAGf,OAAO,K;K;yDAGX,oB;MAGoB,Q;MAFhB,qB;MACA,eAAe,K;MACC,0B;MAAhB,OAAgB,cAAhB,C
;QAAgB,yB;QACZ,IAAI,eAAI,OAAJ,CAAJ,C;UAAkB,WAAW,I;;MAEjC,OAAO,Q;K;IAKuC,sE;MAAA,qB;Q
AAE,OAAO,gBAAN,mB;O;K;4DAFpD,oB;MAEY,Q;MADR,qB;MACA,OAAoC,YAA5B,iEAA4B,EAAU,oDA
AV,C;K;IAKU,sE;MAAA,qB;QAAE,QAAO,gBAAP,mB;O;K;4DAFpD,oB;MAEY,Q;MADR,qB;MACA,OAAoC
,YAA5B,iEAA4B,EAAU,oDAAV,C;K;gDAGxC,Y;MACI,qB;MACA,eAAe,IAAK,W;MACpB,OAAO,QAAS,UA
AhB,C;QACI,QAAS,O;QACT,QAAS,S;;K;iDAIjB,Y;MAE8B,OAAA,IAAK,U;K;yDAGnC,Y;K;;IC3CgD,+B;MA
AiC,oC;MACjF,gBAA8B,C;K;8CAM9B,mB;MAMI,qB;MACA,iBAAI,SAAJ,EAAU,OAAV,C;MACA,OAAO,I;
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K;MACb,cAAc,K;MACJ,0B;MAAV,OAAU,cAAV,C;QAAU,mB;QACN,kBAAI,eAAJ,EAAI,uBAAJ,WAAc,CA
Ad,C;QACA,UAAU,I;;MAEd,OAAO,O;K;0CAGX,Y;MACI,qB;MACA,yBAAY,CAAZ,EAAe,SAAF,C;K;IAKiB,
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AIX,Y;MAAQd,iD;K;mDAErD,mB;MAAoD,0BAAQ,OAAO,KAAoB,C;K;kDAExE,mB;MACqB,Q;MAAA,6B;
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;sDAGX,mB;MACI,iBAAc,sBAAd,WAA+B,CAA/B,U;QACI,IAAI,wBAAI,KAAJ,GAAC,OAAAd,CAAJ,C;UACI,
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;oDAGvE,8B;MAA4E,uCAAQ,IAAR,EAAc,SAAd,EAAyB,OAAzB,C;K;wDAE5E,8B;MAII,eAAe,0BAAa,SAAb
,C;MACf,YAAO,UAAU,SAAV,I;MnEuDX,iBAAc,CAAd,UAAAsB,KAAAtB,U;QmEtDiB,e;QACA,iB;;K;2CAIjB,i
B;MAMI,IAAI,UAAU,IAAd,C;QAAoB,OAAO,I;MAC3B,IAAI,2BAAJ,C;QAAuB,OAAO,K;MAE9B,OAAO,oC
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,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;MACTb,eAAO,mBAAP,EAAO,2BAAP,O;MACA,OAAO,wBAAI,WA
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K;+DAEpC,mB;MACI,wBAAI,YAAJ,EAAW,OAAAX,C;MACA,mC;MACA,cAAO,E;K;+DAGX,mB;MtE1FJ,IAA
I,EsEmFU,gBAAQ,EtEnFIB,CAAJ,C;QACI,csEkFwB,4E;QtEjFxB,MAAM,6BAAsB,OAAQ,WAA9B,C;;MsEkFF
,wBAAI,WAAJ,EAAU,OAAV,C;K;;IAIgb,+D;MAAuF,8B;MAAtF,kB;MAA0C,4B;MAC/D,eAAyB,C;MAGrB,o
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;K;2DAE/B,Y;MAA+C,WAAK,iB;K;;ICxMN,8B;MAAiC,sB;MAwCnF,uBAAoC,I;MA+CpC,yBAA6C,I;K;IAIF
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;MAAsD,sDAAY,OAAZ,C;K;IAI3C,oH;MAAA,kD;K;4GACH,Y;MAAkC,OAAA,0BAAc,U;K;yGACHD,Y;MAA
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Gf,OAAO,I;K;kDAIX,Y;K;;IC3I+C,8B;MAAiC,oC;K;0CAEHf,iB;MAMI,IAAI,UAAU,IAAd,C;QAAoB,OAAO,I;
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O,I;K;qFAGmB,Y;MAAQ,OAAA,kBAAI,K;K;6CAE1C,Y;MACl,IAAI,yBAAJ,C;QAAGb,MAAM,oC;K;;IANg1
B,mC;MAAA,uD;MAGuB,qB;MA9J3B,yB;MA+JQ,sBAAM,gB;MAJV,Y;K;IAOA,iD;MAAA,uD;MAAoD,qB;M
AlKxD,yB;MAoKc,Q;MAAN,sBAAM,+D;MAFV,Y;K;IAKA,kE;MAAA,uD;MAQ8D,eAAM,eAAN,EAAuB,UA
AvB,Q;MA/KIE,yB;MAGLQ,sBAAM,gB;MATV,Y;K;IA YA,sD;MAAA,uD;MAA2C,qBAAK,eAAL,EAASB,GA
AtB,Q;MAA3C,Y;K;IAEA,+C;MAAA,uD;MAG2C,qB;MAxL/C,yB;MAyLQ,sBAAM,gB;MACN,KAAK,gBAAO
,QAAP,C;MALT,Y;K;IA6EJ,kC;MAKwD,gBAA7C,qBAAYb,eAAzB,C;MAAqD,wB;MAA5D,O/EjMO,S;K;;oC
gFvCP,Y;MAEK,Q;MAA8B,CAA9B,2EAA8B,S;MAC/B,OAAO,I;K;6CAGX,Y;MAA+C,gBAAI,iB;K;;IAhCnD,
wC;MAAA,uD;MAAMd,eAAM,GAAN,Q;MAPvD,yB;MAOI,Y;K;IAEA,qC;MAAA,uD;MAGuB,eAAM,oBAAN
,Q;MAZ3B,yB;MASI,Y;K;IAKA,+C;MAAA,uD;MAG8C,eAAM,oBAAN,Q;MAjBID,yB;MAkBQ,qBAAO,QAA
P,C;MAJJ,Y;K;IAOA,kE;MAAA,uD;MAQ8D,eAAM,qBAASb,eAATb,EAAuC,UAAvC,CAAN,Q;MA7BIE,yB;M
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ACI,Y;MACl,mBAAM,IAAN,C;K;2CAGJ,mB;MACl,mBAAM,OAAN,C;MACA,c;K;iCAKJ,Y;K;;IAKuB,oC;M
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;IAIrB,8B;MAEoC,qB;K;iDACHC,mB;MACl,OAAQ,KAAI,OAAJ,C;K;mDAGZ,mB;MACl,OAAQ,KAAI,OAAJ,
C;K;2CAGZ,Y;MACl,OAAQ,KAAI,EAAJ,C;K;;IAIhB,0B;MAEqC,qB;MACjC,cAAa,E;K;6CAEb,mB;MACl,eA
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K;IAE3C,wB;MAC4C,MAAM,qCAA8B,4CAA9B,C;K;IClGID,mD;MACl,0B;MASA,gBAA2B,a;K;2FAFvB,Y;M

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C;K;4CAItB,Y;MAOW,Q;MALP,IAAI,kBAAW,2CAAf,C;QACI,gBAAS,yB;QACT,OAAO,yB;;MAEX,aAAa,IA
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D,4B;MAI2C,qBAAQ,S;K;IAEnD,+B;MAGiD,qBAAQ,wCAAO,kBAAf,IAAoC,cAAQ,wCAAO,kB;K;IAEpG,iC;
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;K;+C4GvEnD,iB;M5GuE6C,MAAM,6B4GvEG,uC5GuE2B,WAA9B,C;K;mC4GrEnD,iB;MAA4C,iBAAU,I;K;q
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ACA,wC;MACA,kC;MACA,oC;K;SEHA,Y;MAAA,0B;K;6EACA,Y;MAAA,iC;K;0EACA,Y;MAAA,8B;K;2EA
CA,Y;MAAA,+B;K;4CAEA,Y;MAAKC,gB;K;8CANtC,Y;MACI,gB;K;8CADJ,Y;MAEI,uB;K;8CAFJ,Y;MAGI,o
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;MAAA,iB;QAAe,MAAM,6BAAsB,0CAAtB,C;MAApC,eAAe,I;MACf,qBAAc,I;MACd,OAAO,QAAS,W;K;I
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AHP,EAGW,IAHX,C;MAKA,wEAGY,EAHZ,EAGgB,IAHhB,C;MAKA,oEAGU,EAHV,EAGc,IAHd,C;MAKA,k
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Cd,EAAE,OAAF,IAAa,K;MACb,EAAE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE,UAAF,IA
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;MAAA,kF;MAAA,0B;MAAA,uB;QAaI,IAAI,OAAO,CAAP,IAA8B,OAAO,KAAzC,C;UACI,MAAM,8BAAYB,
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V,6B;MAAC,qB;QAAA,8C;MAAA,kB;K;IACjC,2C;MAAA,e;MAAA,iB;MAAA,uB;K;IAAA,yC;MAAA,4C;O;
MAKI,0E;MAEA,sE;K;;IAFA,kD;MAAA,+B;MAAA,0C;K;;IAEA,gD;MAAA,+B;MAAA,wC;K;;IAPJ,qC;MAA
A,yF;K;;IAAA,0C;MAAA,a;aAAA,S;UAAA,+C;aAAA,O;UAAA,6C;;UAAA,8D;;K;;IA0BmC,sC;MACnC,8B;K;
;IAMqC,sC;MACrC,8B;K;;IC5DJ,iC;K;;ICMA,4B;K;;IA6BA,gD;K;;IC5BA,qC;K;;IA0BA,+B;K;;ICNqC,uC;MA
CjC,uB;QAAA,UAAsB,E;MACtB,qB;QAAA,+C;MADA,sB;MACA,kB;K;IAEA,4C;MAAA,e;MAAA,iB;MAAA,
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;MAAA,yC;K;;IARJ,sC;MAAA,2F;K;;IAAA,2C;MAAA,a;aAAA,S;UAAA,gD;aAAA,O;UAAA,8C;;UAAA,+D;;
K;;IAyByB,4B;MACzB,8B;K;;IC/C4C,8B;K;kDAI5C,mB;MAA6D,c;;QrJ2rD7C,Q;QADhB,IAAI,mCAAsB,cAA
1B,C;UAAqC,aAAO,K;UAAP,e;;QACrB,sB;QAaHb,OAAGB,cAAhB,C;UAAgB,2B;UAAM,IqJ3rD6C,OrJ2rD/B,
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C;K;mDAE5C,iB;MAI4D,yBAAgB,IAAhB,EAAsB,KAAtB,C;K;;IC/BhE,8B;MAAA,e;MAAA,iB;MAAA,uB;K;I
AAA,4B;MAAA,+B;O;MACI,4C;MACA,kD;MACA,0C;MACA,8C;K;;IAHA,mC;MAAA,kB;MAAA,2B;K;;IAC
A,sC;MAAA,kB;MAAA,8B;K;;IACA,kC;MAAA,kB;MAAA,0B;K;;IACA,oC;MAAA,kB;MAAA,4B;K;;IAJJ,wB;
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,iC;;UAAA,6D;;K;;IAOA,4B;MAKI,mD;MACA,2BAA4B,I;K;yCAE5B,Y;MAEiB,IAAN,I;M5JUX,IAAI,E4JXQ,
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CA,OAAO,kD;K;+CAeX,iB;MAII,2BAAY,K;MACZ,gD;K;sCAGJ,Y;MAII,+C;K;;ICjDkC,wB;MAoFtC,oC;MAP
FgE,6B;K;sCAIhE,Y;MAAuC,0C;K;2CAEvC,mB;MAAWd,uB;;QvJkU3C,Q;QADb,YAAy,C;QACC,sB;QAAb,O
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,iBAAiB,CAAC,4B4KhTG,G5KgTH,CAAtB,C;Q4KhTgC,MAAM,2BAAuB,wCAAvB,C;;Q5KoTIC,2BAAO,sE;;
M4KpTX,+B;K;IAGJ,8C;MAUQ,kBADE,SACF,kB;QADJ,OACkC,YAAT,SAAK,IAAI,EAAy,YAAZ,C;;QADIC
,OAEY,uBAAmB,SAAnB,EAAyB,YAAzB,C;K;IAGhB,gD;MAWQ,kBADE,SACF,yB;QADJ,OACyC,cAAT,SA
AK,IAAI,EAAy,YAAZ,C;;QADzC,OAEY,8BAA0B,SAA1B,EAAgC,YAAhC,C;K;;Iac0B,4C;MAAC,wB;M
AAoC,0B;K;qEAApC,Y;MAAA,yB;K;0CACvC,iB;MAA4C,OAAI,OAAL,QAAL,EAAO,KAAP,C;K;4CAChD,Y;
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gE,OAAA,QAAL,qBAAc,KAAAd,C;K;6CACpE,e;MAA+B,OAAA,QAAL,WAAI,GAAJ,C;K;0FACT,Y;MAAQ,OA
AA,QAAL,K;K;4FACH,Y;MAAQ,OAAA,QAAL,O;K;6FACJ,Y;MAAQ,OAAA,QAAL,Q;K;8DAEvD,e;MAAmD,g
BAAJ,Q;MAAI,4B;M5K4PxC,Q;MALX,YAAY,oB4KvPyD,G5KuPzD,C;MACZ,IAAI,iBAAiB,CAAC,4B4KxP+
C,G5KwP/C,CAAtB,C;QACI,2B4KzPwE,mB;;Q5K4PxE,2BAAO,sE;;M4K5PoC,+B;K;;IAGN,mD;MAAC,wB;M
AA2C,0B;K;4EAA3C,Y;MAAA,yB;K;iDAC1C,iB;MAA4C,OAAI,OAAL,QAAL,EAAO,KAAP,C;K;mDACHD,Y;
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gB;MAA2C,QAAL,gBAAO,IAAP,C;K;gDAC/C,Y;MAAuB,QAAL,Q;K;qEAE3B,e;MAAmD,gBAAJ,Q;MAAI,4B;
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B,C;QACI,2B4KpOwE,mB;;Q5KuOxE,2BAAO,sE;;M4KvOoC,+B;K;;I5KvFnD,oB;MAAA,wB;MACI,8C;K;gCA
EA,iB;MAA4C,oCAAsB,KAAM,U;K;kCACxY,Y;MAA+B,Q;K;kCAC/B,Y;MAAkC,W;K;gFAEX,Y;MAAQ,Q;K
;CAC/B,Y;MAAkC,W;K;2CAEIC,e;MAA+C,Y;K;6CAC/C,iB;MAAsD,Y;K;mCACtD,e;MAAwC,W;K;mFACY,
Y;MAAQ,6B;K;gFAC/B,Y;MAAQ,6B;K;kFACI,Y;MAAQ,8B;K;uCAEjD,Y;MAAiC,6B;K;;IAjBrC,gC;MAAA,+
B;QAAA,c;;MAAA,wB;K;IAoBA,oB;MAMuE,Q;MAA7B,OAA6B,uE;K;IAEvE,wB;MAaI,OAAI,KAAM,OAAN
,GAAa,CAAjB,GAA0B,QAAN,KAAM,EAAM,qBAAc,YAA,Y,KAAM,OAAIB,CAAd,CAAN,CAA1B,GAA6E,U;
K;kFAEjF,yB;MAAA,oD;MAAA,mB;QAO8C,iB;O;KAP9C,C;8FASA,yB;MAAA,wE;MAAA,mB;QAQ4D,2B;O;
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S;K;wFVMX,yB;MAAA,4D;MAAA,mB;QAOsD,qB;O;KAPtD,C;IASA,4B;MAM8G,gBAAvC,eAAc,YAA,Y,KA
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L9D,C;IAOA,8B;MAU+E,OAAM,QAAN,KAAM,EAAM,qBAAc,YAA,Y,KAAM,OAAIB,CAAd,CAAN,C;K;sFA
ErF,yB;MchBA,wE;MdgBA,gC;QcZiC,gBAAtB,oB;Qd8BiB,aU7DxB,W;QV6DA,OU5DO,SI8B2C,Q;O;KdYtD,C
;uFA0BA,yB;McnCA,uE;MdmCA,0C;Qc/ByC,gBAA9B,mBdqDiB,QcrDjB,C;QdqD2B,aU3FIC,W;QV2FA,OU1F
O,SIqCmD,Q;O;Kd+B9D,C;4FAoCA,qB;MAK+D,QAAC,mB;K;kGAEhE,qB;MAWI,OAAO,qBAAGB,mB;K;sFA
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,oBAxBoE,GAwBpE,C;O;KAhCpD,C;+EAUA,yB;MAAA,kC;MAAA,8B;MAAA,iC;QAKiC,Q;QAA7B,OAAgD,
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oE,sB;K;kFAEpE,yB;MAAA,6B;MAAA,4B;QAIgE,qBAAK,aAAL,EAAU,eAAV,C;O;KAJhE,C;2FAMA,wC;MA
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;KANf,C;IAUA,oC;MAUkD,uCAAqB,GAARb,C;K;sFAEID,wC;MAUW,Q;MADP,YAA,Y,oBAAI,GAAJ,C;MAC
L,IAAI,aAAJ,C;QACH,aAAa,c;QACb,sBAAI,GAAJ,EAAS,MAAT,C;QACA,a;;QAEA,Y;;MALJ,W;K;wFASJ,qB
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AYA,yB;MAAA,0D;MAAA,uE;MAAA,uC;QAYW,kBAAU,mBAAoB,YAA,Y,cAAZ,CAApB,C;Qa+wBD,Q;QA
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AU,OAAV,CAAL,C;UACI,WAAy,aAAI,OAAQ,IAAZ,EAAiB,OAAQ,MAAzB,C;;;MAGpB,OAAO,W;K;2FAG
X,yB;MAAA,wE;MAAA,uC;QAOW,kBAAY,oB;QafH,Q;QAAA,OApJoE,iBAAQ,W;QAoJ5F,OAAgB,cAAhB,
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B,oBAAW,OAAhD,C;YAAL,K;YACQ,0BAAM,qBAAoB,YAAy,cAAZ,CAApB,CAAN,C;YAhL,K;QAAP,W;;
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AL,CAAN,C;;UAFoD,OAGjD,mBAAM,qBAAoB,YAAy,gBAAZ,CAApB,CAAN,C;;K;IAGZ,yC;MAIwB,OAAp
B,WAAoB,Y;MAApB,kB;K;IAEJ,4B;MAM4D,OAA6B,oBAA7B,mBAAM,oBAAN,CAA6B,C;K;IAEzF,yC;MAI
wB,SAApB,WAAoB,Y;MAApB,kB;K;IAEJ,4B;MAMqD,QAAM,cAAN,C;aACjD,C;UADiD,OAC5C,U;aACL,C;
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;MAOI,Q;MAAA,IAAI,SAAK,UAAT,C;QAAA,OAA0B,MAAN,KAAM,C;;QAAiC,kBAApB,qBAAC,SAAd,C;Q
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AOwB,kBAApB,qBAAC,SAAd,C;MAA4B,4B;MAA5B,OAA4C,oBU3jBrC,WV2jBqC,C;K;IAEhD,iC;MAOwB,k
BAApB,qBAAC,SAAd,C;MAA4B,+B;MAA5B,OUpkBO,W;K;0FVukBX,2B;MAKI,sBAAI,IAAK,MAAT,EAAg
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A+B,CAA/B,O;MACf,gBAAY,CAAZ,C;MACA,kBAAK,kBAAL,EAAW,oDAAX,C;M/KtFJ,IAAI,E+KuFM,YA
AS,C/KvFf,CAAJ,C;QACI,cAdW,e;QAeX,MAAM,6BAAsB,OAAQ,WAA9B,C;;M+KuFN,OAAO,+BAAW,qDA
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,MAAM,gCAAYB,mDAAGD,SAAZE,C;;K;IAGIB,0C;MAUsD,QAAM,SAAN,C;aACID,M;UADkD,OACxC,I;aA
CV,O;UAFkD,OAevC,K;;UAFuC,OAG1C,I;K;I+Kr8CZ,sB;MAAA,0B;MAIL,aAC+B,e;MAC/B,cACgC,e;MACH
C,WAC6B,e;MAC7B,YAC8B,e;MAC9B,eACiC,e;MACjC,YAC8B,gB;MAC9B,aAC+B,gB;MAC/B,YAC8B,gB;
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C;aAMPe,G;UANoE,uC;aAOpE,G;UAPoE,sC;;UAQ5D,MAAM,gCAAyB,uCAAoC,SAA7D,C;;K;IAGlB,yD;MA
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,C;K;oEACtC,oB;MAAkD,mDAAe,gBAAf,EAA0B,iBAA1B,EAA5C,0BAAS,QAAT,CAAtC,C;K;;iDAGtD,Y;M
AAmC,mDAAe,WAAf,EAAuB,IAAvB,EAA6B,gCAAS,KAAtC,C;K;;IAGvC,0B;MAGB8B,yE;MAC1B,mB;K;oC
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CAGJ,Y;MACI,OAAI,cAAJ,GAAe,EAAf,GAAwB,MAAK,U7NyQA,K6NzQL,QAAqB,S7NyQhB,K6NzQL,I;K;
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EAAzB,C;MAG5C,aAGyB,K;MAEZB,YAGwB,4BAA0B,KAA1B,EAAiC,YAAjC,EAA+C,IAA/C,C;MAExB,YA
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,a;K;6BAAA,iB;MAAA,2IAG4D,oCAH5D,G;K;wEAuWA,yB;MAAA,+B;MAAA,4B;QAW0C,sBAAW,oBAAL, SAAK,CAAX,C;O;KAX1C,C;0EAYA,yB;MAAA,+B;MAAA,4B;QAW2C,sBAAW,oBAAL,SAAK,CAAX,C;O;K AX3C,C;0EAYA,yB;MAAA,+B;MAAA,4B;QAWyC,sBAAW,oBAAL,SAAK,CAAX,C;O;KAXzC,C;0EAYA,yB; MAAA,+B;MAAA,4B;QAU0C,sBAAM,SAAN,C;O;KAV1C,C;yEAYA,yB;MAAA,kD;MAAA,4B;QAS2C,qBAA mB,SAAnB,C;O;KAT3C,C;0EAUUA,yB;MAAA,kD;MAAA,4B;QAS4C,qBAAC,SAAd,C;O;KAT5C,C;liB9ZA,6B; MACqB,sB;K;uCAKjB,iB;MAM6C,OjBsYP,UiBtYO,aAAQ,KAAR,CjBsYP,C;K;uCiBpYtC,wB;MAOI,aAAQ,K AAR,IAAiB,KjBoRc,K;K;kFiBhRL,Y;MAAQ,OAAA,YAAQ,O;K;oCAE9C,Y;MAC8E,+BAAS,YAAT,C;K;IAGx D,oC;MAAiC,wB;MAAhC,oB;MACnB,eAAoB,C;K;4CACpB,Y;MAAyB,sBAAQ,YAAM,O;K;8CACvC,Y;MAA yD,Q;MAA9B,IAAI,eAAQ,YAAM,OAAIB,C;QAAA,OjBgXO,UiBhXiB,aAAM,mBAAN,EAAM,2BAAN,OjBgX jB,C;;QiBhX+C,MAAM,2BAAuB,YAAM,WAA7B,C;K;;0CAG3F,mB;MAIS,Q;MAAL,IAAI,eAAC,0EAAD,QA AJ,C;QAAiC,OAAO,K;MAExC,OAAe,WAAR,YAAQ,EAAS,OjB8PO,KiB9PhB,C;K;+CAGnB,oB;MACY,Q;MA A2B,gBAA3B,gE;MAA2B,c;;QhB0nDvB,U;QADhB,IAAI,wCAAsB,mBAA1B,C;UAAqC,aAAO,I;UAAP,e;;QA CrB,6B;QAAhB,OAAgB,gBAAhB,C;UAAgB,2B;UgB1nD6B,2BhB0nDR,OgB1nDQ,Q;UAAA,W;YAAuB,oBAA R,YAAQ,EhB0nD/B,ODh4CF,KiB1PiC,C;;UhB0nD9C,IAAI,OAAJ,C;YAAyB,aAAO,K;YAAP,e;;;QAC/C,aAAO ,I;;;MgB3nDH,iB;K;mCAGJ,Y;MAAkC,OAAA,IAAK,QAAQ,OAAb,KAAqB,C;K;;IA/CvD,sC;MAAA,oD;MAC gC,uBAAK,iBAAU,IAAV,CAAL,C;MADhC,Y;K;;;oCAPJ,Y;MAAA,OAKqB,qDALrB,M;K;oCAAA,Y;MAAA, c;MAKqB,wD;MALrB,a;K;kCAAA,iB;MAAA,2IAKqB,0CALrB,G;K;gFAyDA,yB;MAAA,yC;MAWSc,yC;QAA A,wB;UAAW,OAAA,aAAK,KAAL,CjByOV,K;S;O;MiBpPvC,6B;QAWI,OAAO,oBAAW,kBAAU,IAAV,EAAG B,uBAAhB,CAAX,C;O;KAXX,C;kFAcA,oB;MAGqE,e;K;I8LnE9C,2C;MAAsBnB,kC;MAtByD,4BAAiB,KAAjB, EAAwB,YAAxB,K;K;qFAC/B,Y;MAAQ,iB;K;4FACD,Y;MAAQ,gB;K;8CAEzC,iB;MAA+C,W/MgDoB,a+MhD pB,U/MgDsC,KAAIB,E+MhDX,K/MgDyC,KAA9B,C+MhDpB,K;MAAA,S;QAAkB,O/MgDE,a+MhDF,K/MgDo B,KAAIB,E+MhDO,S/MgDuB,KAA9B,C+MhDF,K;;MAAIB,W;K;qCAE/C,Y;MAKkC,O/MyCiC,a+MzCjC,U/M yCmD,KAAIB,E+MzCzB,S/MyCuD,KAA9B,C+MzCjC,I;K;oCAEIC,iB;MAEY,UAAwB,M;MADhC,8CAAwB,k BAAa,KAAM,UAAAnB,KACHB,2CAAS,KAAM,MAAf,cAAwB,6CAAQ,KAAM,KAAd,QAAxB,CADgB,CAAxB ,C;K;sCAGJ,Y;MACI,OAAI,cAAJ,GAAe,EAaf,GAAwB,M/M0QK,CARckB,U+MrOjB,U/MqO4B,KAAL,KAAo B,CAVzB,U+M3NP,U/M2Na,yB+M3NH,E/M2NG,CAAN,CAUyB,MAApB,CAAN,CAqCIB,MAAK,Q+M1QV,Q /M0QK,CARckB,U+MrOoB,S/MqOT,KAAL,KAAoB,CAVzB,U+M3N6B,S/M2NvB,yB+M3NgC,E/M2NhC,CAA N,CAUyB,MAApB,CAAN,CAqCIB,MAAK,Q+M1QV,I;K;sCAE5B,Y;MAAkC,OAAE,UAAF,qBAAU,S;K;IAE5 C,gC;MAAA,oC;MACI,aAC+B,iBAAW,6BAAM,UAAjB,EAA4B,6BAAM,UAAIC,C;K;;IAFnC,4C;MAAA,2C; QAAA,0B;;MAAA,oC;K;;IAYJ,qD;MA4CI,wC;MAtCI,IAAI,gBAAJ,C;QAAwB,MAAa,gCAAyB,wBAAzB,C;M ACrC,IAAI,sCAAJ,C;QAA4B,MAAa,gCAAyB,yEAAzB,C;MAG7C,aAG0B,K;MAE1B,YAGyB,4BAA0B,KAA1 B,EAAiC,YAAjC,EAA+C,IAA/C,C;MAEzB,YAGwB,I;K;0CAExB,Y;MAAiD,oCAAYB,UAAzB,EAAGC,SAAhC ,EAAcC,SAATC,C;K;yCAEjD,Y;MAMqC,OAAI,uBAAO,CAAX,G/Mf8B,a+MehB,U/MfkC,KAAIB,E+MeR,S/Mf sC,KAA9B,C+MehB,IAAd,G/Mf8B,a+MeE,U/MfgB,KAAIB,E+MeU,S/MfoB,KAA9B,C+MeE,I;K;wCAErE,iB; MAEY,UAAwB,M;MADhC,kDAA8B,kBAAa,KAAM,UAAAnB,KACTB,2CAAS,KAAM,MAAf,cAAwB,6CAAQ, KAAM,KAAd,QAAxB,KAA8C,kBAAQ,KAAM,KAAd,CADxB,CAA9B,C;K;0CAGJ,Y;MACI,OAAI,cAAJ,GAA e,EAaf,GAAwB,OAAM,M/MkND,CARckB,U+M7KX,U/M6KsB,KAAL,KAAoB,CAVzB,U+MnKD,U/MmKO,y B+MnKG,E/MmKH,CAAN,CAUyB,MAApB,CAAN,CAqCIB,MAAK,Q+MINJ,Q/MkND,CARckB,U+M7K0B,S/ M6Kf,KAAL,KAAoB,CAVzB,U+MnKmC,S/MmK7B,yB+MnKsC,E/MmKtC,CAAN,CAUyB,MAApB,CAAN,C AqCIB,MAAK,Q+MINJ,IAAN,SAAQF,cAAU,6BAAU,EAAY,CAAV,CAAYB,QAA9G,I;K;0CAE5B,Y;MAAkC, OAAI,uBAAO,CAAX,GAAgB,UAAF,qBAAU,SAAV,cAAqB,SAARB,WAAAd,GAAgD,UAAF,2BAAgB,SAAhB,c AA6B,SAAD,aAA5B,W;K;IAEHf,sC;MAAA,0C;K;mEACI,sC;MAQ+F,4BAAiB,UAAjB,EAA6B,QAA7B,EA AuC,IAAvC,C;K;;IATnG,kD;MAAA,iD;QAAA,gC;;MAAA,0C;K;;IAObkC,qD;MAA0C,wB;MAC5E,sBAA2B,I;M AC3B,iBAAMc,kBAAO,CAA1C,G/MhDmE,a+MgDtB,K/MhDwC,KAAIB,E+MgDb,I/MhD2C,KAA9B,C+MgDt B,KAA7C,G/MhDmE,a+MgDH,K/MhDqB,KAAIB,E+MgDM,I/MhDwB,KAA9B,C+MgDH,K;MACHc,c/M0SsC, U+M1SnB,I/M0SmB,C;M+MzStC,cAAuB,cAAJ,GAAa,KAAb,GAAwB,mB;K;iDAE3C,Y;MAAkC,qB;K;mDAEI C,Y;MACI,YAAY,W;MACZ,IAAI,6BAAS,mBAAT,QAAJ,C;QACI,IAAI,CAAC,cAAL,C;UAAc,MAAa,6B;QAC 3B,iBAAU,K;;QAEV,c/M/C+C,U+M+C/C,W/M/C0D,KAAK,K+M+CvD,W/M/CkE,KAAX,CAAhB,C;;M+MiDn

D,OAAO,K;K;;wEC7Hf,yB;MAAA,8C;MAAA,uB;QAOI,OAAO,MAAM,CAAN,EAAS,CAAT,C;O;KAPX,C;wE
AUA,yB;MAAA,8C;MAAA,uB;QAOI,OAAO,MAAM,CAAN,EAAS,CAAT,C;O;KAPX,C;wEAUA,yB;MAAA,8
C;MAAA,uB;QAOI,OAAO,MAAM,CAAN,EAAS,CAAT,C;O;KAPX,C;wEAUA,yB;MAAA,8C;MAAA,uB;QAO
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6B,C;O;K+G9CIE,C;sGAQA,yB;MAAA,kE;MAAA,4B;QAMsD,OAAQ,sBjO+QzB,ciO/QyB,C;O;KAN9D,C;8FA
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C;O;KANhE,C;8FAQA,yB;MAAA,0D;MjN6SA,+B;MiN7SA,4B;QAOqD,OjNgTX,eiNhToB,kBjNuMvB,ciNvMu
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NxR0B,WjN+K7B,ciN/K6B,EAAW,QAAX,CjNwR1B,C;O;KiNrS1C,C;iFAeA,yB;M/GgEA,4C;MIG4MA,+B;Mi
N5QA,sC;QAa4D,OjNyQIB,ekGzMuB,WIGgG1B,ckGhG0B,EAAW,C+GhEK,Q/GgEL,IAAX,CIGyMvB,C;O;Ki
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kO/LA,4B;QAOqD,OIOmMZ,eAAW,OkOnMS,kBlOgGnB,cAAL,GAAiB,GkOhGO,CIOmMT,CAAX,C;O;KkO1
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That's all there is to it!

1.316 joda-time 2.12.0

1.316.1 Available under license :

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1.317 python 2.7.5-92.el7_9

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A. HISTORY OF THE SOFTWARE

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's

principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release | Derived from | Year | Owner | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 | | 1991-1995 | CWI | yes |
| 1.3 thru 1.5.2 | 1.2 | 1995-1999 | CNRI | yes |
| 1.6 | 1.5.2 | 2000 | CNRI | no |
| 2.0 | 1.6 | 2000 | BeOpen.com | no |
| 1.6.1 | 1.6 | 2001 | CNRI | yes (2) |
| 2.1 | 2.0+1.6.1 | 2001 | PSF | no |
| 2.0.1 | 2.0+1.6.1 | 2001 | PSF | yes |
| 2.1.1 | 2.1+2.0.1 | 2001 | PSF | yes |
| 2.2 | 2.1.1 | 2001 | PSF | yes |
| 2.1.2 | 2.1.1 | 2002 | PSF | yes |
| 2.1.3 | | | | |
| 2.1.2 | 2002 | PSF | yes | |
| 2.2.1 | 2.2 | 2002 | PSF | yes |
| 2.2.2 | 2.2.1 | 2002 | PSF | yes |
| 2.2.3 | 2.2.2 | 2003 | PSF | yes |
| 2.3 | 2.2.2 | 2002-2003 | PSF | yes |
| 2.3.1 | 2.3 | 2002-2003 | PSF | yes |
| 2.3.2 | 2.3.1 | 2002-2003 | PSF | yes |
| 2.3.3 | 2.3.2 | 2002-2003 | PSF | yes |
| 2.3.4 | 2.3.3 | 2004 | PSF | yes |
| 2.3.5 | 2.3.4 | 2005 | PSF | yes |
| 2.4 | 2.3 | 2004 | PSF | yes |
| 2.4.1 | 2.4 | 2005 | PSF | yes |

| | | | | |
|-------|-------|------|-----|-----|
| 2.4.2 | 2.4.1 | 2005 | PSF | yes |
| 2.4.3 | 2.4.2 | 2006 | PSF | yes |
| 2.4.4 | 2.4.3 | 2006 | PSF | yes |
| 2.5 | 2.4 | 2006 | PSF | yes |
| 2.5.1 | 2.5 | 2007 | PSF | yes |
| 2.5.2 | 2.5.1 | 2008 | PSF | yes |
| 2.5.3 | 2.5.2 | 2008 | PSF | yes |
| 2.6 | 2.5 | 2008 | PSF | yes |
| 2.6.1 | 2.6 | 2008 | PSF | yes |
| 2.6.2 | 2.6.1 | 2009 | PSF | yes |
| 2.6.3 | 2.6.2 | 2009 | PSF | yes |
| 2.6.4 | 2.6.3 | 2009 | PSF | yes |
| 2.6.5 | 2.6.4 | 2010 | PSF | yes |
| 2.7 | 2.6 | 2010 | PSF | yes |

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(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

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1.318 netty-transport-native-kqueue

4.1.48.Final

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 */
```

Found in path(s):

```
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/KQueueServerSocketChannelConfig.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/NativeLongArray.java
*
/opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/AbstractKQueueServerChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/KQueueRecvByteAllocatorHandle.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/KQueueServerChannelConfig.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/KQueueDomainSocketChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/package-info.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/AbstractKQueueChannel.java
*
/opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/KQueue.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-
jar/io/netty/channel/kqueue/Native.java
```

* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueServerSocketChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/BsdSocket.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueServerDomainSocketChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueEventArray.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueStaticallyReferencedJniMethods.java
*
/opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/netty_kqueue_eventarray.h
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/netty_kqueue_bsdsocket.c
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/AcceptFilter.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueSocketChannelConfig.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueSocketChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueDatagramChannelConfig.java
*
/opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueChannelOption.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/AbstractKQueueStreamChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueEventLoopGroup.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueChannelConfig.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueDatagramChannel.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/netty_kqueue_eventarray.c
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueEventLoop.java
*
/opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/netty_kqueue_bsdsocket.h
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/io/netty/channel/kqueue/KQueueDomainSocketChannelConfig.java
* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/netty_kqueue_native.c
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* /opt/cola/permits/1472651459_1668436661.8519447/0/netty-transport-native-kqueue-4-1-48-final-sources-2-jar/META-INF/maven/io.netty/netty-transport-native-kqueue/pom.xml

1.319 metrics-health-checks 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.health

Build-Jdk-Spec: 1.8

Bundle-Description: An addition to Metrics which provides the ability to run application-specific health checks, allowing you to check your application's health in production.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Health Checks

Bundle-SymbolicName: io.dropwizard.metrics.healthchecks

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.health;uses:="com.codahale.metrics";version="4.1.33",com.codahale.metrics.health.jvm;uses:="com.codahale.metrics.health,com.codahale.metrics.jvm";version="4.1.33",com.codahale.metrics.health.annotation;version="4.1.33"

Implementation-Title: Metrics Health Checks

Implementation-Version: 4.1.33

Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.codahale.metrics;version="[4.1,5)",com.codahale.metrics.health,com.codahale.metrics.health.annotation,com.codahale.metrics.jvm;version="[4.1,5)";resolution:=optional

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501796_1668971429.6280649/0/metrics-healthchecks-4-1-33-jar/META-INF/MANIFEST.MF

1.320 dropwizard-lifecycle 2.0.34

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1.321 metrics-jvm 4.1.33

1.321.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jvm

Build-Jdk-Spec: 1.8

Bundle-Description: A set of classes which allow you to monitor critical aspects of your Java Virtual Machine using Metrics.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: JVM Integration for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.jvm
Bundle-Version: 4.1.33
Created-By: Apache Maven Bundle Plugin 5.1.8
Export-Package: com.codahale.metrics.jvm;uses:="com.codahale.metrics,javax.management";version="4.1.33"
Implementation-Title: JVM Integration for Metrics
Implementation-Version: 4.1.33
Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.sun.management;resolution:=optional,com.codahale.metrics;version="[4.1,5)",javax.management
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501873_1668971438.6468465/0/metrics-jvm-4-1-33-jar/META-INF/MANIFEST.MF

1.322 dropwizard-logging 2.0.34

1.322.1 Available under license :

Apache-2.0

1.323 dropwizard-servlets 2.0.34

1.323.1 Available under license :

Apache-2.0

1.324 dropwizard-util 2.0.34

1.324.1 Available under license :

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1.325 metrics-servlets 4.1.33

1.325.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.servlets

Build-Jdk-Spec: 1.8

Bundle-Description: A set of utility servlets for Metrics, allowing you to expose valuable information about your production environment.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Utility Servlets
Bundle-SymbolicName: io.dropwizard.metrics.servlets
Bundle-Version: 4.1.33
Created-By: Apache Maven Bundle Plugin 5.1.8
Export-Package: com.codahale.metrics.servlets;uses:="com.codahale.metrics,com.codahale.metrics.health,com.fasterxml.jackson.databind,javax.servlet,javax.servlet.http";version="4.1.33"
Implementation-Title: Metrics Utility Servlets
Implementation-Version: 4.1.33
Import-Package: javax.servlet;version="[2.5.0,4.0.0)",javax.servlet.http;version="[2.5.0,4.0.0)",com.codahale.metrics;version="[4.1,5)",com.codahale.metrics.health;version="[4.1,5)",com.codahale.metrics.json;version="[4.1,5)",com.codahale.metrics.jvm;version="[4.1,5)",com.fasterxml.jackson.databind;version="[2.9,3)",com.fasterxml.jackson.databind.util;version="[2.9,3)",com.papertrail.profiler;version="[1.1,2)"
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501845_1668971417.0605376/0/metrics-servlets-4-1-33-jar/META-INF/MANIFEST.MF

1.326 drop-wizard-metrics 2.0.34

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1.327 dropwizard-jersey 2.0.34

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1.328 metrics-jetty 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jetty9

Build-Jdk-Spec: 1.8

Bundle-Description: A set of extensions for Jetty 9.3 and higher which provide instrumentation of thread pools, connector metrics, and application latency and utilization.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Integration for Jetty 9.3 and higher

Bundle-SymbolicName: io.dropwizard.metrics.jetty9

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8
Export-Package: com.codahale.metrics.jetty9;uses:="com.codahale.metrics, javax.servlet, javax.servlet.http, org.eclipse.jetty.io, org.eclipse.jetty.server, org.eclipse.jetty.server.handler, org.eclipse.jetty.util.annotation, org.eclipse.jetty.util.component, org.eclipse.jetty.util.thread";version="4.1.33"
Implementation-Title: Metrics Integration for Jetty 9.3 and higher
Implementation-Version: 4.1.33
Import-Package: javax.servlet;version="[2.5.0,4.0.0)", javax.servlet.http;version="[2.5.0,4.0.0)", com.codahale.metrics;version="[4.1,5)", org.eclipse.jetty.http;version="[9.4,10)", org.eclipse.jetty.io;version="[9.4,10)", org.eclipse.jetty.server;version="[9.4,10)", org.eclipse.jetty.server.handler;version="[9.4,10)", org.eclipse.jetty.util.annotation;version="[9.4,10)", org.eclipse.jetty.util.component;version="[9.4,10)", org.eclipse.jetty.util.thread;version="[9.4,10)"
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501782_1668971450.344051/0/metrics-jetty9-4-1-33-jar/META-INF/MANIFEST.MF

1.329 metrics-logback 4.1.33

1.329.1 Available under license :

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Manifest-Version: 1.0
Automatic-Module-Name: com.codahale.metrics.logback
Build-Jdk-Spec: 1.8
Bundle-Description: An instrumented appender for Logback.
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>
Bundle-ManifestVersion: 2
Bundle-Name: Metrics Integration for Logback
Bundle-SymbolicName: io.dropwizard.metrics.logback
Bundle-Version: 4.1.33
Created-By: Apache Maven Bundle Plugin 5.1.8
Export-Package: com.codahale.metrics.logback;uses:="ch.qos.logback.classic.spi, ch.qos.logback.core, com.codahale.metrics";version="4.1.33"
Implementation-Title: Metrics Integration for Logback
Implementation-Version: 4.1.33
Import-Package: ch.qos.logback.classic;version="[1.2,2)", ch.qos.logback.classic.spi;version="[1.2,2)", ch.qos.logback.core;version="[1.2,2)", com.codahale.metrics;version="[4.1,5)"
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-6.3.1.202206071316

Found in path(s):

*

/opt/cola/permits/1480501725_1668971427.6429615/0/metrics-logback-4-1-33-jar/META-INF/MANIFEST.MF

1.330 dropwizard-request-logging 2.0.34

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1.331 metrics 4.1.33

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1.332 metrics-jmx 4.1.33

1.332.1 Available under license :

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Manifest-Version: 1.0
Automatic-Module-Name: com.codahale.metrics.jmx
Build-Jdk-Spec: 1.8
Bundle-Description: A set of classes which allow you to report metrics via JMX.
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>
Bundle-ManifestVersion: 2
Bundle-Name: Metrics Integration with JMX
Bundle-SymbolicName: io.dropwizard.metrics.jmx
Bundle-Version: 4.1.33
Created-By: Apache Maven Bundle Plugin 5.1.8
Export-Package: com.codahale.metrics.jmx;uses:="com.codahale.metrics,javax.management";version="4.1.33"
Implementation-Title: Metrics Integration with JMX
Implementation-Version: 4.1.33
Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.codahale.metrics;version="[4.1,5)",javax.management
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501768_1668971443.6143289/0/metrics-jmx-4-1-33-jar/META-INF/MANIFEST.MF

1.333 dropwizard-validation 2.0.34

1.333.1 Available under license :

Apache-2.0

1.334 dropwizard-jackson 2.0.34

1.334.1 Available under license :

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1.335 metrics-annotation 4.1.33

1.335.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.annotation

Build-Jdk-Spec: 1.8

Bundle-Description: A dependency-less package of just the annotations used by other Metrics modules.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Annotations for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.annotation

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.annotation;version="4.1.33"

Implementation-Title: Annotations for Metrics

Implementation-Version: 4.1.33

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501824_1668971454.0843751/0/metrics-annotation-4-1-33-jar/META-INF/MANIFEST.MF

1.336 dropwizard-core 2.0.34

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1.337 dropwizard-jetty 2.0.34

1.337.1 Available under license :

Apache-2.0

1.338 metrics-json 4.1.33

1.338.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.json

Build-Jdk-Spec: 1.8

Bundle-Description: A set of Jackson modules which provide serializers
for most Metrics classes.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Jackson Integration for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.json

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.json;uses:="com.codahale.metrics,
com.fasterxml.jackson.core,com.fasterxml.jackson.databind";version="4
.1.33"

Implementation-Title: Jackson Integration for Metrics

Implementation-Version: 4.1.33

Import-Package: com.codahale.metrics;version="[4.1,5)",com.codahale.me
trics.health;version="[4.1,5)";resolution:=optional,com.fasterxml.jac
kson.core;version="[2.9,3)",com.fasterxml.jackson.databind;version="[
2.9,3)",com.fasterxml.jackson.databind.module;version="[2.9,3)",com.f
asterxml.jackson.databind.ser;version="[2.9,3)",com.fasterxml.jackson
.databind.ser.std;version="[2.9,3)"

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

Found in path(s):

* /opt/cola/permits/1480501740_1668971447.245473/0/metrics-json-4-1-33-jar/META-INF/MANIFEST.MF

1.339 metrics-jersey2 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jersey2

Build-Jdk-Spec: 1.8

Bundle-Description: A set of class providing Metrics integration for Jersey, the reference JAX-RS implementation.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Integration for Jersey 2.x

Bundle-SymbolicName: io.dropwizard.metrics.jersey2

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.jersey2;uses:="com.codahale.metrics.javax.ws.rs.core.javax.ws.rs.ext,org.glassfish.jersey.server.model,org.glassfish.jersey.server.monitoring";version="4.1.33"

Implementation-Title: Metrics Integration for Jersey 2.x

Implementation-Version: 4.1.33

Import-Package: com.codahale.metrics;version="[4.1,5)",com.codahale.metrics.annotation;version="[4.1,5)",javax.ws.rs.core;version="[2.1,3)",javax.ws.rs.ext;version="[2.1,3)",org.glassfish.jersey.server;version="[2.36,3)",org.glassfish.jersey.server.model;version="[2.36,3)",org.glassfish.jersey.server.monitoring;version="[2.36,3)"

Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

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1.340 dropwizard-configuration 2.0.34

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1.343 device-mapper-multipath 0.4.9-136.el7_9

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1.344 jctools-core 4.0.1

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Manifest-Version: 1.0

Bnd-LastModified: 1662622707903

Build-Jdk-Spec: 11

Bundle-Description: Java Concurrency Tools Core Library

Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0.txt>

Bundle-ManifestVersion: 2

Bundle-Name: Java Concurrency Tools Core Library

Bundle-SymbolicName: org.jctools.core

Bundle-Version: 4.0.1

Created-By: Apache Maven Bundle Plugin 5.1.6

Export-Package: org.jctools.maps;version="4.0.1",org.jctools.util;uses:="sun.misc";version="4.0.1",org.jctools.queues;version="4.0.1",org.jctools.queues.atomic;uses:="org.jctools.queues";version="4.0.1",org.jctools.queues.unpadded;uses:="org.jctools.queues";version="4.0.1",org.jctools.counters;version="4.0.1"

Import-Package: sun.misc;resolution:=optional

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.6))"

Tool: Bnd-6.2.0.202202251641

Found in path(s):

* /opt/cola/permits/1500645298_1670406227.9308958/0/jctools-core-4-0-1-jar/META-INF/MANIFEST.MF

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* /opt/cola/permits/1500645298_1670406227.9308958/0/jctools-core-4-0-1-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

1.345 gson 2.10

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Manifest-Version: 1.0

Created-By: 17.0.4.1 (Oracle Corporation)

Build-Jdk-Spec: 17

Bnd-LastModified: 1666660169762

Bundle-ContactAddress: <https://github.com/google/gson>

Bundle-Description: Gson JSON library
Bundle-DocURL: <https://github.com/google/gson/gson>
Bundle-License: "Apache-2.0";link="https://www.apache.org/licenses/LICENSE-2.0.txt"
Bundle-ManifestVersion: 2
Bundle-Name: Gson
Bundle-RequiredExecutionEnvironment: JavaSE-1.7, JavaSE-1.8
Bundle-SCM: url="https://github.com/google/gson/gson/",connection="scm:git:https://github.com/google/gson.git/gson",developer-connection="scm:git:git@github.com:google/gson.git/gson",tag="gson-parent-2.10"
Bundle-SymbolicName: com.google.gson
Bundle-Vendor: Google Gson Project
Bundle-Version: 2.10.0
Export-Package: com.google.gson;uses:="com.google.gson.reflect,com.google.gson.stream";version="2.10.0",com.google.gson.annotations;version="2.10.0",com.google.gson.reflect;version="2.10.0",com.google.gson.stream;version="2.10.0"
Import-Package: sun.misc;resolution:=optional,com.google.gson.annotations
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"
Tool: Bnd-6.3.1.202206071316
Multi-Release: true

Found in path(s):

* /opt/cola/permits/1501397172_1670465940.2721026/0/gson-2-10-2-jar/META-INF/MANIFEST.MF

1.346 cloudevents-kafka 2.1.1

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* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/META-INF/maven/io.cloudevents/cloudevents-kafka/pom.xml

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* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/impl/KafkaHeaders.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/impl/KafkaSerializerMessageWriterImpl.java

*

/opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/CloudEventDeserializer.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/KafkaMessageFactory.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/CloudEventMessageSerializer.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/CloudEventMessageDeserializer.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/impl/KafkaBinaryMessageReaderImpl.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/CloudEventSerializer.java

* /opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/impl/KafkaProducerMessageWriterImpl.java

*

/opt/cola/permits/1508291111_1670975016.7551763/0/cloudevents-kafka-2-1-1-sources-1-jar/io/cloudevents/kafka/impl/BaseKafkaMessageWriterImpl.java

1.347 cloudevents-api 2.1.1

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Found in path(s):

```
* /opt/cola/permits/1508291066_1670974985.798763/0/cloudevents-api-2-1-1-2-jar/META-INF/maven/io.cloudevents/cloudevents-api/pom.xml
```

1.348 cloudevents-core 2.1.1

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* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/CloudEventUtils.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/extensions/DistributedTracingExtension.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/format/EventFormat.java
*
/opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/impl/BaseBinaryMessageReader.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/impl/MessageUtils.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/v03/V1ToV03AttributesConverter.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/impl/CloudEventReaderAdapter.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/impl/BaseStructuredMessageReader.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/v03/CloudEventV03.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/Encoding.java
*
/opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/format/EventSerializationException.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/v1/CloudEventBuilder.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/v1/V03ToV1AttributesConverter.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/extensions/DaterefExtension.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/impl/BaseCloudEventBuilder.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/extensions/impl/ExtensionUtils.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/builder/CloudEventBuilder.java
*
/opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/provider/ExtensionProvider.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/MessageReader.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/impl/GenericStructuredMessageReader.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/io/cloudevents/core/message/StructuredMessageWriter.java


```
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/v1/CloudEventV1.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/message/MessageWriter.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/impl/BaseCloudEvent.java
*
/opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/message/StructuredMessageReader.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/provider/EventFormatProvider.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/v03/CloudEventBuilder.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/format/EventDeserializationException.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/impl/CloudEventContextReaderAdapter.java
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-
jar/io/cloudevents/core/message/impl/BaseGenericBinaryMessageReaderImpl.java
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```
* /opt/cola/permits/1508291239_1670975013.352485/0/cloudevents-core-2-1-1-sources-1-jar/META-
INF/maven/io.cloudevents/cloudevents-core/pom.xml
```

1.349 nss-softokn-freebl 3.79.0-4.el7_9

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This file contains a list of people who've made non-trivial
contribution to the Google C++ Testing Framework project. People
who commit code to the project are encouraged to add their names
here. Please keep the list sorted by first names.

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1.350 jose4j 0.6.3

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jar/org/jose4j/base64url/internal/apache/commons/codec/binary/BaseNCodec.java
*

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jar/org/jose4j/jwt/consumer/ErrorCodeValidatorAdapter.java

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jar/org/jose4j/jwk/VerificationJwkSelector.java
*

*

/opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-
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 * /opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-
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 * /opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-
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 * /opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-jar/org/jose4j/jwe/ContentEncryptionKeyDescriptor.java
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 * /opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-jar/org/jose4j/keys/HmacKey.java
 * /opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-jar/org/jose4j/jwx/CompactSerializer.java
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- * /opt/cola/permits/1534657383_1673960510.7888486/0/jose4j-0-6-3-sources-1-jar/org/jose4j/lang/InvalidKeyException.java
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1.351 objenesis 3.2

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lib/gss_mechs/mech_krb5/et/kdb5_err.c
lib/gss_mechs/mech_spnego/mech/gssapiP_spnego.h
lib/gss_mechs/mech_spnego/mech/spnego_mech.c
lib/krb5/kadm5/kadm_host_srv_names.c
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lib/krb5/kdb/kdb_log.c
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lib/libgss/g_exp_sec_context.c
lib/libgss/g_export_name.c
lib/libgss/g_glue.c
lib/libgss/g_imp_name.c
lib/libgss/g_imp_sec_context.c
lib/libgss/g_init_sec_context.c
lib/libgss/g_initialize.c
lib/libgss/g_inquire_context.c
lib/libgss/g_inquire_cred.c
lib/libgss/g_inquire_names.c
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lib/libgss/g_process_context.c
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lib/libgss/g_rel_oid_set.c
lib/libgss/g_seal.c
lib/libgss/g_sign.c
lib/libgss/g_store_cred.c
lib/libgss/g_unseal.c
lib/libgss/g_userok.c
lib/libgss/g_utils.c
lib/libgss/g_verify.c
lib/libgss/gssd_pname_to_uid.c
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The implementations of GSSAPI mechglue in GSSAPI-SPNEGO in "src/lib/gssapi", including the following files:

lib/gssapi/generic/gssapi_err_generic.et
lib/gssapi/mechglue/g_accept_sec_context.c
lib/gssapi/mechglue/g_acquire_cred.c
lib/gssapi/mechglue/g_canon_name.c
lib/gssapi/mechglue/g_compare_name.c
lib/gssapi/mechglue/g_context_time.c
lib/gssapi/mechglue/g_delete_sec_context.c
lib/gssapi/mechglue/g_dsp_name.c
lib/gssapi/mechglue/g_dsp_status.c
lib/gssapi/mechglue/g_dup_name.c
lib/gssapi/mechglue/g_exp_sec_context.c
lib/gssapi/mechglue/g_export_name.c
lib/gssapi/mechglue/g_glue.c
lib/gssapi/mechglue/g_imp_name.c
lib/gssapi/mechglue/g_imp_sec_context.c
lib/gssapi/mechglue/g_init_sec_context.c
lib/gssapi/mechglue/g_initialize.c
lib/gssapi/mechglue/g_inquire_context.c
lib/gssapi/mechglue/g_inquire_cred.c
lib/gssapi/mechglue/g_inquire_names.c

lib/gssapi/mechglue/g_process_context.c
lib/gssapi/mechglue/g_rel_buffer.c
lib/gssapi/mechglue/g_rel_cred.c
lib/gssapi/mechglue/g_rel_name.c
lib/gssapi/mechglue/g_rel_oid_set.c
lib/gssapi/mechglue/g_seal.c
lib/gssapi/mechglue/g_sign.c
lib/gssapi/mechglue/g_store_cred.c
lib/gssapi/mechglue/g_unseal.c
lib/gssapi/mechglue/g_userok.c
lib/gssapi/mechglue/g_utils.c
lib/gssapi/mechglue/g_verify.c
lib/gssapi/mechglue/gssd_pname_to_uid.c
lib/gssapi/mechglue/mglueP.h
lib/gssapi/mechglue/oid_ops.c
lib/gssapi/spnego/gssapiP_spnego.h
lib/gssapi/spnego/spnego_mech.c

and the initial implementation of incremental propagation, including the following new or changed files:

include/iprop_hdr.h
kadmin/server/ipropd_svc.c
lib/kdb/iprop.x
lib/kdb/kdb_convert.c
lib/kdb/kdb_log.c
lib/kdb/kdb_log.h
lib/krb5/error_tables/kdb5_err.et
slave/kpropd_rpc.c
slave/kproplog.c

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* configure.ac, Makefile.am: The original versions were derived from the ones in the XML Catalog Manager project, version 2.2.

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* atf-c/ui.c: The format_paragraph and format_text functions were derived from the ones in the Monotone project, revision 3a0982da308228d796df35f98d787c5cff2bb5b6.

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* atf-c++/detail/io.hpp, atf-c++/detail/io.cpp, atf-c++/detail/io_test.cpp: These files were derived from the file_handle, systembuf, pipe and pistream classes and tests found in the Boost.Process library.

Author: Julio Merino <jmmv84@gmail.com>

* admin/check-style.sh,
admin/check-style-common.awk,
admin/check-style-cpp.awk, admin/check-style-shell.awk: These files, except the first one, were first implemented in the Buildtool project. They were later adapted to be part of Boost.Process and, during that process, the shell script was created.

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=====
vim: filetype=text:textwidth=75:expandtab:shiftwidth=2:softtabstop=2

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xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:xi="http://www.w3.org/2001/XInclude"
xmlns:db="http://docbook.org/ns/docbook">

<xsl:template name="isc.copyright.format">
  <xsl:param name="text"/>
  <xsl:value-of select="$isc.copyright.leader"/>
  <xsl:value-of select="normalize-space(substring-before($text, '&#10;'))"/>
  <xsl:text>&#10;</xsl:text>
  <xsl:variable name="rest" select="substring-after($text, '&#10;')"/>
  <xsl:if test="translate($rest, '&#9;&#32;', '')">

    <xsl:call-template name="isc.copyright.format">
      <xsl:with-param name="text" select="$rest"/>
    </xsl:call-template>
  </xsl:if>
</xsl:template>

<xsl:variable name="isc.copyright.text">
  <xsl:text>
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  </xsl:text>
</xsl:variable>

<xsl:variable name="isc.copyright">
  <xsl:call-template name="isc.copyright.format">
    <xsl:with-param name="text">
      <xsl:for-each select="book/info/copyright | refentry/docinfo/copyright">
        <xsl:text>Copyright (C) </xsl:text>
        <xsl:call-template name="copyright.years">
          <xsl:with-param name="years" select="year"/>
        </xsl:call-template>
        <xsl:text> </xsl:text>
        <xsl:value-of select="holder"/>
        <xsl:value-of select="$isc.copyright.breakline"/>
      </xsl:for-each>
    </xsl:with-param>
  </xsl:call-template>

```

```
select="$isc.copyright.text"/>
  </xsl:with-param>
</xsl:call-template>
</xsl:variable>
</xsl:stylesheet>
```

<!--

- Local variables:

- mode: sgml

- End:

-->

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1.354 jackson-jaxrs 2.14.2

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1.356 jackson-dataformat-yaml 2.14.2

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1.360 jackson-databind 2.14.2

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1.362 lettuce-core 5.1.8.RELEASE

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```

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```
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1.367 zlib 1.2.7-21.el7_9

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1.368 keyutils 1.5.8-3.el7

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5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object

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Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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1.371 popt 1.13-16.el7

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1.372 python-iniparse 0.4-9.el7

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A. HISTORY OF THE SOFTWARE

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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| Release from | Derived from | Year | Owner | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 | | 1991-1995 | CWI | yes |
| 1.3 thru 1.5.2 | 1.2 | 1995-1999 | CNRI | yes |
| 1.6 | 1.5.2 | 2000 | CNRI | no |
| 2.0 | 1.6 | 2000 | BeOpen.com | no |
| 1.6.1 | 1.6 | 2001 | CNRI | yes (2) |
| 2.1 | 2.0+1.6.1 | 2001 | PSF | no |
| 2.0.1 | 2.0+1.6.1 | 2001 | PSF | yes |
| 2.1.1 | 2.1+2.0.1 | 2001 | PSF | yes |
| 2.2 | 2.1.1 | 2001 | PSF | yes |
| 2.1.2 | 2.1.1 | 2002 | PSF | yes |
| 2.1.3 | 2.1.2 | | | |
| 2002 | PSF | yes | | |
| 2.2.1 | 2.2 | 2002 | PSF | yes |
| 2.2.2 | 2.2.1 | 2002 | PSF | yes |
| 2.2.3 | 2.2.2 | 2003 | PSF | yes |
| 2.3 | 2.2.2 | 2002-2003 | PSF | yes |
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1.373 libidn 1.28-4.el7

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1.374 dbus-python 1.1.1-9.el7

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1.375 yum-metadata-parser 1.1.4-10.el7

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1.376 pyliblzma 0.5.3-11.el7

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1.377 json-c 0.11-4.el7_0

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1.378 lua 5.1.4-15.el7

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1.379 ustr 1.0.4-16.el7

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- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
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<one line to give the program's name and a brief idea of what it does.>

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If the program is interactive, make it output a short notice like this
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```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute
it
under certain conditions; type `show c' for details.
```

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mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

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1.382 gdbm 1.10-8.el7

1.382.1 Available under license :

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Version 3, 29 June 2007

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A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other

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The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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1.383 pygpgme 0.3-9.el7

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1.384 qrencode 3.4.1-3.el7

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Version 2.1, February 1999

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file

that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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1.386 libassuan 2.1.0-3.el7

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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```
<one line to give the program's name and a brief idea of what it does.>  
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```

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```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
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under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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1.388 gawk 4.0.2-4.el7_3.1

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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must

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These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition,

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year>  
<name of author>
```

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In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the

Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

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- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified

Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may

distribute the object code for the work under the terms of Section 6.

Any executables

containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable

source code for the Library including whatever

changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user

installs one, as long as the modified version is

interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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That's all there is to it!

1.390 texinfo 5.1-5.e17

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Version 3, 29 June 2007

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Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

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1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of

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d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

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c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

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1.393 python-kitchen 1.1.1-5.el7

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Any executables

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1.394 gmp 6.0.0-15.el7

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1.395 pcre 8.32-17.el7

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1.396 pinentry 0.8.1-17.el7

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1.399 libsemanage-common 2.5-14.el7

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1.402 pycurl 7.19.0-19.el7

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1.404 libgpg-error 1.12-3.el7

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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1.405 findutils 4.5.11-6.el7

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1.409 openssl 1.0.2k-26.el7_9

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1.410 nss 3.79.0-5.el7_9

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prime.txt

prng.pod

This file contains a list of people who've made non-trivial
contribution to the Google C++ Testing Framework project. People
who commit code to the project are encouraged to add their names
here. Please keep the list sorted by first names.

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Zhanyong Wan <wan@google.com>

1.411 resilience4j-circuitbreaker 0.13.1

1.411.1 Available under license :

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```
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/CircuitBreakerMetrics.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
```

```
jar/io/github/resilience4j/circuitbreaker/internal/RingBitSet.java
*
/opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/BitSetMod.java
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jar/io/github/resilience4j/circuitbreaker/internal/DisabledState.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/OpenState.java
*
/opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerOnCallNotPermittedEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/InMemoryCircuitBreakerRegistry.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/ForcedOpenState.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/AbstractCircuitBreakerEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/Utils/CircuitBreakerUtils.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/CircuitBreakerStateMachine.java
*
/opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerOnIgnoredErrorEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/ClosedState.java
```

```
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/HalfOpenState.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerOnErrorEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/internal/CircuitBreakerState.java
*
/opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/CircuitBreakerRegistry.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/CircuitBreakerConfig.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerOnSuccessEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerOnResetEvent.java
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/event/CircuitBreakerOnStateTransitionEvent.java
*
/opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/CircuitBreakerOpenException.java
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```
* /opt/cola/permits/1610149726_1679504940.9927049/0/resilience4j-circuitbreaker-0-13-1-sources-1-
jar/io/github/resilience4j/circuitbreaker/CircuitBreaker.java
```

1.412 vavr 0.9.2

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```
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```
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function3.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/LinkHashMapMultimap.java
*
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction6.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/AbstractMultimap.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/BitMappedTrie.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/control/Validation.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/control/Option.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction1.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/CharSeq.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedRunnable.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/SortedMultimap.java
*
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/concurrent/GwtIncompatible.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/TreeMultimap.java
```

```

* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/LinkedHashSet.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/SortedSet.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/Collections.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Lazy.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/HashMultimap.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple0.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/ArrayType.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/Comparators.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function8.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/BitSet.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function7.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple7.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/API.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/control/GwtIncompatible.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/HashSet.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function4.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Ordered.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple6.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/LinearSeq.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Predicates.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function0.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction8.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Lambda.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Array.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple5.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/control/Either.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple1.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/concurrent/GuardedBy.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Tree.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple8.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/concurrent/Promise.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Maps.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Stream.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple2.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/MatchError.java
*

```



```

/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/AbstractIterator.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function2.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/RedBlackTree.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/JavaConverters.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Seq.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/TreeMap.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction7.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction4.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function1.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/PartialFunction.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/GwtIncompatible.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Vector.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function5.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Iterator.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Set.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/Multimaps.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/PriorityQueue.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/concurrent/FutureImpl.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction5.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Foldable.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Multimap.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/Traversable.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedConsumer.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/IndexedSeq.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/control/Try.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/$.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/NotImplementedError.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/LinkedHashMap.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Value.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction2.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple4.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Map.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/SortedMap.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction3.java

```

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* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Tuple3.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/HashMapMappedTrie.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedPredicate.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/Queue.java
*
/opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/concurrent/Future.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/CheckedFunction0.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/TreeSet.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/AbstractQueue.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/List.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/collection/HashMap.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-
jar/io/vavr/collection/GwtIncompatible.java
* /opt/cola/permits/1610149757_1679504937.1964195/0/vavr-0-9-2-sources-1-jar/io/vavr/Function6.java

```

1.413 resilience4j-timelimiter 0.13.1

1.413.1 Available under license :

Apache-2.0

1.414 vavr-match 0.9.2

1.414.1 Available under license :

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* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
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* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/generator/ImportManager.java
*
/opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/model/MethodModel.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/model/ParameterModel.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/UnapplyChecker.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/annotation/Unapply.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/model/ClassModel.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/model/TypeParameterModel.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/PatternsProcessor.java
* /opt/cola/permits/1610149123_1680160062.647855/0/vavr-match-0-9-2-sources-1-
jar/io/vavr/match/generator/Generator.java
```

1.415 resilience4j-core 0.13.1

1.415.1 Available under license :

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1.416 swagger-models 2.0.7

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- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/parameters/CookieParameter.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/parameters/QueryParameter.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/servers/Server.java
- *
- /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/security/SecurityScheme.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/parameters/HeaderParameter.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/NumberSchema.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/Content.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/StringSchema.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/callbacks/Callback.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/PathItem.java
- *
- /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/Paths.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/ComposedSchema.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/PasswordSchema.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/security/SecurityRequirement.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/security/Scopes.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/servers/ServerVariable.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/responses/ApiResponse.java
- *
- /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/ByteArraySchema.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/headers/Header.java
- * /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/DateTimeSchema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/security/OAuthFlow.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/parameters/Parameter.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/info/Contact.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/links/Link.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/responses/ApiResponse.java

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/opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/BinarySchema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/links/LinkParameter.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/FileSchema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/MediaType.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/servers/ServerVariables.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/parameters/PathParameter.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/XML.java

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/opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/security/OAuthFlows.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/ObjectSchema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/parameters/RequestBody.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/EmailSchema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/tags/Tag.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/ExternalDocumentation.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/examples/Example.java

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/opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/Schema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/media/ArraySchema.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-jar/io/swagger/v3/oas/models/info/License.java

* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-

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jar/io/swagger/v3/oas/models/media/BooleanSchema.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/OpenAPI.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/media/UUIDSchema.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/media/MapSchema.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/media/Encoding.java
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/opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/media/EncodingProperty.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/info/Info.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/Components.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/media/IntegerSchema.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/media/DateSchema.java
* /opt/cola/permits/1618800057_1685520288.5325468/0/swagger-models-2-0-7-sources-2-
jar/io/swagger/v3/oas/models/Operation.java
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1.417 swagger-integration 2.0.7

1.417.1 Available under license :

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1.418 nss-tools 3.79.0-5.el7_9

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This file contains a list of people who've made non-trivial
contribution to the Google C++ Testing Framework project. People
who commit code to the project are encouraged to add their names
here. Please keep the list sorted by first names.

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1.419 tzdata 2023c-1.e17

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1.420 kafka-streams-avro-serde 6.2.1

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* /opt/cola/permits/1638896082_1681459442.486575/0/kafka-streams-avro-serde-6-2-1-jar/META-INF/maven/io.confluent/kafka-streams-avro-serde/pom.xml

1.421 kafka-schema-registry-client 6.2.1

1.421.1 Available under license :

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```
<project xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://maven.apache.org/POM/4.0.0"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
```

```
<modelVersion>4.0.0</modelVersion>
```

```
<parent>
  <groupId>io.confluent</groupId>
  <artifactId>kafka-schema-registry-parent</artifactId>
  <version>6.2.1</version>
</parent>
```

```
<licenses>
  <license>
    <name>Apache License 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.html</url>
    <distribution>repo</distribution>
  </license>
</licenses>
```

```
<artifactId>kafka-schema-registry-client</artifactId>
<packaging>jar</packaging>
<name>kafka-schema-registry-client</name>
```

```
<dependencies>
  <dependency>
    <groupId>org.apache.kafka</groupId>
    <artifactId>kafka-clients</artifactId>
  </dependency>
  <dependency>
    <groupId>org.apache.avro</groupId>
    <artifactId>avro</artifactId>
  </dependency>
  <dependency>
    <groupId>org.apache.commons</groupId>
    <artifactId>commons-compress</artifactId>
```

```

</dependency>
<dependency>
  <groupId>com.fasterxml.jackson.core</groupId>
  <artifactId>jackson-databind</artifactId>
</dependency>
<dependency>
  <groupId>jakarta.ws.rs</groupId>
  <artifactId>jakarta.ws.rs-api</artifactId>
</dependency>
<dependency>
  <groupId>org.glassfish.jersey.core</groupId>
  <artifactId>jersey-common</artifactId>
  <version>${jersey.version}</version>
</dependency>
<dependency>
  <groupId>org.easymock</groupId>
  <artifactId>easymock</artifactId>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>org.powermock</groupId>
  <artifactId>powermock-module-junit4</artifactId>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>org.powermock</groupId>
  <artifactId>powermock-api-easymock</artifactId>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>junit</groupId>
  <artifactId>junit</artifactId>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>io.swagger</groupId>
  <artifactId>swagger-annotations</artifactId>
</dependency>
<dependency>
  <groupId>io.swagger</groupId>
  <artifactId>swagger-core</artifactId>
  <version>1.6.2</version>
  <exclusions>
    <exclusion>
      <groupId>javax.validation</groupId>
      <artifactId>validation-api</artifactId>
    </exclusion>
  </exclusions>

```

```

    <groupId>com.google.guava</groupId>
    <artifactId>guava</artifactId>
  </exclusion>
</exclusions>
</dependency>
<dependency>
  <groupId>com.google.guava</groupId>
  <artifactId>guava</artifactId>
  <version>${ guava.version }</version>
</dependency>
</dependencies>
</project>

```

Found in path(s):

```

* /opt/cola/permits/1638896121_1681819594.9636126/0/kafka-schema-registry-client-6-2-1-jar/META-INF/maven/io.confluent/kafka-schema-registry-client/pom.xml

```

1.422 kafka-schema-serializer 6.2.1

1.422.1 Available under license :

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```

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  xmlns="http://maven.apache.org/POM/4.0.0"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">

  <modelVersion>4.0.0</modelVersion>

  <parent>
    <groupId>io.confluent</groupId>
    <artifactId>kafka-schema-registry-parent</artifactId>
    <version>6.2.1</version>
  </parent>

  <licenses>
    <license>
      <name>Apache License 2.0</name>
      <url>http://www.apache.org/licenses/LICENSE-2.0.html</url>
      <distribution>repo</distribution>
    </license>
  </licenses>

  <artifactId>kafka-schema-serializer</artifactId>
  <packaging>jar</packaging>
  <name>kafka-schema-serializer</name>

```

```

<dependencies>
  <dependency>
    <groupId>org.apache.kafka</groupId>
    <artifactId>kafka_${kafka.scala.version}</artifactId>
    <scope>provided</scope>
  </dependency>
  <dependency>
    <groupId>io.confluent</groupId>
    <artifactId>kafka-schema-registry-client</artifactId>
    <version>${io.confluent.schema-registry.version}</version>
  </dependency>
  <dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <scope>test</scope>
  </dependency>
</dependencies>
</project>

```

Found in path(s):

```

* /opt/cola/permits/1638896081_1681459386.3648345/0/kafka-schema-serializer-6-2-1-jar/META-INF/maven/io.confluent/kafka-schema-serializer/pom.xml

```

1.423 jackson-module-guice 2.14.2

1.423.1 Available under license :

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1.424 opentelemetry-context 1.12.0

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1.426 opentelemetry-semconv 1.12.0

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1.427 opentelemetry-api 1.12.0

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1.428 kafka-avro-serializer 6.2.1

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<project xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://maven.apache.org/POM/4.0.0"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">

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```

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</parent>

<licenses>
  <license>
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    <url>http://www.apache.org/licenses/LICENSE-2.0.html</url>
    <distribution>repo</distribution>
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  <dependency>
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  <artifactId>confluent-log4j</artifactId>
  <scope>test</scope>
</dependency>
</dependencies>

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          <goals>
            <goal>schema</goal>
          </goals>
          <configuration>
            <testSourceDirectory>${project.basedir}/src/test/avro</testSourceDirectory>

          </configuration>
        </execution>
      </executions>
    </plugin>
  </plugins>
</build>
</project>

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Found in path(s):

* /opt/cola/permits/1638896301_1681459399.8776171/0/kafka-avro-serializer-6-2-1-jar/META-INF/maven/io.confluent/kafka-avro-serializer/pom.xml

1.429 snake-yaml 2.0

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```

Found in path(s):

```
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-
jar/org/yaml/snakeyaml/external/com/google/gdata/util/common/base/UnicodeEscaper.java
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-
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jar/org/yaml/snakeyaml/external/com/google/gdata/util/common/base/Escaper.java
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```
/**
```

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```

Found in path(s):

```
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-
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* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-
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jar/org/yaml/snakeyaml/error/MarkedYAMLException.java
*
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* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/tokens/DocumentStartToken.java
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/representer/BaseRepresenter.java
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/comments/CommentEventsCollector.java
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* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/events/SequenceStartEvent.java
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* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/nodes/CollectionNode.java
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/scanner/SimpleKey.java

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* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/org/yaml/snakeyaml/constructor/Constructor.java
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jar/org/yaml/snakeyaml/tokens/BlockSequenceStartToken.java
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/**
 * A Base64 encoder/decoder.
 *
 * <p>
 * This class is used to encode and decode data in Base64 format as described in RFC 1521.
 *
 * <p>
 * Project home page: <a href="http://www.source-code.biz/base64coder/java/">www.
 * source-code.biz/base64coder/java</a><br>
 * Author: Christian d'Heureuse, Inventec Informatik AG, Zurich, Switzerland<br>
 * Multi-licensed: EPL / LGPL / GPL / AL / BSD.
 */
```

Found in path(s):

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jar/org/yaml/snakeyaml/external/biz/base64Coder/Base64Coder.java
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```
<name>Apache License, Version 2.0</name>
<url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
```

Found in path(s):

```
* /opt/cola/permits/1641306810_1681942578.2485716/0/snakeyaml-2-0-sources-3-jar/META-
INF/maven/org.yaml/snakeyaml/pom.xml
```

1.430 kafka-protobuf-provider 5.5.5

1.430.1 Available under license :

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
```

```
<modelVersion>4.0.0</modelVersion>
```

```
<parent>
  <groupId>io.confluent</groupId>
  <artifactId>kafka-schema-registry-parent</artifactId>
  <version>5.5.5</version>
</parent>
```

```
<licenses>
  <license>
    <name>Confluent Community License</name>
    <url>http://www.confluent.io/confluent-community-license</url>
    <distribution>repo</distribution>
  </license>
  <license>
    <name>Apache License 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.html</url>
    <distribution>repo</distribution>
  </license>
</licenses>
```

```
<artifactId>kafka-protobuf-provider</artifactId>
<packaging>jar</packaging>
<name>kafka-protobuf-provider</name>
```

```
<dependencies>
  <dependency>
    <groupId>com.squareup.wire</groupId>
    <artifactId>wire-schema</artifactId>
  </dependency>
```

```

<dependency>
  <groupId>org.jetbrains.kotlin</groupId>
  <artifactId>kotlin-stdlib</artifactId>
</dependency>
<dependency>
  <groupId>com.google.protobuf</groupId>
  <artifactId>protobuf-java</artifactId>
</dependency>
<dependency>
  <groupId>com.google.protobuf</groupId>
  <artifactId>protobuf-java-util</artifactId>
</dependency>
<dependency>
  <groupId>io.confluent</groupId>
  <artifactId>kafka-schema-registry-client</artifactId>
</dependency>
<dependency>
  <groupId>org.mockito</groupId>
  <artifactId>mockito-core</artifactId>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>junit</groupId>
  <artifactId>junit</artifactId>
  <scope>test</scope>
</dependency>
</dependencies>

<build>
  <plugins>
    <plugin>
      <groupId>com.github.os72</groupId>
      <artifactId>protoc-jar-maven-plugin</artifactId>
    </plugin>
  </plugins>
</build>
</project>

```

Found in path(s):

* /opt/cola/permits/1643953215_1681954623.4885044/0/kafka-protobuf-provider-5-5-5-jar/META-INF/maven/io.confluent/kafka-protobuf-provider/pom.xml

1.431 kafka-protobuf-serializer 5.5.5

1.431.1 Available under license :

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">

  <modelVersion>4.0.0</modelVersion>

  <parent>
    <groupId>io.confluent</groupId>
    <artifactId>kafka-schema-registry-parent</artifactId>
    <version>5.5.5</version>
  </parent>

  <licenses>
    <license>
      <name>Confluent Community License</name>
      <url>http://www.confluent.io/confluent-community-license</url>
      <distribution>repo</distribution>
    </license>
    <license>
      <name>Apache License 2.0</name>
      <url>http://www.apache.org/licenses/LICENSE-2.0.html</url>
      <distribution>repo</distribution>
    </license>
  </licenses>

  <artifactId>kafka-protobuf-serializer</artifactId>
  <packaging>jar</packaging>
  <name>kafka-protobuf-serializer</name>

  <dependencies>
    <dependency>
      <groupId>org.apache.kafka</groupId>
      <artifactId>kafka_${kafka.scala.version}</artifactId>
      <scope>provided</scope>
    </dependency>
    <dependency>
      <groupId>io.confluent</groupId>
      <artifactId>kafka-protobuf-provider</artifactId>
    </dependency>
    <dependency>
      <groupId>com.google.protobuf</groupId>
      <artifactId>protobuf-java-util</artifactId>
    </dependency>
    <dependency>
      <groupId>io.confluent</groupId>
      <artifactId>kafka-schema-serializer</artifactId>
```

```

</dependency>
<dependency>
  <groupId>io.confluent</groupId>
  <artifactId>kafka-schema-registry-client</artifactId>
</dependency>
<dependency>
  <groupId>io.confluent</groupId>
  <artifactId>kafka-schema-registry</artifactId>

<scope>test</scope>
</dependency>
<dependency>
  <groupId>io.confluent</groupId>
  <artifactId>kafka-schema-registry</artifactId>
  <type>test-jar</type>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>org.apache.kafka</groupId>
  <artifactId>connect-api</artifactId>
  <scope>provided</scope>
</dependency>
<dependency>
  <groupId>org.apache.kafka</groupId>
  <artifactId>kafka-clients</artifactId>
  <classifier>test</classifier>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>org.apache.kafka</groupId>
  <artifactId>kafka_${kafka.scala.version}</artifactId>
  <classifier>test</classifier>
  <scope>test</scope>
</dependency>
<dependency>
  <groupId>org.mockito</groupId>
  <artifactId>mockito-core</artifactId>

  <scope>test</scope>
</dependency>
<dependency>
  <groupId>junit</groupId>
  <artifactId>junit</artifactId>
  <scope>test</scope>
</dependency>
</dependencies>

<build>

```

```

<plugins>
  <plugin>
    <groupId>com.github.os72</groupId>
    <artifactId>protoc-jar-maven-plugin</artifactId>
  </plugin>
  <plugin>
    <groupId>org.apache.maven.plugins</groupId>
    <artifactId>maven-jar-plugin</artifactId>
    <version>2.6</version>
    <executions>
      <execution>
        <goals>
          <goal>test-jar</goal>
        </goals>
        <phase>test-compile</phase>
      </execution>
    </executions>
  </plugin>
</plugins>
</build>
</project>

```

Found in path(s):

* /opt/cola/permits/1643953259_1681957005.4570937/0/kafka-protobuf-serializer-5-5-5-jar/META-INF/maven/io.confluent/kafka-protobuf-serializer/pom.xml

1.432 zstd 1.4.9

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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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1.433 openjdk-jre 11.0.19u7

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The implementations of GSSAPI mechglue in GSSAPI-SPNEGO in "src/lib/gssapi", including the following files:

lib/gssapi/generic/gssapi_err_generic.et
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lib/gssapi/mechglue/g_acquire_cred.c
lib/gssapi/mechglue/g_canon_name.c
lib/gssapi/mechglue/g_compare_name.c
lib/gssapi/mechglue/g_context_time.c

lib/gssapi/mechglue/g_delete_sec_context.c
lib/gssapi/mechglue/g_dsp_name.c
lib/gssapi/mechglue/g_dsp_status.c
lib/gssapi/mechglue/g_dup_name.c
lib/gssapi/mechglue/g_exp_sec_context.c
lib/gssapi/mechglue/g_export_name.c
lib/gssapi/mechglue/g_glue.c
lib/gssapi/mechglue/g_imp_name.c
lib/gssapi/mechglue/g_imp_sec_context.c
lib/gssapi/mechglue/g_init_sec_context.c
lib/gssapi/mechglue/g_initialize.c
lib/gssapi/mechglue/g_inquire_context.c
lib/gssapi/mechglue/g_inquire_cred.c
lib/gssapi/mechglue/g_inquire_names.c
lib/gssapi/mechglue/g_process_context.c
lib/gssapi/mechglue/g_rel_buffer.c
lib/gssapi/mechglue/g_rel_cred.c
lib/gssapi/mechglue/g_rel_name.c
lib/gssapi/mechglue/g_rel_oid_set.c
lib/gssapi/mechglue/g_seal.c
lib/gssapi/mechglue/g_sign.c
lib/gssapi/mechglue/g_store_cred.c
lib/gssapi/mechglue/g_unseal.c
lib/gssapi/mechglue/g_userok.c
lib/gssapi/mechglue/g_utils.c
lib/gssapi/mechglue/g_verify.c
lib/gssapi/mechglue/gssd_pname_to_uid.c
lib/gssapi/mechglue/mglueP.h
lib/gssapi/mechglue/oid_ops.c
lib/gssapi/spnego/gssapiP_spnego.h
lib/gssapi/spnego/spnego_mech.c

and the initial implementation of incremental propagation, including the following new or changed files:

include/iprop_hdr.h
kadmin/server/ipropd_svc.c
lib/kdb/iprop.x
lib/kdb/kdb_convert.c
lib/kdb/kdb_log.c
lib/kdb/kdb_log.h
lib/krb5/error_tables/kdb5_err.et
slave/kpropd_rpc.c
slave/kproplog.c

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This package was put together by Klee Dienes <klee@debian.org> from sources from `ftp.python.org/pub/python`, based on the Debianization by the previous maintainers Bernd S. Brentrup <bsb@uni-muenster.de> and Bruce Perens.

Current maintainer is Matthias Klose <doko@debian.org> until the final 2.3 version is released.

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A. HISTORY OF THE SOFTWARE

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release | Derived from | Year | Owner | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 | 1991-1995 | CWI | | yes |
| 1.3 thru 1.5.2 | 1.2 | 1995-1999 | CNRI | yes |
| 1.6 | 1.5.2 | 2000 | CNRI | no |
| 2.0 | 1.6 | 2000 | BeOpen.com | no |
| 1.6.1 | 1.6 | 2001 | CNRI | yes (2) |
| 2.1 | 2.0+1.6.1 | 2001 | PSF | no |
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| 2.1.1 | 2.1+2.0.1 | 2001 | PSF | yes |
| 2.2 | 2.1.1 | 2001 | PSF | yes |
| 2.1.2 | 2.1.1 | 2002 | PSF | yes |
| 2.1.3 | 2.1.2 | 2002 | PSF | yes |
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| 2.2.2 | 2.2.1 | 2002 | PSF | yes |
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| 3.0 | 2.6 | 2008 | PSF | yes |
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Upstream-Contact: Thorsten Kukuk <kukuk@thkukuk.de>

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configure.ac

config.h.in

libnsl.pc.in

Makefile.am

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src/Makefile.am

src/do_ypcall.c

src/internal.h

src/libnsl.map

src/nisplus/nis_error.c

src/taddr2host.c

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src/taddr2port.c
src/yp_first.c
src/yp_get_default_domain.c
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src/ypbinderr_string.c
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Files: src/libc-lock.h

src/nisplus/nis_add.c
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src/nisplus/nis_call.c
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src/nisplus/nis_remove.c
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src/rpcsvc/ypupd.h
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m4/iconv.m4

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m4/lib-link.m4

m4/lib-prefix.m4

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m4/ltoptions.m4

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m4/lt~obsolete.m4

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po/Makefile.in.in

po/Makevars

po/POTFILES.in

po/Rules-quot

po/boldquot.sed

po/en@boldquot.header

po/en@quot.header

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po/remove-potcdate.sin

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Upstream-Name: perl
Source: <http://www.perl.com/CPAN/src/5.0/>
Comment:
This package was initially debianized by Brendan O'Dea <bod@debian.org>
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Upstream Authors:

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dist/Env/*

cpan/ExtUtils-Manifest/*

dist/I18N-Collate/*

dist/Safe/*

ext/Fcntl/*

ext/FileCache/*

ext/GDBM_File/*

ext/IPC-Open3/*

ext/NDBM_File/*

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cpan/Locale-Maketext-Simple/t/po_with_i_default/i_default.po

cpan/Locale-Maketext-Simple/t/po_with_i_default/fr.po

cpan/Locale-Maketext-Simple/t/po_with_i_default/en.po

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cpan/podlators/t/data/basic.man

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cpan/podlators/t/lib/Test/RRA/Config.pm

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cpan/podlators/t/lib/Test/RRA/ModuleVersion.pm

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cpan/Win32API-File/*

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but, as discussed in

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fuzz/gnutls_psk_server_fuzzer.c

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include/bsd/err.h

include/bsd/stdlib.h

include/bsd/sys/param.h

include/bsd/unistd.h

src/bsd_getopt.c

src/err.c

src/fgetln.c

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man/bitstring.3bsd

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man/fgetwln.3bsd

man/fpurge.3bsd

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man/strmode.3bsd

man/strnstr.3bsd

man/strtoi.3bsd

man/strtou.3bsd

man/unvis.3bsd

man/vis.3bsd

man/wcsncpy.3bsd

src/getbsize.c

src/heapsort.c

src/merge.c

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```
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ASM Bytecode Manipulation Framework v6.0

ASM License

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Format: <http://svn.debian.org/wsvn/dep/web/deps/dep5.mdwn?op=file&rev=202>

Upstream-Name: libunistring

Upstream-Contact: Bruno Haible <bruno@clisp.org>

Source: <http://ftp.gnu.org/gnu/libunistring/>

Files: *

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Upstream-Name: bzip2

Source: <http://www.bzip.org/>

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Local-Date: Fri, 06 Jun 2003 13:18:52 -0400

Date: Fri, 6 Jun 2003 10:18:52 -0700

From: Juan Gomez <juang@us.ibm.com>

To: Stephen Frost <sfrost@debian.org>

X-Mailer: Lotus Notes Release 5.0.2a (Intl) 23 November 1999

Subject: Re: Juan C. Gomez license in OpenLDAP Source

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Regards, Juan

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Local-Date: Thu, 05 Jun 2003 16:53:32 -0400

Date: Thu, 5 Jun 2003 16:53:32 -0400 (EDT)

From: Mark Adamson <adamson@andrew.cmu.edu>

To: Stephen Frost <sfrost@debian.org>

Subject: Re: Mark Adamson license in OpenLDAP source

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* To: Stephen Frost <sfrost@snowman.net>
* Subject: Re: OpenLDAP Licenseing issues
* From: "Kurt D. Zeilenga" <Kurt@OpenLDAP.org>
* Date: Wed, 28 May 2003 10:55:44 -0700
* Cc: Steve Langasek <vorlon@netexpress.net>,debian-legal@lists.debian.org, openldap-devel@OpenLDAP.org
* In-reply-to: <20030528162613.GB8524@ns.snowman.net>
* Message-id: <5.2.0.9.0.20030528094229.02924780@127.0.0.1>
* Old-return-path: <Kurt@OpenLDAP.org>

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This package was debianized by
Christian Schwarz <schwarz@monet.m.isar.de> on Mon, 18 Nov 1996 00:59:57 +0100
J. Ramos Goncalves <ramos@debian.org> on Thu, 13 Feb 1997 23:15:18 +0000
Nicols Lichtmaier <nick@debian.org> on Sat, 18 Oct 1997 21:23:12 -0300
Nol Kthe <noel@debian.org> on Mon, 18 Feb 2002 09:53:00 +0100

It was downloaded from <ftp://ftp.gnu.org/gnu/wget/>
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Upstream Author: Giuseppe Scrivano <gscrivano@gnu.org>

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From strings/apr_fnmatch.c, include/apr_fnmatch.h,
misc/unix/getopt.c,
file_io/unix/mktemp.c, strings/apr_strings.c:

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From network_io/unix/inet_ntop.c, network_io/unix/inet_pton.c:

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From dso/aix/dso.c:

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From strings/apr_strnatcmp.c, include/apr_strings.h:

strnatcmp.c -- Perform 'natural order' comparisons of strings in C.

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It was downloaded from <ftp://ftp.gnu.org/gnu/findutils>

Debian maintainer history: The original package was put together by Ian Murdock <imurdock@debian.org>, afterwards Kevin Dalley <kevind@rahul.net> took over. 2003-07 Andreas Metzler <ametzler@debian.org> followed.

Upstream Authors:

- * GNU find was written by Eric Decker <cire@cisco.com>,
with enhancements by David MacKenzie <djm@gnu.org>,
Jay Plett <jay@silence.princeton.nj.us>,
and Tim Wood <axolotl!tim@toad.com>.
- The idea for `-print0` and `xargs -0` came from
Dan Bernstein <brnstd@kramden.acf.nyu.edu>.
- Improvements have been made by James Youngman <jay@gnu.org>.

* GNU xargs

was originally written by Mike Rendell, with enhancements by David MacKenzie. Modifications by James Youngman Dmitry V. Levin

* GNU locate and its associated utilities were originally

written by James Woods, with enhancements by David MacKenzie, James Youngman and Bas van Gompel.

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It has been packaged by Marco d'Itri <md@linux.it>.

Original sources were obtained from:

<https://github.com/besser82/libxcrypt>

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called

ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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| 0.9.0 thru 1.2 | | 1991-1995 | CWI | yes |
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| 2.0 | 1.6 | 2000 | BeOpen.com | no |
| 1.6.1 | 1.6 | 2001 | CNRI | yes (2) |
| 2.1 | 2.0+1.6.1 | 2001 | PSF | no |
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Mersenne Twister

The `_random` module includes code based on a download from <http://www.math.keio.ac.jp/~matumoto/MT2002/emt19937ar.html>'. The following are the verbatim comments from the original code:

A C-program for MT19937, with initialization improved 2002/1/26.
Coded by Takuji Nishimura and Makoto Matsumoto.

Before using, initialize the state by using `init_genrand(seed)`
or `init_by_array(init_key, key_length)`.

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Any feedback is very welcome.

<http://www.math.keio.ac.jp/matumoto/emt.html>
email: matumoto@math.keio.ac.jp

Sockets

The `socket' module uses the functions, `getaddrinfo', and `getnameinfo', which are coded in separate source files from the WIDE Project, `http://www.wide.ad.jp/about/index.html'.

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Modified by Jack Jansen, CWI, July 1995:

- Use binascii module to do the actual line-by-line conversion between ascii and binary. This results in a 1000-fold speedup. The C version is still 5 times faster, though.
- Arguments more compliant with python standard

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/* Beep added by Mark Hammond */

/* Win9X Beep and platform identification added by Uncle Timmy */

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Source: <http://www.openssh.com/portable.html>

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.
@version

3.0 (December 2000)

.
Optimised ANSI C code for the Rijndael cipher (now AES)

.
@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>

@author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>

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This is the Debian GNU/Linux prepackaged version of the GNU compiler collection, containing Ada, C, C++, D, Fortran 95, Go, Objective-C, Objective-C++, and Modula-2 compilers, documentation, and support libraries. In addition, Debian provides the gm2 compiler, either in the same source package, or built from a separate same source package.

Packaging is done by the Debian GCC Maintainers
<debian-gcc@lists.debian.org>, with sources obtained from:

ftp://gcc.gnu.org/pub/gcc/releases/ (for full releases)
svn://gcc.gnu.org/svn/gcc/ (for prereleases)
ftp://sourceware.org/pub/newlib/ (for newlib)
git://git.savannah.gnu.org/gm2.git (for Modula-2)

The current gcc-9 source package is taken from the SVN gcc-9-branch.

Changes: See changelog.Debian.gz

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

| Language | Compiler package | Library package | Documentation |
|----------|------------------|-----------------|---------------|
|----------|------------------|-----------------|---------------|

| | | | |
|------------|------------|--------------|------------------|
| Ada | gnat-9 | libgnat-9 | gnat-9-doc |
| BRIG | gccbrig-9 | libhsail-rt0 | |
| C | gcc-9 | gcc-9-doc | |
| C++ | g++-9 | libstdc++6 | libstdc++6-9-doc |
| D | gdc-9 | | |
| Fortran 95 | gfortran-9 | libgfortran3 | gfortran-9-doc |
| Go | gccgo-9 | libgo0 | |

Objective C gobjc-9 libobjc2
Objective C++ gobjc++-9
Modula-2 gm2-9 libgm2

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

| Language | Sources | Development | Debugging | Position-Independent |
|----------|-----------------|------------------|------------------|----------------------|
| C++ | | libstdc++6-9-dbg | libstdc++6-9-pic | |
| D | libphobos-9-dev | | | |

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

GCC intrinsics (platform-dependent)

| | |
|------------------|------------------------------------|
| gcc-9-base | Base files common to all compilers |
| gcc-9-soft-float | Software floating point (ARM only) |
| gcc-9-source | The sources with patches |

Ada:

libgnatvsn-dev, libgnatvsn9 GNAT version library

C:

| | |
|----------------------|---------------------------------------|
| cpp-9, cpp-9-doc | GNU C Preprocessor |
| libssp0-dev, libssp0 | GCC stack smashing protection library |
| libquadmath0 | Math routines for the __float128 type |
| fixincludes | Fix non-ANSI header files |

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library
libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
- libobjc
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- Various config files in gcc/config/ used in runtime libraries.
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libquadmath/math:

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ldexpq.c:

- * Conversion to long double by Ulrich Drepper,
- * Cygnus Support, drepper@cygnus.com.

cosq_kernel.c, expq.c, sincos_table.c, sincosq.c, sincosq_kernel.c, sinq_kernel.c, truncq.c:

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D:

gdc-9 GNU D Compiler
libphobos-9-dev D standard runtime library

The D source package is made up of the following components.

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- d/*

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The DMD Compiler implementation of the D programming language:

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The Zlib data compression library:

- `d/phobos/etc/c/zlib/*`

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The Phobos standard runtime library:

- `d/phobos/*`

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GNUTLS Nikolaos Mavrogiannopoulos 2003-11-22
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In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations, which became Zope Corporation. In 2001, the Python Software Foundation (PSF, see <https://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation was a sponsoring member of the PSF.

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| 2.0 | 1.6 | 2000 | BeOpen.com | no |
| 1.6.1 | 1.6 | 2001 | CNRI | yes (2) |
| 2.1 | 2.0+1.6.1 | 2001 | PSF | no |
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src/auth_none.c

src/auth_unix.c

src/authdes_prot.c

src/authunix_prot.c

src/bindresvport.c

src/clnt_bcast.c

src/clnt_perror.c

src/clnt_raw.c

src/clnt_simple.c

src/clnt_vc.c

src/debug.c

src/debug.h

src/des_crypt.c

src/getnetconfig.c

src/getnetpath.c

src/getrpcent.c

src/getrpcport.c

src/key_call.c

src/key_prot_xdr.c

src/pmap_clnt.c

src/pmap_getmaps.c

src/pmap_getport.c

src/pmap_prot.c

src/pmap_prot2.c

src/pmap_rmt.c

src/rpc_callmsg.c

src/rpc_com.h

src/rpc_commdata.c

src/rpc_dtablesize.c

src/rpc_generic.c

src/rpc_prot.c

src/rpc_soc.c

src/rpcb_prot.c

src/rpcb_st_xdr.c
src/rtime.c
src/svc_auth.c
src/svc_auth_des.c
src/svc_auth_unix.c
src/svc_dg.c
src/svc_generic.c
src/svc_raw.c
src/svc_simple.c
src/svc_vc.c
src/xdr_array.c
src/xdr_float.c
src/xdr_mem.c
src/xdr_rec.c
src/xdr_reference.c
src/xdr_sizeof.c
src/xdr_stdio.c
tirpc/rpc/auth_des.h
tirpc/rpc/auth_unix.h
tirpc/rpc/des_crypt.h
tirpc/rpc/pmap_clnt.h
tirpc/rpc/pmap_prot.h
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tirpc/rpc/raw.h
tirpc/rpc/rpc_com.h

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man/rpc_gss_get_versions.3t
man/rpc_gss_getcred.3t
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src/authgss_prot.c
src/svc_auth_gss.c
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THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel

Email local part: ph10

Email domain:

cam.ac.uk

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This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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```
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```

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Files: imap-send.c

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2004, Theodore Y. Ts'o <tytso@mit.edu>

2006, Mike McCormack

Name: git-imap-send - drops patches into an imap Drafts folder

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Source: <https://github.com/Cyan4973/lz4>

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Upstream-Contact: sysvinit-devel@nongnu.org

Source: <https://download.savannah.gnu.org/releases/sysvinit/>

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Upstream-Name: XZ Utils

Upstream-Contact:

Lasse Collin <lasse.collin@tukaani.org>

<https://tukaani.org/xz/lists.html>

Source:

<https://tukaani.org/xz>

<https://git.tukaani.org/xz.git>

Comment:

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To: Jonathan Nieder <jrnieder@gmail.com>

Subject: Re: XZ utils for Debian

Date: Sun, 19 Jul 2009 13:28:23 +0300

Message-Id: <200907191328.23816.lasse.collin@tukaani.org>

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[...]

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Files: src/liblzma/check/crc32_table_?e.h
src/liblzma/check/crc64_table_?e.h
src/liblzma/lzma/fastpos_table.c
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Comment:

changelog.gz (commit 975d8fd) explains:

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Other-Authors: Roland McGrath, Akim Demaille, Paul Eggert,

David Mackenzie, Bruno Haible, and many others.

Origin: configure.ac from XZ Utils,

visibility.m4 serial 1 (gettext-0.15),

```
Autoconf 2.52g
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configure.ac:
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dos/config.h was generated with autoheader, which tells Autoconf to
output a script to generate a config.h file and then runs it.

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Upstream-Name: brotli

Source: <https://github.com/google/brotli>

Files: *

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Files: debian/*

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This package was debianized by Thom May <thom@debian.org> on Wed, 17 Nov 2004 11:27:14 -0800

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From strings/apr_fnmatch.c, include/apr_fnmatch.h,
misc/unix/getopt.c,
file_io/unix/mktemp.c, strings/apr_strings.c:

/*

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From network_io/unix/inet_ntop.c, network_io/unix/inet_pton.c:

- ```
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```

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- ```
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From strings/apr_strnatcmp.c, include/apr_strings.h:

strnatcmp.c -- Perform 'natural order' comparisons of strings in C.
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From test/CuTest.c, test/CuTest.h:

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Upstream-Name: libassuan

Upstream-Contact: Werner Koch <wk@gnupg.org>

Source: <https://gnupg.org/ftp/gcrypt/libassuan/>

Files: *

Makefile.am

src/Makefile.am

src/assuan-buffer.c

src/assuan-error.c

src/assuan-inquire.c

src/assuan-io.c

src/assuan-listen.c

src/assuan-pipe-server.c

src/assuan-socket-connect.c

src/assuan-socket-server.c

src/assuan-socket.c

src/assuan-uds.c

src/client.c

src/context.c

src/funopen.c

src/memrchr.c

src/posix-fd-t.inc.h

src/posix-includes.inc.h

src/posix-sock-nonce.inc.h

src/posix-sys-pth-impl.h

src/posix-types.inc.h
src/putc_unlocked.c
src/server.c
src/setenv.c
src/stpcpy.c
src/system-posix.c
src/system-w32.c
src/system-w32ce.c
src/system.c
src/w32-fd-t.inc.h
src/w32-includes.inc.h
src/w32-sock-nonce.inc.h
src/w32-sys-pth-impl.h
src/w32-types.inc.h
src/w32ce-add.h
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Files:

AUTHORS

aclocal.m4

build-aux/git-log-footer

configure

INSTALL

m4/gnupg-pth.m4

m4/ltoptions.m4

m4/ltsugar.m4

m4/ltversion.m4

m4/lt~obsolete.m4

m4/onceonly.m4

m4/socklen.m4

m4/sys_socket_h.m4

m4/Makefile.in

src/libassuan-config.in

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src/gpgcedev.c

src/gpgcedev.def

src/gpgcemgr.c

tests/Makefile.am
tests/Makefile.in
tests/ce-createtime.c
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src/libassuan.def
src/libassuan.vers
tests/version.c

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build-aux/ltmain.sh
m4/libtool.m4
build-aux/missing

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build-aux/config.sub
doc/assuan.info
doc/assuan.texi

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Upstream-Name: Pinentry

Upstream-Contact: gnupg-devel@gnupg.org

Source: <https://gnupg.org/ftp/gcrypt/pinentry/>

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Files: fltk/*

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Files: gtk+-2/pinentry-gtk-2.c

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Upstream-Name: Nettle

Upstream-Contact: Niels Mller <nisse@lysator.liu.se>

Source: <http://www.lysator.liu.se/~nisse/nettle/>

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The implementation of the AES cipher (also known as rijndael) is

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The implementation of the ARCFOUR (also known as RC4) cipher is written by Niels Mller.

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POLY1305

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SHA1

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SHA2

Written by Niels Miller, using Peter Gutmanns SHA1 code as a model.

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SHA3

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TWOFISH

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UMAC

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CMAC

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RSA

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DSA

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ECDSA

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ed448-shake256-sign.c ed448-shake256-verify.c
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pss-mgf1.c pss-mgf1.h pss.c pss.h
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man/rmd160.3

man/sha1.3

man/sha2.3

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src/helper.c

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This package was put together by me, Mark Baker <mbaker@iee.org> from the
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Email local part: ph10
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Matthias Urlichs <smurf@debian.org>.

It is now maintained by Andreas Metzler <ametzler@debian.org>, Eric Dorland <eric@debian.org> and James Westby <jw+debian@jameswestby.net>

It was downloaded from <https://ftp.gnu.org/gnu/libtasn1/>

Upstream Authors: Fabio Fiorina <fiorinaf@gnutls.org>
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This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
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collection, containing Ada, C, C++, D, Fortran 95, Go, Objective-C,
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libraries. In addition, Debian provides the gm2 compiler, either in
the same source package, or built from a separate same source package.

Packaging is done by the Debian GCC Maintainers
<debian-gcc@lists.debian.org>, with sources obtained from:

<ftp://gcc.gnu.org/pub/gcc/releases/> (for full releases)

<svn://gcc.gnu.org/svn/gcc/> (for prereleases)

<ftp://sourceware.org/pub/newlib/> (for newlib)

[git://git.savannah.gnu.org/gm2.git](https://git.savannah.gnu.org/gm2.git) (for Modula-2)

The current gcc-10 source package is taken from the SVN gcc-10-branch.

Changes: See [changelog.Debian.gz](https://changelog.debian.org)

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

| Language | Compiler package | Library package | Documentation |
|---------------|------------------|-----------------|-------------------|
| Ada | gnat-10 | libgnat-10 | gnat-10-doc |
| BRIG | gccbrig-10 | libhsail-rt0 | |
| C | gcc-10 | | gcc-10-doc |
| C++ | g++-10 | libstdc++6 | libstdc++6-10-doc |
| D | gdc-10 | | |
| Fortran 95 | gfortran-10 | libgfortran5 | gfortran-10-doc |
| Go | gccgo-10 | libgo0 | |
| Objective C | gobjc-10 | libobjc4 | |
| Objective C++ | gobjc++-10 | | |
| Modula-2 | gm2-10 | libgm2 | |

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

| Language | Sources | Development | Debugging | Position-Independent |
|----------|------------------|-------------------|-------------------|----------------------|
| C++ | | libstdc++6-10-dbg | libstdc++6-10-pic | |
| D | libphobos-10-dev | | | |

Additional packages include:

All languages:

| | |
|-------------------|-------------------------------------|
| libgcc1, | |
| libgcc2, libgcc4 | GCC intrinsics (platform-dependent) |
| gcc-10-base | Base files common to all compilers |
| gcc-10-soft-float | Software floating point (ARM only) |
| gcc-10-source | The sources with patches |

Ada:

libgnat-util10-dev, libgnat-util10 GNAT version library

C:

| | |
|----------------------|---------------------------------------|
| cpp-10, cpp-10-doc | GNU C Preprocessor |
| libssp0-dev, libssp0 | GCC stack smashing protection library |
| libquadmath0 | Math routines for the __float128 type |

fixincludes Fix non-ANSI header files

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library

libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
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libquadmath/math:

atanq.c, expm1q.c, j0q.c, j1q.c, log1pq.c, logq.c:

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coshq.c, erfq.c, jnq.c, lgammaq.c, powq.c, roundq.c:

Changes for 128-bit __float128 are

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ldexpq.c:

- * Conversion to long double by Ulrich Drepper,
- * Cygnus Support, drepper@cygnus.com.

cosq_kernel.c, expq.c, sincos_table.c, sincosq.c, sincosq_kernel.c, sinq_kernel.c, truncq.c:

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isinfq.c:

- * Written by J.T. Conklin <jtc@netbsd.org>.
- * Change for long double by Jakub Jelinek <jj@ultra.linux.cz>
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llroundq.c, lroundq.c, tgammaq.c:

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log10q.c:

Cephes Math Library Release 2.2: January, 1991
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D:
gdc-10 GNU D Compiler
libphobos-10-dev D standard runtime library

The D source package is made up of the following components.

The D front-end for GCC:
- d/*

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The DMD Compiler implementation of the D programming language:
- d/dmd/*

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The Zlib data compression library:
- d/phobos/etc/c/zlib/*

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The Phobos standard runtime library:

- d/phobos/*

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Mesa 3-D Graphics Library v21.0.3

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include/GL/gl.h :

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```
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DOM Level 3 Core Specification v1.0

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Double-conversion v1.1.5

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Version: 4.1

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CUP Parser Generator for Java v 0.10k

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* Author: Jim Fulton, MIT The Open Group

*

* Xlib Extension-Writing Utilities

*

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Last revised by Reagle \$Date: 2005-06-03 18:49:13 -0400 (Fri, 03 Jun 2005) \$

1.438 servlet-api 3.0.1

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* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-

jar/io/perfmark/PerfMark.java

* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-jar/io/perfmark/package-info.java

*

/opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-jar/io/perfmark/Link.java

* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-jar/io/perfmark/Tag.java

1.440 jackson-annotations 2.15.0

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1.441 jackson-dataformat-yaml 2.15.0

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1.445 core-io 1.7.18

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It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007.

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1.446 neo4j-java-driver 4.4.1

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1.447 dropwizard-web-security 1.2.1

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jar/com/palantir/websecurity/ImmutableStyles.java
* /opt/cola/permits/1685970394_1684869085.095612/0/dropwizard-web-security-1-2-1-sources-1-
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1.448 jackson-annotations 2.15.1

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1.450 jackson 2.15.1

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1.451 jackson-dataformat-yaml 2.15.1

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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-jar/io/micronaut/websocket/WebSocketClientFactory.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-jar/io/micronaut/websocket/WebSocketClientFactoryResolver.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-jar/io/micronaut/websocket/WebSocketPongMessage.java
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jar/io/micronaut/websocket/WebSocketVersion.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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*
/opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/exceptions/package-info.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/bind/package-info.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
```

jar/io/micronaut/websocket/annotation/ServerWebSocket.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/event/WebSocketMessageProcessedEvent.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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*
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
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jar/io/micronaut/websocket/exceptions/WebSocketException.java
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/context/WebSocketBeanRegistry.java
*
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* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/context/package-info.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/interceptor/WebSocketSessionAware.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/WebSocketBroadcaster.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/interceptor/package-info.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/bind/WebSocketState.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/annotation/OnOpen.java
*
/opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/context/DefaultWebSocketBeanRegistry.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/exceptions/WebSocketSessionException.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/context/WebSocketBean.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/package-info.java
* /opt/cola/permits/1701043868_1685472869.938123/0/micronaut-websocket-3-8-8-sources-
jar/io/micronaut/websocket/WebSocketClientRegistry.java

1.456 micronaut-http-server 3.8.8

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* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/locale/HttpLocalizedMessageSource.java

* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/exceptions/response/HateoasErrorResponseProcessorReplacement.java

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* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-

jar/io/micronaut/http/server/exceptions/response/ErrorContext.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/response/Error.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/ExecutableRouteInfo.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/CoroutineHelper.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/response/HateoasErrorResponseProcessor.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/response/ErrorResponseProcessor.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/response/DefaultErrorContext.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/RouteExecutor.java

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jar/io/micronaut/http/server/exceptions/ServerStartupException.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/HttpStatusHandler.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/HttpServerConfiguration.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/locale/HttpLocaleResolutionConfiguration.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/cors/CorsOriginConfiguration.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/types/files/FileCustomizableResponseType.java

* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/cors/CorsFilter.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/types/files/SystemFile.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/HttpHostResolver.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/binding/RequestArgumentSatisfier.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/cors/CorsUtil.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/exceptions/UnsatisfiedArgumentHandler.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/locale/CookieLocaleResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/exceptions/DuplicateRouteHandler.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/DefaultHttpClientAddressResolver.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/exceptions/HttpServerException.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/multipart/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/locale/CompositeHttpLocaleResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/cors/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/locale/RequestLocaleResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/context/package-info.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/util/ProxyHeaderParser.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/types/files/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/codec/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/types/files/StreamedFile.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/exceptions/InternalServerException.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-jar/io/micronaut/http/server/binding/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-

jar/io/micronaut/http/server/exceptions/JsonExceptionHandler.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/binding/LocaleArgumentBinder.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/websocket/ServerWebSocketProcessor.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/context/ServerRequestContextInstrumentation.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/cors/CorsOriginConverter.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/multipart/MultipartBody.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/package-info.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/locale/HttpFixedLocaleResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/locale/HttpLocaleResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/ExceptionHandler.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/types/CustomizableResponseTypeException.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/HttpClientAddressResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/ConversionErrorHandler.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/types/CustomizableResponseType.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/locale/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/locale/HttpAbstractLocaleResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/util/DefaultHttpHostResolver.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/URISyntaxHandler.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/codec/TextStreamCodec.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/UnsatisfiedRouteHandler.java
*
/opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/context/ServerRequestContextInvocationInstrumenter.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-

```
jar/io/micronaut/http/server/types/package-info.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/exceptions/ContentLengthExceededHandler.java
* /opt/cola/permits/1701043707_1685472913.2929564/0/micronaut-http-server-3-8-8-sources-
jar/io/micronaut/http/server/binding/BasicAuthArgumentBinder.java
```

1.457 st4 4.3.2

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Found in path(s):

```
* /opt/cola/permits/1701043782_1685472652.224027/0/st4-4-3-2-jar/META-INF/maven/org.antlr/ST4/pom.xml
```

1.458 micronaut-validation 3.8.8

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* /opt/cola/permits/1701043553_1685472686.5748956/0/micronaut-validation-3-8-8-jar/META-INF/native-
image/io.micronaut.validation/micronaut-validation/native-image.properties
```

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```
* /opt/cola/permits/1701043553_1685472686.5748956/0/micronaut-validation-3-8-8-jar/META-
INF/maven/io.micronaut/micronaut-validation/pom.xml
```

1.459 micronaut-core-reactive 3.8.8

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* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/META-INF/native-image/io.micronaut/micronaut-core-reactive/native-image.properties
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* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/subscriber/SingleThreadedBufferingSubscriber.java

*

/opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/package-info.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/publisher/CompletableFuturePublisher.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/processor/package-info.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/subscriber/Completable.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/publisher/SingleSubscriberPublisher.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/publisher/AsyncSingleResultPublisher.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/processor/SingleSubscriberProcessor.java

*

/opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/subscriber/TypedSubscriber.java

* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-jar/io/micronaut/core/async/publisher/package-info.java

```
* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/processor/SingleThreadedBufferingProcessor.java
* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/subscriber/CompletionAwareSubscriber.java
* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/annotation/SingleResult.java
* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/subscriber/Emitter.java
* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/publisher/Publishers.java
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* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/publisher/PublishersOptimizations.java
* /opt/cola/permits/1701043813_1685472430.680824/0/micronaut-core-reactive-3-8-8-sources-
jar/io/micronaut/core/async/ReactiveStreamsTypeInfoProvider.java
```

1.460 micronaut-context 3.8.8

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*MapClaims.java
* Note: rewritten to standard Java 8 DateTime by zemiak (c) 2016
* Forked from: <https://github.com/frode-carlsen/cron>
*/

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* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/cron/CronExpression.java

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* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/event/AbstractEmbeddedApplicationEvent.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/event/ApplicationStartupEvent.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/converters/time/TimeConverterRegistrar.java

*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/TaskExecutors.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/executor/IOExecutorServiceConfig.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/env/ConfigurationAdvice.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/annotation/package-info.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/TaskScheduler.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/env/package-info.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/package-info.java

*

/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/InvocationInstrumenterFactory.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/Micronaut.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/annotation/Scheduled.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/package-info.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/MultipleInvocationInstrumenter.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/server/event/ServerShutdownEvent.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/event/annotation/EventListener.java

*

/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/ScopedProxy.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/NoopInstrumentation.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/server/event/package-info.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/ScheduledExecutorTaskScheduler.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/executor/ExecutorSelector.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/exceptions/TaskExecutionException.java

*

/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/refresh/package-info.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/EmbeddedApplication.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/processor/ScheduledMethodProcessor.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/InstrumentedExecutorService.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/package-info.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/ThreadLocalCustomScope.java

* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-

jar/io/micronaut/runtime/converters/reactive/package-info.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/context/scope/Refreshable.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/UserExecutorConfiguration.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/TaskExceptionHandler.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/DefaultTaskExceptionHandler.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/instrument/Instrumentation.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/io/watch/FileWatchConfiguration.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/io/watch/event/WatchEventType.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/server/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/context/CompositeMessageSource.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/event/ApplicationShutdownEvent.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/event/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/NamedThreadFactory.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/async/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/exceptions/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/instrument/ExecutorServiceInstrumenter.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/io/watch/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/io/watch/event/FileChangedEvent.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/context/scope/ThreadLocal.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/DefaultThreadFactory.java
*

/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/event/annotation/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/exceptions/ApplicationStartupException.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/io/watch/DefaultWatchThread.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/executor/DefaultExecutorSelector.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/ApplicationConfiguration.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/io/watch/FileWatchCondition.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/converters/time/package-info.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/executor/ScheduledExecutorServiceConfig.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/InvocationInstrumenterWrappedRunnable.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/exceptions/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/InvocationInstrumenterWrappedCallable.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/refresh/RefreshScope.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/annotation/ExecuteOn.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/annotation/Async.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/io/watch/WatchServiceFactory.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/async/AsyncInterceptor.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/refresh/RefreshInterceptor.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/io/watch/event/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/scheduling/instrument/ReactiveInvocationInstrumenterFactory.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/env/ConfigurationIntroductionAdvice.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/server/event/ServerStartupEvent.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/context/scope/refresh/RefreshEvent.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-

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jar/io/micronaut/scheduling/annotation/Schedules.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/processor/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/exceptions/SchedulerConfigurationException.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/ExecutorType.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/cron/package-info.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/instrument/InstrumentedExecutor.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/instrument/InvocationInstrumenter.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/runtime/server/EmbeddedServer.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/ExecutorFactory.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/instrument/RunnableInstrumenter.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/NextFireTime.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/ThreadSelection.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/ReschedulingTask.java
*
/opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/instrument/InstrumentedScheduledExecutorService.java
* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-
jar/io/micronaut/scheduling/executor/ExecutorConfiguration.java
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* /opt/cola/permits/1701043789_1685703605.0879838/0/micronaut-context-3-8-8-sources-jar/io/micronaut/runtime/converters/reactive/ReactiveTypeConverterRegistrar.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/RequestSigner.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/SignerAsRequestSigner.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/internal/SdkRequestRetryHeaderProvider.java
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jar/com/amazonaws/util/BinaryUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/DateUtils.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/Classes.java
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jar/com/amazonaws/internal/SdkSSLContext.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/annotation/package-info.java

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jar/com/amazonaws/internal/http/ErrorCodeParser.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/internal/http/JsonErrorCodeParser.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/internal/http/CompositeErrorCodeParser.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/ResettableInputStream.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/InMemoryRegionsProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/regions/LegacyRegionXmlMetadataBuilder.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/InMemoryRegionImpl.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/transform/SimpleTypeCborUnmarshaller.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/apache/client/impl/CRC32ChecksumResponseInterceptor.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/partitions/model/Endpoint.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/LegacyRegionXmlLoadUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/RegionImpl.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/partitions/model/CredentialScope.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/partitions/model/Region.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/AbstractRegionMetadataProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/apache/SdkProxyRoutePlanner.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/SdkStructuredIonFactory.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/SdkIonGenerator.java
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/partitions/PartitionMetadataProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/partitions/model/Partition.java
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/Protocol.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/ImmutableMapParameter.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/config/JsonIndex.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/config/SignerConfig.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/config/Builder.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/jmx/JmxInfoProviderSupport.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/jmx/spi/SdkMBeanRegistry.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/ServiceClientHolderInputStream.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/AWSSessionCredentials.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/metrics/MetricAdmin.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/AWSSessionCredentialsProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/RequestClientOptions.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/ClassLoaderHelper.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/BasicSessionCredentials.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/jmx/spi/JmxInfoProvider.java
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jar/com/amazonaws/util/NameValuePair.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/URLEncodedUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/BasicNameValuePair.java
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jar/com/amazonaws/auth/DefaultAWSCredentialsProviderChain.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/util/AwsHostNameUtils.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/internal/DynamoDBBackoffStrategy.java  
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jar/com/amazonaws/HandlerContextAware.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/auth/InstanceProfileCredentialsProvider.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/internal/CRC32MismatchException.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/internal/CustomBackoffStrategy.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/auth/SystemPropertiesCredentialsProvider.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/internal/EC2MetadataClient.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-  
jar/com/amazonaws/auth/EnvironmentVariableCredentialsProvider.java  
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jar/com/amazonaws/auth/AWSCredentialsProviderChain.java  
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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jar/com/amazonaws/auth/ClasspathPropertiesFileCredentialsProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/http/IdleConnectionReaper.java

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jar/com/amazonaws/util/CountingInputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/retry/internal/AuthErrorRetryStrategy.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/transform/VoidJsonUnmarshaller.java

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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/waiters/WaiterTimedOutException.java

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jar/com/amazonaws/util/AwsClientSideMonitoringMetrics.java

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jar/com/amazonaws/metrics/package-info.java

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jar/com/amazonaws/waiters/PollingStrategy.java

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jar/com/amazonaws/util/AWSRequestMetrics.java

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jar/com/amazonaws/ClientConfiguration.java

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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/NamespaceRemovingInputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/metrics/RequestMetricType.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/WebIdentityTokenCredentialsProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/DefaultServiceEndpointBuilder.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/ResponseMetadata.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/AmazonHttpClient.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/metrics/ServiceLatencyProvider.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/XpathUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/policy/internal/JsonPolicyReader.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/config/HttpClientConfigJsonHelper.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/AnonymousAWSCredentials.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/event/ProgressListener.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/RuntimeHttpUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/TlsKeyManagersProvider.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/transform/SimpleTypeStaxUnmarshaller.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/AbstractFileTlsKeyManagersProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/RepeatableInputStreamRequestEntity.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/conn/Wrapped.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/monitoring/CsmConfiguration.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/SignerTypeAware.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/transform/StaxUnmarshallerContext.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/retry/RetryPolicy.java

*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/SignerParams.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/retry/internal/MaxAttemptsResolver.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/policy/conditions/StringCondition.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/TimestampFormat.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/SdkHttpUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/http/timers/client/ClientExecutionAbortTask.java

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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/http/conn/SdkConnectionKeepAliveStrategy.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/UriResourcePathUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/Base16Lower.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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 * /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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 jar/com/amazonaws/ReadLimitInfo.java
 * /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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 * /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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 * /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/DnsResolver.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/log/CommonsLog.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/SDKGlobalTime.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/SdkSSLMetricsSocket.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/SignableRequest.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/request/HttpRequestAbortTaskTrackerImpl.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/client/ConnectionFactory.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/DelegateSocket.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/log/JulLog.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/SdkInternalList.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/request/NoOpHttpRequestAbortTaskTracker.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/client/NoOpClientExecutionAbortTrackerTask.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/SdkThreadLocalsRegistry.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/JsonErrorResponseHandler.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/client/ClientExecutionAbortTaskImpl.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/http/JsonErrorCodeParser.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/request/HttpRequestTimer.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/PredefinedClientConfigurations.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/request/HttpRequestAbortTaskTracker.java
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/ValidationUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/client/HttpClientFactory.java
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/NamedDefaultThreadFactory.java
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/endpoint/RegionFromEndpointResolver.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/MetadataSupportedRegionFromEndpointProvider.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/endpoint/DefaultRegionFromEndpointResolver.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/SdkProtectedApi.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/Immutable.java

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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/GuardedBy.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/SdkInternalApi.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/SdkTestInternalApi.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/ThreadSafe.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/annotation/NotThreadSafe.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/event/DeliveryMode.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/profile/internal/securitytoken/ProfileCredentialsService.java

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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/ProcessCredentialsProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/internal/AWS4SignerUtils.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/profile/internal/securitytoken/STSProfileCredentialsServiceProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/event/ResponseProgressInputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/BoundedLinkedHashMap.java

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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/SdkInputStream.java

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*/
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* Interface for providing AWS region information. Implementations are free to use any strategy for
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*/

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/transform/SimpleTypeUnmarshallers.java
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jar/com/amazonaws/transform/LegacyErrorUnmarshaller.java
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/transform/AbstractErrorUnmarshaller.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/internal/SimpleTypeJsonMarshallers.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/internal/HeaderMarshallers.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/SdkStructuredJsonFactoryImpl.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/internal/JsonMarshallerContext.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/AWSRefreshableSessionCredentials.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/client/builder/ExecutorFactory.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/SdkBaseException.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/TimingInfoFullSupport.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/client/ClientHandlerImpl.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/retry/RetryPolicyAdapter.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/retry/v2/RetryOnExceptionsCondition.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/MarshallingInfo.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/StaticCredentialsProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/JsonErrorShapeMetadata.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/AwsEnvVarOverrideRegionProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/EndpointToRegion.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/AWSStaticCredentialsProvider.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/SdkJsonMarshallerFactory.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/presign/PresignerFacade.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/ClientConfigurationFactory.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/profile/path/cred/CredentialsDefaultLocationProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/SdkClientException.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/retry/v2/AndRetryCondition.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/TimingInfo.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/XMLWriter.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/JsonProtocolMarshallerBuilder.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/DefaultAwsRegionProviderChain.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/internal/QueryParamMarshallers.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/profile/internal/ProfileAssumeRoleCredentialsProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/http/AwsErrorResponseHandler.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/JsonContent.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/AmazonWebServiceRequestAdapter.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/client/builder/AwsAsyncClientBuilder.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/retry/v2/FixedDelayBackoffStrategy.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/retry/v2/OrRetryCondition.java
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jar/com/amazonaws/http/conn/ssl/TLSProtocol.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/conn/ssl/SdkTLSSocketFactory.java
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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/Base64Codec.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/jmx/MBeans.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/jmx/SdkMBeanRegistrySupport.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/ResetException.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/MetricsInputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/SdkFilterInputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/EncodingScheme.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/AbortedException.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/CodecUtils.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/AWS4Signer.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/RegionMetadata.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/AbstractBase32Codec.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/IOUtils.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/RegionAwareSigner.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/SdkBufferedInputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/SdkFilterOutputStream.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/regions/Region.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/MetricAware.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/EncodingSchemeEnum.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-

jar/com/amazonaws/util/Base32.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/Base32Codec.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/ServiceAwareSigner.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/Base64.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/Base16.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/HttpClientWrappingInputStream.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/SdkRuntime.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/EC2MetadataUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/RegionUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/RegionMetadataParser.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/ListWithAutoConstructFlag.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/SdkDigestInputStream.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/Codec.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/Throwables.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/apache/client/impl/SdkHttpClient.java

```
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/conn/ssl/ShouldClearSslSessionPredicate.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/FakeIOException.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/DateTimeJsonSerializer.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/handlers/IRequestHandler2.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/CanHandleNullCredentials.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/apache/client/impl/ConnectionManagerAwareHttpClient.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/IdempotentUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/apache/client/impl/ApacheConnectionFactory.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/apache/client/impl/ApacheHttpClientFactory.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/log/InternalLogFactory.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/protocol/json/SdkStructuredJsonFactory.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/CapacityManager.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/http/timers/package-info.java
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*/
/**
* Interface for providing AWS credentials. Implementations are free to use any
* strategy for providing AWS credentials, such as simply providing static
* credentials that don't change, or more complicated implementations, such as
```

* integrating with existing key management systems.

*/

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/auth/AWSCredentialsProvider.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/adapters/types/StringToByteBufferAdapter.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/adapters/types/TypeAdapter.java

*

/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/auth/NoOpSignerProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/auth/SignerProviderContext.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/adapters/types/StringToInputStreamAdapter.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/auth/DefaultSignerProvider.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/util/MetadataCache.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/internal/auth/SignerProvider.java

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* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/SdkStructuredCborFactory.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/SdkStructuredPlainJsonFactory.java

*

/* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/StructuredJsonGenerator.java

* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-jar/com/amazonaws/protocol/json/SdkJsonProtocolFactory.java

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jar/com/amazonaws/regions/ServiceAbbreviations.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/regions/Regions.java
```

No license file was found, but licenses were detected in source scan.

```
/*
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 */
```

Found in path(s):

```
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/retry/RetryMode.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/TokenBucket.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/EC2ResourceFetcher.java
*
```

```
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/ContainerCredentialsProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/CredentialsEndpointProvider.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/InstanceMetadataServiceResourceFetcher.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/retry/internal/CredentialsEndpointRetryParameters.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/internal/ConnectionUtils.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/BaseCredentialsFetcher.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/InstanceMetadataServiceCredentialsFetcher.java
*
/opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/retry/internal/CredentialsEndpointRetryPolicy.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/ContainerCredentialsRetryPolicy.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/EC2ContainerCredentialsProviderWrapper.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/EndpointPrefixAwareSigner.java
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/auth/ContainerCredentialsFetcher.java
No license file was found, but licenses were detected in source scan.
```

```
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*/
```

Found in path(s):

```
* /opt/cola/permits/1701043743_1685472903.889025/0/aws-java-sdk-core-1-12-326-sources-
jar/com/amazonaws/util/PolicyUtils.java
```

1.462 bind-license 9.11.4-26.P2.el7_9.13

1.462.1 Available under license :

No license file was found, but licenses were detected in source scan.

License: MPLv2.0

Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SPECS/bind.spec

No license file was found, but licenses were detected in source scan.

From 346683631ae0f83ad4f09a69cfa5e5c6ea49e5d9 Mon Sep 17 00:00:00 2001

From: Evan Hunt <each@isc.org>

Date: Tue, 12 Sep 2017 19:05:46 -0700

Subject: [PATCH] rebased rt31459c

[rt31459d] update the newer tools

[rt31459d] setup entropy in dns_lib_init()

[rt31459d] silence compiler warning

DNS_OPENSSL_LIBS -> DST_OPENSSL_LIBS

Include new unit test

| | |
|--|-----------------|
| bin/confgen/keygen.c | 7 + |
| bin/dnssec/dnssec-dsfromkey.c | 8 +- |
| bin/dnssec/dnssec-importkey.c | 8 +- |
| bin/dnssec/dnssec-revoke.c | 8 +- |
| bin/dnssec/dnssec-settime.c | 8 +- |
| bin/dnssec/dnssec-signzone.c | 11 +- |
| bin/dnssec/dnssec-verify.c | 8 +- |
| bin/dnssec/dnssectool.c | 11 +- |
| bin/named/server.c | 6 + |
| bin/nsupdate/nsupdate.c | 14 +- |
| bin/tests/makejournal.c | 6 +- |
| bin/tests/system/pipelined/pipequeries.c | 20 +- |
| bin/tests/system/pipelined/tests.sh | 4 +- |
| bin/tests/system/rsabigexponent/bigkey.c | 4 + |
| bin/tests/system/tkey/keycreate.c | 26 ++- |
| bin/tests/system/tkey/keydelete.c | 26 ++- |
| bin/tests/system/tkey/tests.sh | 8 +- |
| bin/tools/mdig.c | 3 +- |
| configure | 250 ++++++----- |
| configure.ac | 77 +++++- |


```

lib/dns/dst_api.c          | 21 +-
lib/dns/include/dst/dst.h  | 8 +
lib/dns/lib.c              | 15 +-
lib/dns/openssl_link.c    | 72 ++++++
lib/dns/pkcs11.c           | 29 +-
lib/dns/tests/Kyuafile     | 1 +
lib/dns/tests/Makefile.in  | 7 +
lib/dns/tests/dstrandom_test.c | 115 ++++++
lib/dns/win32/libdns.def.in | 7 +
lib/isc/entropy.c          | 24 +++
lib/isc/include/isc/entropy.h
    | 12 ++
lib/isc/include/isc/platform.h.in | 5 +
lib/isc/include/isc/types.h      | 2 +
lib/isc/pk11.c               | 12 +-
lib/isc/win32/include/isc/platform.h.in | 5 +
win32utils/Configure          | 28 +-
36 files changed, 701 insertions(+), 175 deletions(-)
create mode 100644 lib/dns/tests/dstrandom_test.c

```

```

diff --git a/bin/confgen/keygen.c b/bin/confgen/keygen.c
index 40cf74c..bd269e7 100644
--- a/bin/confgen/keygen.c
+++ b/bin/confgen/keygen.c
@@ -165,6 +165,13 @@ generate_key(isc_mem_t *mctx, const char *randomfile, dns_secalg_t alg,
    randomfile = NULL;
    open_keyboard = ISC_ENTROPY_KEYBOARDYES;
}
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (randomfile != NULL &&
+  strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
+  randomfile = NULL;
+  isc_entropy_usehook(ectx, true);
+ }
+#endif
DO("start entropy source", isc_entropy_usebestsource(ectx,
    &entropy_source,

```

```

    randomfile,
diff --git a/bin/dnssec/dnssec-dsfromkey.c b/bin/dnssec/dnssec-dsfromkey.c
index 4420f2d..9cb63a8 100644
--- a/bin/dnssec/dnssec-dsfromkey.c
+++ b/bin/dnssec/dnssec-dsfromkey.c
@@ -498,14 +498,14 @@ main(int argc, char **argv) {

if (ectx == NULL)
    setup_entropy(mctx, NULL, &ectx);
- result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);

```

```

- if (result != ISC_R_SUCCESS)
- fatal("could not initialize hash");
result = dst_lib_init(mctx, ectx,
    ISC_ENTROPY_BLOCKING | ISC_ENTROPY_GOODONLY);
if (result != ISC_R_SUCCESS)
    fatal("could not initialize dst: %s",
        isc_result_totext(result));
+ result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+ fatal("could not initialize hash");
isc_entropy_stopcallbacksources(ectx);

setup_logging(mctx, &log);
@@ -574,8 +574,8 @@ main(int argc, char **argv) {
if (dns_rdataset_isassociated(&rdataset))
    dns_rdataset_disassociate(&rdataset);
cleanup_logging(&log);
- dst_lib_destroy();
    isc_hash_destroy();
+ dst_lib_destroy();
cleanup_entropy(&ectx);
dns_name_destroy();
if (verbose > 10)
diff --git a/bin/dnssec/dnssec-importkey.c b/bin/dnssec/dnssec-importkey.c
index dc9a293..52863a1 100644
--- a/bin/dnssec/dnssec-importkey.c
+++ b/bin/dnssec/dnssec-importkey.c
@@ -404,14 +404,14 @@ main(int argc, char **argv) {

if (ectx == NULL)
    setup_entropy(mctx, NULL, &ectx);
- result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
- if (result != ISC_R_SUCCESS)
- fatal("could not initialize hash");
result = dst_lib_init(mctx, ectx,
    ISC_ENTROPY_BLOCKING | ISC_ENTROPY_GOODONLY);
if (result != ISC_R_SUCCESS)
    fatal("could not initialize dst: %s",
        isc_result_totext(result));
+ result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+ fatal("could not initialize hash");
isc_entropy_stopcallbacksources(ectx);

setup_logging(mctx, &log);
@@ -455,8 +455,8 @@ main(int argc, char **argv) {
if (dns_rdataset_isassociated(&rdataset))

```

```

    dns_rdataset_disassociate(&rdataset);
cleanup_logging(&log);
- dst_lib_destroy();
isc_hash_destroy();
+ dst_lib_destroy();
cleanup_entropy(&ectx);
dns_name_destroy();
if (verbose > 10)
diff --git a/bin/dnssec/dnssec-revoke.c b/bin/dnssec/dnssec-revoke.c
index 0121a34..74a99b0 100644
--- a/bin/dnssec/dnssec-revoke.c
+++ b/bin/dnssec/dnssec-revoke.c
@@ -184,14 +184,14 @@ main(int argc, char **argv) {

if (ectx == NULL)
    setup_entropy(mctx, NULL, &ectx);
- result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
- if (result != ISC_R_SUCCESS)
- fatal("Could not initialize hash");
result = dst_lib_init2(mctx, ectx, engine,
    ISC_ENTROPY_BLOCKING | ISC_ENTROPY_GOODONLY);
if (result != ISC_R_SUCCESS)
    fatal("Could not initialize dst: %s",
        isc_result_totext(result));
+ result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+ fatal("Could not initialize hash");
isc_entropy_stopcallbacksources(ectx);

result = dst_key_fromnamedfile(filename, dir,
@@ -273,8 +273,8 @@ main(int argc, char **argv) {

cleanup:
    dst_key_free(&key);
- dst_lib_destroy();
isc_hash_destroy();
+ dst_lib_destroy();
cleanup_entropy(&ectx);
if (verbose > 10)
    isc_mem_stats(mctx, stdout);
diff --git a/bin/dnssec/dnssec-settime.c b/bin/dnssec/dnssec-settime.c
index f017895..2c568fc 100644
--- a/bin/dnssec/dnssec-settime.c
+++ b/bin/dnssec/dnssec-settime.c
@@ -391,14 +391,14 @@ main(int argc, char **argv) {

if (ectx == NULL)
    setup_entropy(mctx, NULL, &ectx);

```

```

- result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
- if (result != ISC_R_SUCCESS)
- fatal("Could not initialize hash");
result = dst_lib_init2(mctx, ectx, engine,
    ISC_ENTROPY_BLOCKING | ISC_ENTROPY_GOODONLY);
if (result != ISC_R_SUCCESS)
    fatal("Could not initialize dst: %s",
        isc_result_totext(result));
+ result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+ fatal("Could
not initialize hash");
isc_entropy_stopcallbacksources(ectx);

if (predecessor != NULL) {
@@ -683,8 +683,8 @@ main(int argc, char **argv) {
if (prevkey != NULL)
    dst_key_free(&prevkey);
dst_key_free(&key);
- dst_lib_destroy();
isc_hash_destroy();
+ dst_lib_destroy();
cleanup_entropy(&ectx);
if (verbose > 10)
    isc_mem_stats(mctx, stdout);
diff --git a/bin/dnssec/dnssec-signzone.c b/bin/dnssec/dnssec-signzone.c
index a097ac8..6567421 100644
--- a/bin/dnssec/dnssec-signzone.c
+++ b/bin/dnssec/dnssec-signzone.c
@@ -3472,14 +3472,15 @@ main(int argc, char *argv[]) {
if (!pseudorandom)
    eflags |= ISC_ENTROPY_GOODONLY;

- result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
- if (result != ISC_R_SUCCESS)
- fatal("could not create hash context");
-
result = dst_lib_init2(mctx, ectx, engine, eflags);
if (result != ISC_R_SUCCESS)
    fatal("could not initialize dst: %s",
        isc_result_totext(result));
+
+ result = isc_hash_create(mctx, ectx,
DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+ fatal("could not create hash context");
+
isc_stdtime_get(&now);

```

```

if (startstr != NULL) {
@@ -3896,8 +3897,8 @@ main(int argc, char *argv[]) {
    dns_master_styledestroy(&dsstyle, mctx);

    cleanup_logging(&log);
- dst_lib_destroy();
    isc_hash_destroy();
+ dst_lib_destroy();
    cleanup_entropy(&ectx);
    dns_name_destroy();
    if (verbose > 10)
diff --git a/bin/dnssec/dnssec-verify.c b/bin/dnssec/dnssec-verify.c
index 087cd5d..07c7294 100644
--- a/bin/dnssec/dnssec-verify.c
+++ b/bin/dnssec/dnssec-verify.c
@@ -281,15 +281,15 @@ main(int argc, char *argv[]) {
    if (ectx == NULL)
        setup_entropy(mctx, NULL, &ectx);

- result = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
- if (result != ISC_R_SUCCESS)
- fatal("could not create hash context");
-
    result = dst_lib_init2(mctx, ectx, engine, ISC_ENTROPY_BLOCKING);
    if (result != ISC_R_SUCCESS)
        fatal("could not initialize dst: %s",
            isc_result_totext(result));

+ result
+ = isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+ fatal("could not create hash context");
+
+ isc_stdtime_get(&now);

    rdclass = strtoclass(classname);
diff --git a/bin/dnssec/dnssectool.c b/bin/dnssec/dnssectool.c
index 7f045e8..2a0f9c6 100644
--- a/bin/dnssec/dnssectool.c
+++ b/bin/dnssec/dnssectool.c
@@ -34,6 +34,7 @@
#include <isc/heap.h>
#include <isc/list.h>
#include <isc/mem.h>
+#include <isc/platform.h>
#include <isc/print.h>
#include <isc/string.h>

```

```

#include <isc/time.h>
@@ -235,7 +236,8 @@ setup_entropy(isc_mem_t *mctx, const char *randomfile, isc_entropy_t **ectx) {
if (*ectx == NULL) {
    result = isc_entropy_create(mctx, ectx);
    if (result != ISC_R_SUCCESS)
- fatal("could not create entropy object");
+ fatal("could not create entropy object: %s",
+     isc_result_totext(result));
    ISC_LIST_INIT(sources);
}

@@ -244,6 +246,13 @@ setup_entropy(isc_mem_t *mctx, const char *randomfile, isc_entropy_t **ectx) {
    randomfile
= NULL;
}

+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (randomfile != NULL &&
+     strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
+     randomfile = NULL;
+     isc_entropy_usehook(*ectx, true);
+ }
+#endif
    result = isc_entropy_usebestsource(*ectx, &source, randomfile,
        usekeyboard);

diff --git a/bin/named/server.c b/bin/named/server.c
index 9826588..b3e3fc3 100644
--- a/bin/named/server.c
+++ b/bin/named/server.c
@@ -36,6 +36,7 @@
#include <isc/lex.h>
#include <isc/meminfo.h>
#include <isc/parseint.h>
+#include <isc/platform.h>
#include <isc/portset.h>
#include <isc/print.h>
#include <isc/random.h>
@@ -8291,6 +8292,10 @@ load_configuration(const char *filename, ns_server_t *server,
    "no source of entropy found");
} else {
    const char *randomdev = cfg_obj_asstring(obj);
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (strcmp(randomdev, ISC_PLATFORM_CRYPTORANDOM) == 0)
+     isc_entropy_usehook(ns_g_entropy, true);
+#else
    int level = ISC_LOG_ERROR;
    result

```

```

= isc_entropy_createfilesource(ns_g_entropy,
    randomdev);
@@ -8325,6 +8330,7 @@ load_configuration(const char *filename, ns_server_t *server,
    }
    isc_entropy_detach(&ns_g_fallbackentropy);
    }
+ #endif
# endif
}

diff --git a/bin/nsupdate/nsupdate.c b/bin/nsupdate/nsupdate.c
index 52b0274..23b69c9 100644
--- a/bin/nsupdate/nsupdate.c
+++ b/bin/nsupdate/nsupdate.c
@@ -279,7 +279,8 @@ setup_entropy(isc_mem_t *mctx, const char *randomfile, isc_entropy_t **ectx) {
if (*ectx == NULL) {
    result = isc_entropy_create(mctx, ectx);
    if (result != ISC_R_SUCCESS)
- fatal("could not create entropy object");
+ fatal("could not create entropy object: %s",
+     isc_result_totext(result));
    ISC_LIST_INIT(sources);
}

@@ -288,6 +289,13 @@ setup_entropy(isc_mem_t *mctx, const char *randomfile, isc_entropy_t **ectx) {
    randomfile = NULL;
}

+ #ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (randomfile != NULL &&
+     strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM)
+     == 0) {
+     randomfile = NULL;
+     isc_entropy_usehook(*ectx, true);
+ }
+ #endif
result = isc_entropy_usebestsource(*ectx, &source, randomfile,
    usekeyboard);

@@ -990,11 +998,11 @@ setup_system(void) {
}
}

- setup_entropy(gmctx, NULL, &entropy);
+ if (entropy == NULL)
+ setup_entropy(gmctx, NULL, &entropy);

result = isc_hash_create(gmctx, entropy, DNS_NAME_MAXWIRE);

```

```

check_result(result, "isc_hash_create");
- isc_hash_init();

result = dns_dispatchmgr_create(gmctx, entropy, &dispatchmgr);
check_result(result, "dns_dispatchmgr_create");
diff --git a/bin/tests/makejournal.c b/bin/tests/makejournal.c
index 68b5e5a..cd54c8d 100644
--- a/bin/tests/makejournal.c
+++ b/bin/tests/makejournal.c
@@ -102,12 +102,12 @@ main(int argc, char **argv) {
CHECK(isc_mem_create(0, 0, &mctx));
CHECK(isc_entropy_create(mctx, &ectx));

- CHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));
- hash_active = true;
-
CHECK(dst_lib_init(mctx, ectx, ISC_ENTROPY_BLOCKING));
dst_active = true;

+ CHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));
+ hash_active = true;
+
CHECK(isc_log_create(mctx, &lctx, &logconfig));
isc_log_registercategories(lctx, categories);
isc_log_setcontext(lctx);
diff --git a/bin/tests/system/pipelined/pipequeries.c b/bin/tests/system/pipelined/pipequeries.c
index e16ec11..95b65bf 100644
--- a/bin/tests/system/pipelined/pipequeries.c
+++ b/bin/tests/system/pipelined/pipequeries.c
@@ -204,6 +204,7 @@ sendqueries(isc_task_t *task, isc_event_t *event) {

int
main(int argc, char *argv[]) {
+ char *randomfile = NULL;
isc_sockaddr_t bind_any;
struct in_addr inaddr;
isc_result_t result;
@@ -222,7 +223,7 @@ main(int argc, char *argv[]) {
int c;

isc_commandline_errprint = false;
- while ((c = isc_commandline_parse(argc, argv, "p:") != -1) {
+ while ((c = isc_commandline_parse(argc, argv, "p:r:") != -1) {
switch (c) {
case 'p':
result = isc_parse_uint16(&port,
@@ -233,6 +234,9 @@ main(int argc, char *argv[])

```



```

{
    exit(1);
}
break;
+ case 'r':
+ randomfile = isc_commandline_argument;
+ break;
case '?':
    fprintf(stderr, "%s: invalid argument '%c'",
        argv[0], c);
@@ -275,10 +279,18 @@ main(int argc, char *argv[]) {

    ectx = NULL;
    RUNCHECK(isc_entropy_create(mctx, &ectx));
- RUNCHECK(isc_entropy_createfilesouce(ectx, "../random.data"));
- RUNCHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (randomfile != NULL &&
+     strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
+ randomfile = NULL;
+ isc_entropy_usehook(ectx, true);
+ }
+#endif
+ if (randomfile != NULL)
+ RUNCHECK(isc_entropy_createfilesouce(ectx, randomfile));

    RUNCHECK(dst_lib_init(mctx, ectx, ISC_ENTROPY_GOODONLY));
+ RUNCHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));

    taskmgr = NULL;
    RUNCHECK(isc_taskmgr_create(mctx, 1, 0, &taskmgr));
@@ -331,8 +343,8 @@ main(int argc, char *argv[]) {
    isc_task_detach(&task);
    isc_taskmgr_destroy(&taskmgr);

- dst_lib_destroy();
    isc_hash_destroy();
+ dst_lib_destroy();
    isc_entropy_detach(&ectx);

    isc_log_destroy(&lctx);
diff --git a/bin/tests/system/pipelined/tests.sh b/bin/tests/system/pipelined/tests.sh
index c0a99a2..0245527 100644
--- a/bin/tests/system/pipelined/tests.sh
+++ b/bin/tests/system/pipelined/tests.sh
@@ -19,7 +19,7 @@ status=0

echo_i "check pipelined TCP queries"

```

```

ret=0
-$PIPEQUERIES -p ${PORT} < input > raw || ret=1
+$PIPEQUERIES -p ${PORT} -r $RANDFILE < input > raw || ret=1
awk '{ print $1 " " $5 }' < raw > output
sort < output > output-sorted
$DIFF ref output-sorted || { ret=1 ; echo_i "diff sorted failed"; }
@@ -43,7 +43,7 @@ status=`expr $status + $ret`

echo_i "check keep-response-order"
ret=0
-$PIPEQUERIES -p ${PORT} ++ < inputb > rawb || ret=1
+$PIPEQUERIES -p ${PORT} -r $RANDFILE ++ < inputb > rawb || ret=1
awk '{ print $1 " " $5 }' < rawb > outputb
$DIFF refb outputb || ret=1
if [ $ret != 0 ]; then echo_i "failed"; fi
diff --git a/bin/tests/system/rsabigexponent/bigkey.c
b/bin/tests/system/rsabigexponent/bigkey.c
index abf12ed..fa5182c 100644
--- a/bin/tests/system/rsabigexponent/bigkey.c
+++ b/bin/tests/system/rsabigexponent/bigkey.c
@@ -20,6 +20,7 @@
#include <isc/buffer.h>
#include <isc/entropy.h>
#include <isc/mem.h>
+#include <isc/platform.h>
#include <isc/print.h>
#include <isc/region.h>
#include <isc/stdio.h>
@@ -183,6 +184,9 @@ main(int argc, char **argv) {

CHECK(isc_mem_create(0, 0, &mctx), "isc_mem_create()");
CHECK(isc_entropy_create(mctx, &ectx), "isc_entropy_create()");
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ isc_entropy_usehook(ectx, true);
+#endif
CHECK(isc_entropy_usebestsource(ectx, &source,
    "../random.data",
    ISC_ENTROPY_KEYBOARDNO),
diff --git a/bin/tests/system/tkey/keycreate.c b/bin/tests/system/tkey/keycreate.c
index 34360aa..3236968 100644
--- a/bin/tests/system/tkey/keycreate.c
+++ b/bin/tests/system/tkey/keycreate.c
@@ -206,6 +206,7 @@ sendquery(isc_task_t *task, isc_event_t
*event) {
int
main(int argc, char *argv[]) {
char *ourkeyname;
+ char *randomfile;

```

```

isc_taskmgr_t *taskmgr;
isc_timermgr_t *timermgr;
isc_socketmgr_t *socketmgr;
@@ -225,10 +226,21 @@ main(int argc, char *argv[]) {

RUNCHECK(isc_app_start());

+ randomfile = NULL;
+
+ if (argc < 2) {
+   fprintf(stderr, "I:no DH key provided\n");
+   exit(-1);
+ }
+ if (strcmp(argv[1], "-r") == 0) {
+   if (argc < 4) {
+     fprintf(stderr, "I:no DH key provided\n");
+     exit(-1);
+   }
+   randomfile = argv[2];
+   argv += 2;
+   argc -= 2;
+ }
+ ourkeyname = argv[1];

if (argc >= 3)
@@ -242,14 +254,22 @@ main(int argc, char *argv[]) {

ectx = NULL;
RUNCHECK(isc_entropy_create(mctx, &ectx));
- RUNCHECK(isc_entropy_createfilesouce(ectx, "../random.data"));
- RUNCHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (randomfile != NULL &&
+   strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
+   randomfile = NULL;
+   isc_entropy_usehook(ectx,
+     true);
+ }
+#endif
+ if (randomfile != NULL)
+   RUNCHECK(isc_entropy_createfilesouce(ectx, randomfile));

log = NULL;
logconfig = NULL;
RUNCHECK(isc_log_create(mctx, &log, &logconfig));

RUNCHECK(dst_lib_init(mctx, ectx, ISC_ENTROPY_GOODONLY));
+ RUNCHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));

```

```

taskmgr = NULL;
RUNCHECK(isc_taskmgr_create(mctx, 1, 0, &taskmgr));
@@ -328,8 +348,8 @@ main(int argc, char *argv[]) {

isc_log_destroy(&log);

- dst_lib_destroy();
isc_hash_destroy();
+ dst_lib_destroy();
isc_entropy_detach(&ectx);

isc_mem_destroy(&mctx);
diff --git a/bin/tests/system/tkey/keydelete.c b/bin/tests/system/tkey/keydelete.c
index a3dd450..350723f 100644
--- a/bin/tests/system/tkey/keydelete.c
+++ b/bin/tests/system/tkey/keydelete.c
@@ -137,6 +137,7 @@ sendquery(isc_task_t *task, isc_event_t *event) {
int
main(int argc, char **argv) {
char *keyname;
+ char *randomfile;
isc_taskmgr_t *taskmgr;
isc_timermgr_t *timermgr;
isc_socketmgr_t
*socketmgr;
@@ -157,10 +158,21 @@ main(int argc, char **argv) {

RUNCHECK(isc_app_start());

+ randomfile = NULL;
+
+ if (argc < 2) {
+ fprintf(stderr, "I:no key to delete\n");
+ exit(-1);
+ }
+ if (strcmp(argv[1], "-r") == 0) {
+ if (argc < 4) {
+ fprintf(stderr, "I:no DH key provided\n");
+ exit(-1);
+ }
+ randomfile = argv[2];
+ argv += 2;
+ argc -= 2;
+ }
keyname = argv[1];

dns_result_register();

```

```

@@ -170,14 +182,22 @@ main(int argc, char **argv) {

    ectx = NULL;
    RUNCHECK(isc_entropy_create(mctx, &ectx));
-   RUNCHECK(isc_entropy_createfilesouce(ectx, "../random.data"));
-   RUNCHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));
+   #ifdef ISC_PLATFORM_CRYPTORANDOM
+   if (randomfile != NULL &&
+       strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
+       randomfile = NULL;
+       isc_entropy_usehook(ectx, true);
+   }
+   #endif
+   if (randomfile != NULL)
+   RUNCHECK(isc_entropy_createfilesouce(ectx, randomfile));

    log = NULL;
    logconfig = NULL;
    RUNCHECK(isc_log_create(mctx,
        &log, &logconfig));

    RUNCHECK(dst_lib_init(mctx, ectx, ISC_ENTROPY_GOODONLY));
+   RUNCHECK(isc_hash_create(mctx, ectx, DNS_NAME_MAXWIRE));

    taskmgr = NULL;
    RUNCHECK(isc_taskmgr_create(mctx, 1, 0, &taskmgr));
@@ -265,8 +285,8 @@ main(int argc, char **argv) {

    isc_log_destroy(&log);

-   dst_lib_destroy();
    isc_hash_destroy();
+   dst_lib_destroy();
    isc_entropy_detach(&ectx);

    isc_mem_destroy(&mctx);
diff --git a/bin/tests/system/tkey/tests.sh b/bin/tests/system/tkey/tests.sh
index b265156..bcd60a6 100644
--- a/bin/tests/system/tkey/tests.sh
+++ b/bin/tests/system/tkey/tests.sh
@@ -33,7 +33,7 @@ for owner in . foo.example.
do
    echo_i "creating new key using owner name \"$owner\" ($n)"
    ret=0
-   keyname=`$KEYCREATE $dhkeyname $owner` || ret=1
+   keyname=`$KEYCREATE -r $RANDFILE $dhkeyname $owner` || ret=1
    if [ $ret != 0 ]; then
        echo_i "failed"

```

```

status=$((status+ret))
@@ -57,7 +57,7 @@ do

echo_i "deleting new key ($n)"
ret=0
- $KEYDELETE $keyname ||
ret=1
+ $KEYDELETE -r $RANDFILE $keyname || ret=1
if [ $ret != 0 ]; then
echo_i "failed"
fi
@@ -79,7 +79,7 @@ done

echo_i "creating new key using owner name bar.example. ($n)"
ret=0
-keyname=`$KEYCREATE $dhkeyname bar.example.` || ret=1
+keyname=`$KEYCREATE -r $RANDFILE $dhkeyname bar.example.` || ret=1
if [ $ret != 0 ]; then
echo_i "failed"
status=$((status+ret))
@@ -124,7 +124,7 @@ n=$((n+1))

echo_i "recreating the bar.example. key ($n)"
ret=0
-keyname=`$KEYCREATE $dhkeyname bar.example.` || ret=1
+keyname=`$KEYCREATE -r $RANDFILE $dhkeyname bar.example.` || ret=1
if [ $ret != 0 ]; then
echo_i "failed"
status=$((status+ret))
diff --git a/bin/tools/mdig.c b/bin/tools/mdig.c
index 26fa609..fb34aa0 100644
--- a/bin/tools/mdig.c
+++ b/bin/tools/mdig.c
@@ -2005,12 +2005,11 @@ main(int argc, char *argv[]) {

ectx = NULL;
RUNCHECK(isc_entropy_create(mctx, &ectx));
+ RUNCHECK(dst_lib_init(mctx, ectx, ISC_ENTROPY_GOODONLY));
RUNCHECK(isc_hash_create(mctx,
ectx, DNS_NAME_MAXWIRE));
RUNCHECK(isc_entropy_getdata(ectx, cookie_secret,
sizeof(cookie_secret), NULL, 0));

- RUNCHECK(dst_lib_init(mctx, ectx, ISC_ENTROPY_GOODONLY));
-
ISC_LIST_INIT(queries);
parse_args(false, argc, argv);
if (server == NULL)

```

```

diff --git a/configure b/configure
index 368112f..e060e9d 100755
--- a/configure
+++ b/configure
@@ -640,6 +640,7 @@ ac_includes_default="\

ac_subst_vars=LTLIBOBJS
LIBOBJS
+LIBDIR_SUFFIX
BUILD_LIBS
BUILD_LDFLAGS
BUILD_CPPFLAGS
@@ -822,6 +823,7 @@ LIBXML2_CFLAGS
NZDTARGETS
NZDSRCS
NZD_TOOLS
+ISC_PLATFORM_CRYPTORANDOM
PKCS11_TEST
PKCS11_ED25519
PKCS11_GOST
@@ -1046,6 +1048,7 @@ with_eddsa
with_aes
enable_openssl_hash
with_cc_alg
+enable_crypto_rand
with_lmdb
with_libxml2
with_libjson
@@ -1747,6 +1750,7 @@ Optional Features:
--enable-threads    enable multithreading
--enable-native-pkcs11 use native PKCS11 for all crypto [default=no]
--enable-openssl-hash use OpenSSL for hash functions
[default=no]
+ --enable-crypto-rand use the crypto provider for random [default=yes]
--enable-largefile  64-bit file support
--enable-backtrace  log stack backtrace on abort [default=yes]
--enable-symtable   use internal symbol table for backtrace
@@ -17204,6 +17208,7 @@ case "$use_openssl" in
$as_echo "disabled because of native PKCS11" >&&6; }
  DST_OPENSSL_INC=""
  CRYPTO="-DPKCS11CRYPTO"
+ CRYPTOLIB="pkcs11"
  OPENSSECDALINKOBS=""
  OPENSSECDALINKSRCS=""
  OPENSSEDDALINKOBS=""
@@ -17218,6 +17223,7 @@ $as_echo "disabled because of native PKCS11" >&&6; }
$as_echo "no" >&&6; }
  DST_OPENSSL_INC=""

```

```

CRYPTO=""
+ CRYPTOLIB=""
OPENSLECDALINKOBS=""
OPENSLECDALINKSRCS=""
OPENSLEDDALINKOBS=""
@@ -17230,6 +17236,7 @@ $as_echo "no" >&6; }
auto)
DST_OPENSSL_INC=""
CRYPTO=""
+ CRYPTOLIB=""
OPENSLECDALINKOBS=""
OPENSLECDALINKSRCS=""
OPENSLEDDALINKOBS=""
@@ -17239,7 +17246,7 @@ $as_echo "no" >&6; }
OPENSLLINKOBS=""
OPENSLLINKSRCS=""
as_fn_error $? "OpenSSL was not found in any of $openssldirs; use --with-openssl=/path
-If you don't want OpenSSL, use --without-openssl" "$LINENO" 5
+If you do not want OpenSSL, use --without-openssl" "$LINENO" 5
;;
*)
if test "yes" = "$want_native_pkcs11"
@@ -17270,6 +17277,7 @@ $as_echo "not found" >&6; }
as_fn_error $? "\"$use_openssl/include/openssl/opensslv.h\" not found" "$LINENO" 5
fi
CRYPTO='-DOPENSSL'
+ CRYPTOLIB="openssl"
if test "/usr" = "$use_openssl"
then
DST_OPENSSL_INC=""
@@ -17904,8 +17912,6 @@ fi
# Use OpenSSL for hash functions
#

-{$as_echo "$as_me:${as_lineno-$LINENO}: checking for using OpenSSL for hash functions" >&5
-$as_echo_n "checking for using OpenSSL for hash functions... " >&6; }
ISC_PLATFORM_OPENSSLHASH="#undef ISC_PLATFORM_OPENSSLHASH"
case $want_openssl_hash in
yes)
@@ -18280,6 +18286,86 @@ if test "rt" = "$have_clock_gt"; then
LIBS="-lrt $LIBS"
fi

+#
+# Use the crypto provider
+# (OpenSSL/PKCS#11) for random functions
+#
+

```



```

+{ $as_echo "$as_me:${as_lineno-$LINENO}: checking for using the crypto library (vs. builtin) for random
functions" >&5
+$as_echo_n "checking for using the crypto library (vs. builtin) for random functions... " >&6; }
+# Check whether --enable-crypto-rand was given.
+if test "${enable_crypto_rand+set}" = set; then :
+ enableval=$enable_crypto_rand; want_crypto_rand="$enableval"
+else
+ want_crypto_rand="auto"
+fi
+
+if test "$want_crypto_rand" = "auto"
+then
+ case "$CRYPTOLIB" in
+ "")
+ want_crypto_rand="no"
+ ;;
+ pkcs11)
+ want_crypto_rand="yes"
+ ;;
+ openssl)
+ saved_cflags="$CFLAGS"
+ saved_libs="$LIBS"
+ CFLAGS="$CFLAGS $DST_OPENSSL_INC"
+ LIBS="$LIBS $DST_OPENSSL_LIBS"
+ if test "$cross_compiling" = yes; then :
+ want_crypto_rand="yes"
+else
+ cat confdefs.h - <<_ACEOF >conftest.$ac_ext
+/* end confdefs.h. */
+
+#include <openssl/rand.h>
+
+unsigned char buf[128];
+
+int main()
+{
+ if (RAND_bytes(buf, 128) != 1)
+ return
+ (1);
+ return (0);
+}
+_ACEOF
+if ac_fn_c_try_run "$LINENO"; then :
+ want_crypto_rand="yes"
+else
+ want_crypto_rand="no"
+fi

```

```

+rm -f core *.core core.conftest.* gmon.out bb.out conftest$sac_exeext \
+ conftest.$sac_objext conftest.beam conftest.$sac_ext
+fi
+
+ CFLAGS="$saved_cflags"
+ LIBS="$saved_libs"
+ ;;
+ *)
+ as_fn_error $? "Unknown crypto library define $CRYPTOLIB" "$LINENO" 5
+ ;;
+ esac
+fi
+case $want_crypto_rand in
+ yes)
+ if test "$CRYPTOLIB" = ""
+ then
+ as_fn_error $? "No crypto library for random functions" "$LINENO" 5
+ fi
+ { $as_echo "$as_me:${as_lineno-$LINENO}: result: \"$CRYPTOLIB\"" >&5
+$as_echo "\"$CRYPTOLIB\"" >&6; }
+ ISC_PLATFORM_CRYPTORANDOM="#define ISC_PLATFORM_CRYPTORANDOM \"$CRYPTOLIB\""
+ ;;
+ no)
+ { $as_echo "$as_me:${as_lineno-$LINENO}: result: no" >&5
+$as_echo "no" >&6; }
+ ISC_PLATFORM_CRYPTORANDOM="#undef ISC_PLATFORM_CRYPTORANDOM"
+ ;;
+esac
+
+
+#
# was --with-lmdb specified?
#
@@ -20556,9 +20642,12 @@ _ACEOF
if ac_fn_c_try_compile
"$LINENO"; then :
{ $as_echo "$as_me:${as_lineno-$LINENO}: result: size_t for buflen; int for flags" >&5
$as_echo "size_t for buflen; int for flags" >&6; }
- $as_echo "#define IRS_GETNAMEINFO_SOCKLEN_T size_t" >>confdefs.h
+ # Changed to solve multilib conflict on Fedora
+ # AC_DEFINE(IRS_GETNAMEINFO_SOCKLEN_T, size_t)
+ # AC_DEFINE(IRS_GETNAMEINFO_BUFLLEN_T, size_t)
+ $as_echo "#define IRS_GETNAMEINFO_SOCKLEN_T socklen_t" >>confdefs.h

- $as_echo "#define IRS_GETNAMEINFO_BUFLLEN_T size_t" >>confdefs.h
+ $as_echo "#define IRS_GETNAMEINFO_BUFLLEN_T socklen_t" >>confdefs.h

$as_echo "#define IRS_GETNAMEINFO_FLAGS_T int" >>confdefs.h

```

```

@@ -21856,12 +21945,7 @@ ISC_PLATFORM_USEGCCASM="#undef ISC_PLATFORM_USEGCCASM"
ISC_PLATFORM_USESTDASM="#undef ISC_PLATFORM_USESTDASM"
ISC_PLATFORM_USEMACASM="#undef ISC_PLATFORM_USEMACASM"
if test "yes" = "$use_atomic"; then
- have_atomic=yes # set default
- case "$host" in
- i[3456]86-*)
- # XXX: some old x86 architectures
  actually do not support
- #   (some of) these operations. Do we need stricter checks?
- # The cast to long int works around a bug in the HP C Compiler
+ # The cast to long int works around a bug in the HP C Compiler
# version HP92453-01 B.11.11.23709.GP, which incorrectly rejects
# declarations like `int a3[[(sizeof (unsigned char)) >= 0]]';
# This bug is HP SR number 8606223364.
@@ -21894,6 +21978,11 @@ cat >>confdefs.h <<_ACEOF
_ACEOF

```

```

+ have_atomic=yes # set default
+ case "$host" in
+ i[3456]86-*)
+ # XXX: some old x86 architectures actually do not support
+ #   (some of) these operations. Do we need stricter checks?
  if test $ac_cv_sizeof_void_p = 8; then
    arch=x86_64
    have_xaddq=yes
@@ -21902,39 +21991,6 @@ _ACEOF
fi
;;
x86_64-*)amd64-*)
- # The cast to long int works around a bug in the HP C Compiler
-# version HP92453-01 B.11.11.23709.GP, which incorrectly rejects
-# declarations like `int a3[[(sizeof (unsigned char)) >= 0]]';
-# This bug
  is HP SR number 8606223364.
- { $as_echo "$as_me:${as_lineno-$LINENO}: checking size of void *" >&5
- $as_echo_n "checking size of void *... " >&6; }
- if $ac_cv_sizeof_void_p+:} false; then :
- $as_echo_n "(cached) " >&6
- else
- if ac_fn_c_compute_int "$LINENO" "(long int) (sizeof (void *))" "ac_cv_sizeof_void_p"
"$ac_includes_default"; then :
-
- else
- if test "$ac_cv_type_void_p" = yes; then
- { { $as_echo "$as_me:${as_lineno-$LINENO}: error: in `\$ac_pwd':" >&5

```

```

-$as_echo "$as_me: error: in ` $ac_pwd':" >&2;}
-as_fn_error 77 "cannot compute sizeof (void *)"
-See `config.log' for more details" "$LINENO" 5; }
- else
-   ac_cv_sizeof_void_p=0
- fi
-fi
-
-fi
-{$as_echo "$as_me:${as_lineno-$LINENO}: result: $ac_cv_sizeof_void_p" >&5
-$as_echo "$ac_cv_sizeof_void_p" >&6; }
-
-
-
-cat >>confdefs.h <<_ACEOF
-#define SIZEOF_VOID_P $ac_cv_sizeof_void_p
-_ACEOF
-
-
-   if test $ac_cv_sizeof_void_p = 8; then
-       arch=x86_64
-       have_xaddq=yes
-@@ -21965,6 +22021,10 @@ $as_echo_n
-   "checking architecture type for atomic operations... " >&6; }
-$as_echo "$arch" >&6; }
-fi

+if test ! "$arch" = "x86_64" -a "$have_xaddq" = "yes"; then
+ as_fn_error $? "XADDQ present but disabled by Fedora patch!" "$LINENO" 5
+fi
+
+
+if test "yes" = "$have_atomic"; then
+ { $as_echo "$as_me:${as_lineno-$LINENO}: checking compiler support for inline assembly code" >&5
+$as_echo_n "checking compiler support for inline assembly code... " >&6; }
+@@ -24547,6 +24607,30 @@ CFLAGS="$CFLAGS $SO_CFLAGS"
+#
+dlzdir='${DLZ_DRIVER_DIR}'

+{ $as_echo "$as_me:${as_lineno-$LINENO}: checking for target libdir" >&5
+$as_echo_n "checking for target libdir... " >&6; }
+if test "$cross_compiling" = yes; then :
+ { { $as_echo "$as_me:${as_lineno-$LINENO}: error: in ` $ac_pwd':" >&5
+$as_echo "$as_me: error: in ` $ac_pwd':" >&2;}
+as_fn_error $? "cannot run test program while cross compiling
+See `config.log' for more details" "$LINENO" 5; }
+else
+ cat confdefs.h - <<_ACEOF >conftest.$ac_ext
+/* end

```

```

confdefs.h. */
+int main(void) {exit((sizeof(void *) == 8) ? 0 : 1);}
+_ACEOF
+if ac_fn_c_try_run "$LINENO"; then :
+ target_lib=lib64
+else
+ target_lib=lib
+fi
+rm -f core *.core core.conftest.* gmon.out bb.out conftest$ac_exeext \
+ conftest.$ac_objext conftest.beam conftest.$ac_ext
+fi
+
+{ $as_echo "$as_me:${as_lineno-$LINENO}: result: \"$target_lib\"" >&5
+$as_echo "\"$target_lib\"" >&6; }
+
#
# Private autoconf macro to simplify configuring drivers:
#
@@ -24877,11 +24961,11 @@ $as_echo "no" >&6; }
$as_echo "using mysql with libs ${mysql_lib} and includes ${mysql_include}" >&6; }
;;
*)
- if test -d "$use_dlz_mysql/lib/mysql"
+ if test -d $use_dlz_mysql/${target_lib}/mysql
then
- mysql_lib="$use_dlz_mysql/lib/mysql"
+ mysql_lib=$use_dlz_mysql/${target_lib}/mysql
else
- mysql_lib="$use_dlz_mysql/lib"
+ mysql_lib=$use_dlz_mysql/${target_lib}
fi

CONTRIB_DLZ="$CONTRIB_DLZ -DDLZ_MYSQL"
@@ -24966,7 +25050,7 @@ $as_echo "" >&6; }
# Check other locations
for includes.
# Order is important (sigh).

- bdb_incdirs="/db53 /db51 /db48 /db47 /db46 /db45 /db44 /db43 /db42 /db41 /db4 /db"
+ bdb_incdirs="/db53 /db51 /db48 /db47 /db46 /db45 /db44 /db43 /db42 /db41 /db4 /libdb /db"
# include a blank element first
for d in "" $bdb_incdirs
do
@@ -24991,57 +25075,9 @@ $as_echo "" >&6; }
bdb_libnames="db53 db-5.3 db51 db-5.1 db48 db-4.8 db47 db-4.7 db46 db-4.6 db45 db-4.5 db44 db-4.4 db43 db-
4.3 db42 db-4.2 db41 db-4.1 db"
for d in $bdb_libnames
do

```

```

- if test "$dd" = "/usr"
- then
-   as_ac_Lib=`$as_echo "ac_cv_lib_$d"_db_create" | $as_tr_sh`
-{$ as_echo "$as_me:${as_lineno-$LINENO}: checking for db_create in -l$d" >&5
-$as_echo_n "checking for db_create in -l$d... " >&6; }
-if eval `:${as_ac_Lib+:} false; then :
- $as_echo_n "(cached) " >&6
-else
- ac_check_lib_save_LIBS=$LIBS
-LIBS="-l$d $LIBS"
-cat confdefs.h - <<_ACEOF >conftest.$ac_ext
-/* end confdefs.h. */
-
-/* Override any GCC internal prototype
to avoid an error.
- Use char because int might match the return type of a GCC
- builtin and then its argument prototype would still apply. */
-#ifdef __cplusplus
-extern "C"
-#endif
-char db_create ();
-int
-main ()
- {
- return db_create ();
- ;
- return 0;
- }
- _ACEOF
-if ac_fn_c_try_link "$LINENO"; then :
- eval "$as_ac_Lib=yes"
-else
- eval "$as_ac_Lib=no"
-fi
-rm -f core conftest.err conftest.$ac_objext \
- conftest$ac_exeext conftest.$ac_ext
-LIBS=$ac_check_lib_save_LIBS
-fi
-eval ac_res=\${$as_ac_Lib}
- { $as_echo "$as_me:${as_lineno-$LINENO}: result: $ac_res" >&5
-$as_echo "$ac_res" >&6; }
-if eval test `:"x"$as_ac_Lib` = "x"yes"; then :
- dlz_bdb_libs="-l${d}"
-fi
-
- if test $dlz_bdb_libs != "yes"
- then
- break

```

```

- fi
- elif test -f "$dd/lib/lib${d}.so"
+ if test -f "$dd/${target_lib}/lib${d}.so"
  then
- dlz_bdb_libs="-L${dd}/lib -l${d}"
+ dlz_bdb_libs="-L${dd}/${target_lib}/libdb -l${d}"
  break
  fi
done
@@
-25200,10 +25236,10 @@ $as_echo "no" >&6; }
DLZ_DRIVER_INCLUDES="$DLZ_DRIVER_INCLUDES -I$use_dlz_ldap/include"
DLZ_DRIVER_LDAP_INCLUDES="-I$use_dlz_ldap/include"
fi
- if test -n "-L$use_dlz_ldap/lib -lldap -llber"
+ if test -n "-L$use_dlz_ldap/${target_lib} -lldap -llber"
  then
- DLZ_DRIVER_LIBS="$DLZ_DRIVER_LIBS -L$use_dlz_ldap/lib -lldap -llber"
- DLZ_DRIVER_LDAP_LIBS="-L$use_dlz_ldap/lib -lldap -llber"
+ DLZ_DRIVER_LIBS="$DLZ_DRIVER_LIBS -L$use_dlz_ldap/${target_lib} -lldap -llber"
+ DLZ_DRIVER_LDAP_LIBS="-L$use_dlz_ldap/${target_lib} -lldap -llber"
  fi

@@ -25289,11 +25325,11 @@ fi
odbcdirs="/usr /usr/local /usr/pkg"
for d in $odbcdirs
do
- if test -f $d/include/sql.h -a -f $d/lib/libodbc.a
+ if test -f $d/include/sql.h -a -f $d/${target_lib}/libodbc.a
  then
  use_dlz_odbc=$d
  dlz_odbc_include="-I$use_dlz_odbc/include"
- dlz_odbc_libs="-L$use_dlz_odbc/lib -lodbc"
+ dlz_odbc_libs="-L$use_dlz_odbc/${target_lib} -lodbc"
  break
  fi
done
@@ -25568,6 +25604,8 @@ DNS_CRYPTO_LIBS="$NEWFLAGS"

+
+
#
# Commands to run at the end of config.status.
# Don't just put these into configure, it won't work right if somebody
@@ -27946,6 +27984,8 @@ report() {

```

```

    echo " IPv6 support (--enable-ipv6)"
test "X$CRYPTO" = "X" -o "yes" = "$want_native_pkcs11" || \
    echo " OpenSSL cryptography/DNSSEC (--with-openssl)"
+   test "no" = "$want_crypto_rand" || \
+       echo " Crypto provider entropy source (--enable-crypto-rand)"
test "X$PYTHON" = "X" || echo " Python tools (--with-python)"
test "X$XMLSTATS" = "X" || echo " XML statistics (--with-libxml2)"
test "X$JSONSTATS" = "X" || echo " JSON statistics (--with-libjson)"
@@ -27986,6 +28026,8 @@ report() {
    echo " Very verbose query trace logging (--enable-querytrace)"
    test "no" = "$with_cmocka" || echo " CMocka Unit Testing Framework (--with-cmocka)"

+   echo " Cryptographic library for DNSSEC: $CRYPTOLIB"
+
    echo " Dynamically loadable zone (DLZ) drivers:"
    test "no" = "$use_dlz_bdb" || \
    echo " Berkeley DB (--with-dlz-bdb)"
@@ -28033,6 +28075,8 @@ report() {
    echo " ECDSA algorithm support (--with-ecdsa)"
    test "X$CRYPTO" = "X" -o "yes" = "$OPENSSL_ED25519" -o "yes" = "$PKCS11_ED25519" || \
    echo " EDDSA algorithm support (--with-eddsa)"
+   test "yes" = "$want_crypto_rand" || \
+       echo " Crypto provider entropy source (--enable-crypto-rand)"

    test "yes" = "$enable_seccomp" || \
    echo " Use libseccomp system call filtering (--enable-seccomp)"
diff --git a/configure.ac b/configure.ac
index 11f41e8..fdcf62 100644
--- a/configure.ac
+++ b/configure.ac
@@ -1600,6 +1600,7 @@ case "$use_openssl" in
    AC_MSG_RESULT(disabled because of native PKCS11)
    DST_OPENSSL_INC=""
    CRYPTO="-DPKCS11CRYPTO"
+   CRYPTOLIB="pkcs11"
    OPENSSLECDALINKOBS=""
    OPENSSLECDALINKSRCS=""
    OPENSSLEDDALINKOBS=""
@@ -1613,6 +1614,7 @@ case "$use_openssl" in
    AC_MSG_RESULT(no)
    DST_OPENSSL_INC=""
    CRYPTO=""
+   CRYPTOLIB=""
    OPENSSLECDALINKOBS=""
    OPENSSLECDALINKSRCS=""
    OPENSSLEDDALINKOBS=""
@@ -1625,6 +1627,7 @@ case "$use_openssl" in

```



```

auto)
DST_OPENSSL_INC=""
CRYPTO=""
+ CRYPTOLIB=""
OPENSSLECDALINKOBS=""
OPENSSLECDALINKSRCS=""
OPENSSLEDDALINKOBS=""
@@ -1635,7 +1638,7 @@ case "$use_openssl" in
OPENSSLINKSRCS=""
AC_MSG_ERROR(
[OpenSSL was not found in any of $openssl_dirs; use --with-openssl=/path
-If you don't want OpenSSL, use --without-openssl])
+If you do not want OpenSSL, use --without-openssl])
;;
*)
if test "yes" = "$want_native_pkcs11"
@@ -1665,6 +1668,7 @@ If you don't want OpenSSL, use --without-openssl])
AC_MSG_ERROR(["$use_openssl/include/openssl/opensslv.h" not found])
fi
CRYPTO='-DOPENSSL'
+ CRYPTOLIB="openssl"
if test "/usr" = "$use_openssl"
then
DST_OPENSSL_INC=""
@@ -2109,7 +2113,6 @@ fi
# Use OpenSSL for hash functions
#

-AC_MSG_CHECKING(for using
OpenSSL for hash functions)
ISC_PLATFORM_OPENSSLHASH="#undef ISC_PLATFORM_OPENSSLHASH"
case $want_openssl_hash in
yes)
@@ -2381,6 +2384,67 @@ if test "rt" = "$have_clock_gt"; then
LIBS="-lrt $LIBS"
fi

+#
+# Use the crypto provider (OpenSSL/PKCS#11) for random functions
+#
+
+AC_MSG_CHECKING(for using the crypto library (vs. builtin) for random functions)
+AC_ARG_ENABLE(crypto-rand,
+ [ --enable-crypto-rand use the crypto provider for random [[default=yes]],
+ want_crypto_rand="$enableval", want_crypto_rand="auto")
+if test "$want_crypto_rand" = "auto"
+then
+ case "$CRYPTOLIB" in

```

```

+ "")
+ want_crypto_rand="no"
+ ;;
+ pkcs11)
+ want_crypto_rand="yes"
+ ;;
+ openssl)
+ saved_cflags="$CFLAGS"
+ saved_libs="$LIBS"
+ CFLAGS="$CFLAGS $DST_OPENSSL_INC"
+ LIBS="$LIBS $DST_OPENSSL_LIBS"
+ AC_TRY_RUN([
+#include <openssl/rand.h>
+
+unsigned char buf[128];
+
+int main()
+{
+ if (RAND_bytes(buf, 128) != 1)
+ return (1);
+ return (0);
+}
+],
+ [want_crypto_rand="yes"],
+ [want_crypto_rand="no"],
+ [want_crypto_rand="yes"])
+ CFLAGS="$saved_cflags"
+ LIBS="$saved_libs"
+ ;;
+ *)
+ AC_MSG_ERROR([Unknown
crypto library define $CRYPTOLIB])
+ ;;
+ esac
+fi
+case $want_crypto_rand in
+ yes)
+ if test "$CRYPTOLIB" = ""
+ then
+ AC_MSG_ERROR([No crypto library for random functions])
+ fi
+ AC_MSG_RESULT(["$CRYPTOLIB"])
+ ISC_PLATFORM_CRYPTORANDOM="#define ISC_PLATFORM_CRYPTORANDOM \"$CRYPTOLIB\""
+ ;;
+ no)
+ AC_MSG_RESULT(no)
+ ISC_PLATFORM_CRYPTORANDOM="#undef ISC_PLATFORM_CRYPTORANDOM"
+ ;;

```

```

+esac
+AC_SUBST(ISC_PLATFORM_CRYPTORANDOM)
+
#
# was --with-lmdb specified?
#
@@ -4174,12 +4238,12 @@ ISC_PLATFORM_USEGCCASM="#undef ISC_PLATFORM_USEGCCASM"
ISC_PLATFORM_USESTDASM="#undef ISC_PLATFORM_USESTDASM"
ISC_PLATFORM_USEMACASM="#undef ISC_PLATFORM_USEMACASM"
if test "yes" = "$use_atomic"; then
+ AC_CHECK_SIZEOF([void *])
have_atomic=yes # set default
case "$host" in
[i[3456]86-]*)
# XXX: some old x86 architectures actually do not
support
# (some of) these operations. Do we need stricter checks?
- AC_CHECK_SIZEOF([void *])
if test $ac_cv_sizeof_void_p = 8; then
arch=x86_64
have_xaddq=yes
@@ -4188,7 +4252,6 @@ if test "yes" = "$use_atomic"; then
fi
;;
x86_64-*|amd64-*)
- AC_CHECK_SIZEOF([void *])
if test $ac_cv_sizeof_void_p = 8; then
arch=x86_64
have_xaddq=yes
@@ -5622,6 +5685,8 @@ report() {
echo " IPv6 support (--enable-ipv6)"
test "X$CRYPTO" = "X" -o "yes" = "$want_native_pkcs11" || \
echo " OpenSSL cryptography/DNSSEC (--with-openssl)"
+ test "no" = "$want_crypto_rand" || \
+ echo " Crypto provider entropy source (--enable-crypto-rand)"
test "X$PYTHON" = "X" || echo " Python tools (--with-python)"
test "X$XMLSTATS" = "X" || echo " XML statistics (--with-libxml2)"
test "X$JSONSTATS" = "X" || echo " JSON statistics (--with-libjson)"
@@ -5662,6 +5727,8 @@ report() {
echo " Very verbose query trace logging (--enable-querytrace)"
test "no" = "$with_cmocka" || echo " CMocka Unit Testing Framework (--with-cmocka)"

+ echo " Cryptographic library for DNSSEC: $CRYPTOLIB"
+
echo " Dynamically loadable zone (DLZ) drivers:"
test "no" = "$use_dlz_bdb" || \
echo " Berkeley DB (--with-dlz-bdb)"
@@ -5709,6 +5776,8 @@ report() {

```

```

echo " ECDSA algorithm support (--with-ecdsa)"
test "X$CRYPTO" = "X" -o "yes" = "$OPENSSL_ED25519" -o "yes" = "$PKCS11_ED25519" || \
echo " EDDSA algorithm support (--with-eddsa)"
+ test "yes" = "$want_crypto_rand" || \
+ echo " Crypto provider entropy source (--enable-crypto-rand)"

test "yes" = "$enable_seccomp" || \
echo " Use libseccomp system call filtering (--enable-seccomp)"
diff --git a/lib/dns/dst_api.c b/lib/dns/dst_api.c
index 7a86506..aa54afc 100644
--- a/lib/dns/dst_api.c
+++ b/lib/dns/dst_api.c
@@ -277,6+277,12 @@ dst_lib_init2(isc_mem_t *mctx, isc_entropy_t *ectx,
#ifdef GSSAPI
RETERR(dst__gssapi_init(&dst_t_func[DST_ALG_GSSAPI]));
#endif
+#if defined(OPENSSL) || defined(PKCS11CRYPTO)
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (dst_entropy_pool != NULL)
+ isc_entropy_sethook(dst_random_getdata);
+#endif
+#endif /* defined(OPENSSL) || defined(PKCS11CRYPTO) */
dst_initialized = true;
return (ISC_R_SUCCESS);

@@ -296,11+302,19 @@ dst_lib_destroy(void) {
for (i = 0; i < DST_MAX_ALGS; i++)
if (dst_t_func[i] != NULL && dst_t_func[i]->cleanup != NULL)
dst_t_func[i]->cleanup();
+#if defined(OPENSSL) || defined(PKCS11CRYPTO)
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ if (dst_entropy_pool != NULL) {
+ isc_entropy_usehook(dst_entropy_pool, false);
+ isc_entropy_sethook(NULL);
+ }
+#endif
#ifdef OPENSSL
dst__openssl_destroy();
#elif PKCS11CRYPTO
(void) dst__pkcs11_destroy();
#endif /* if OPENSSL, elif PKCS11CRYPTO */
+#endif /* defined(OPENSSL) || defined(PKCS11CRYPTO) */
if (dst__memory_pool != NULL)
isc_mem_detach(&dst__memory_pool);
if (dst_entropy_pool
!= NULL)
@@ -2002,13+2016,17 @@ dst__entropy_getdata(void *buf, unsigned int len, bool pseudo) {
flags &= ~ISC_ENTROPY_GOODONLY;

```

```

else
    flags |= ISC_ENTROPY_BLOCKING;
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ return (dst_random_getdata(buf, len, NULL, flags));
+#else
    return (isc_entropy_getdata(dst_entropy_pool, buf, len, NULL, flags));
+#endif
#endif /* PKCS11CRYPTO */
}

unsigned int
dst__entropy_status(void) {
-#ifndef PKCS11CRYPTO
+#if !defined(PKCS11CRYPTO) && !defined(ISC_PLATFORM_CRYPTORANDOM)
#ifdef GSSAPI
    unsigned int flags = dst_entropy_flags;
    isc_result_t ret;
    @@ -2031,6 +2049,7 @@ dst__entropy_status(void) {
#endif
    return (isc_entropy_status(dst_entropy_pool));
#else
+ /* Doesn't matter as it is not used in this case. */
    return (0);
#endif
}
diff --git a/lib/dns/include/dst/dst.h b/lib/dns/include/dst/dst.h
index 5b42ab4..3aba028 100644
--- a/lib/dns/include/dst/dst.h
+++ b/lib/dns/include/dst/dst.h
@@ -159,6 +159,14 @@ dst_lib_destroy(void);
* Releases
all resources allocated by DST.
*/

+isc_result_t
+dst_random_getdata(void *data, unsigned int length,
+ unsigned int *returned, unsigned int flags);
+/*%<
+ * \brief Return data from the crypto random generator.
+ * Specialization of isc_entropy_getdata().
+ */
+
+bool
dst_algorithm_supported(unsigned int alg);
/*%<
diff --git a/lib/dns/lib.c b/lib/dns/lib.c
index d9417de..0dc935d 100644
--- a/lib/dns/lib.c

```

```

+++ b/lib/dns/lib.c
@@ -16,6 +16,7 @@
#include <stdbool.h>
#include <stddef.h>

+#include <isc/entropy.h>
#include <isc/hash.h>
#include <isc/mem.h>
#include <isc/msgcat.h>
@@ -76,6 +77,7 @@ static unsigned int references = 0;
static void
initialize(void) {
isc_result_t result;
+ isc_entropy_t *ectx = NULL;

    REQUIRE(initialize_done == false);

@@ -86,11 +88,14 @@ initialize(void) {
    result = dns_ecdb_register(dns_g_mctx, &dbimp);
    if (result != ISC_R_SUCCESS)
        goto cleanup_mctx;
- result = isc_hash_create(dns_g_mctx, NULL, DNS_NAME_MAXWIRE);
+ result
    = isc_entropy_create(dns_g_mctx, &ectx);
    if (result != ISC_R_SUCCESS)
        goto cleanup_db;
+ result = isc_hash_create(dns_g_mctx, NULL, DNS_NAME_MAXWIRE);
+ if (result != ISC_R_SUCCESS)
+     goto cleanup_ectx;

- result = dst_lib_init(dns_g_mctx, NULL, 0);
+ result = dst_lib_init(dns_g_mctx, ectx, 0);
    if (result != ISC_R_SUCCESS)
        goto cleanup_hash;

@@ -98,11 +103,17 @@ initialize(void) {
    if (result != ISC_R_SUCCESS)
        goto cleanup_dst;

+ isc_hash_init();
+ isc_entropy_detach(&ectx);
+
    initialize_done = true;
    return;

    cleanup_dst:
    dst_lib_destroy();
+ cleanup_ectx:

```

```

+ if (ectx != NULL)
+ isc_entropy_detach(&ectx);
  cleanup_hash:
isc_hash_destroy();
  cleanup_db:
diff --git a/lib/dns/openssl_link.c b/lib/dns/openssl_link.c
index 1e57c71..3f4f822 100644
--- a/lib/dns/openssl_link.c
+++ b/lib/dns/openssl_link.c
@@ -31,6 +31,7 @@
#include <isc/mem.h>
#include <isc/mutex.h>
#include <isc/mutexblock.h>
+#include <isc/platform.h>
#include <isc/string.h>
#include
  <isc/thread.h>
#include <isc/util.h>
@@ -46,8 +47,6 @@
#include <openssl/engine.h>
#endif

-static RAND_METHOD *rm = NULL;
-
#if OPENSSSL_VERSION_NUMBER < 0x10100000L || defined(LIBRESSL_VERSION_NUMBER)
static isc_mutex_t *locks = NULL;
static int nlocks;
@@ -57,6 +56,9 @@ static int nlocks;
static ENGINE *e = NULL;
#endif

+#ifndef ISC_PLATFORM_CRYPTORANDOM
+static RAND_METHOD *rm = NULL;
+
static int
entropy_get(unsigned char *buf, int num) {
  isc_result_t result;
@@ -102,6 +104,7 @@ entropy_add(const void *buf, int num, double entropy) {
  return (1);
}
#endif
+#endif /* !ISC_PLATFORM_CRYPTORANDOM */

#if OPENSSSL_VERSION_NUMBER < 0x10100000L || defined(LIBRESSL_VERSION_NUMBER)
static void
@@ -192,7 +195,7 @@ _set_thread_id(CRYPTO_THREADID *id)
isc_result_t
dst__openssl_init(const char *engine) {

```

```

isc_result_t result;
#ifndef !defined(OPENSSSL_NO_ENGINE)
+#if !defined(OPENSSSL_NO_ENGINE) && !defined(ISC_PLATFORM_CRYPTORANDOM)
ENGINE *re;
#else
UNUSED(engine);
@@
-222,6 +225,7 @@ dst__openssl_init(const char *engine) {
ERR_load_crypto_strings();
#endif

+#ifndef ISC_PLATFORM_CRYPTORANDOM
rm = mem_alloc(sizeof(RAND_METHOD) FILELINE);
if (rm == NULL) {
result = ISC_R_NOMEMORY;
@@ -233,6 +237,7 @@ dst__openssl_init(const char *engine) {
rm->add = entropy_add;
rm->pseudorand = entropy_getpseudo;
rm->status = entropy_status;
+#endif

#if !defined(OPENSSSL_NO_ENGINE)
#if !defined(CONF_MFLAGS_DEFAULT_SECTION)
@@ -266,6 +271,7 @@ dst__openssl_init(const char *engine) {
}
}

+#ifndef ISC_PLATFORM_CRYPTORANDOM
re = ENGINE_get_default_RAND();
if (re == NULL) {
re = ENGINE_new();
@@ -278,9 +284,21 @@ dst__openssl_init(const char *engine) {
ENGINE_free(re);
} else
ENGINE_finish(re);
+#endif
#else
+#ifndef ISC_PLATFORM_CRYPTORANDOM
RAND_set_rand_method(rm);
+#endif
#endif /* !defined(OPENSSSL_NO_ENGINE) */
+
+ /* Protect ourselves against unseeded PRNG */
+ if (RAND_status() != 1) {
+ FATAL_ERROR(__FILE__, __LINE__,
+
+ "OpenSSL pseudorandom number generator "
+ "cannot be initialized (see the `PRNG not "

```



```

+   "seeded' message in the OpenSSL FAQ");
+ }
+
return (ISC_R_SUCCESS);

#if !defined(OPENSSSL_NO_ENGINE)
@@ -288,10 +306,14 @@ dst__openssl_init(const char *engine) {
if (e != NULL)
ENGINE_free(e);
e = NULL;
+#ifndef ISC_PLATFORM_CRYPTORANDOM
mem_free(rm FILELINE);
rm = NULL;
#endif
+#endif
+#ifndef ISC_PLATFORM_CRYPTORANDOM
cleanup_mutexinit;
+#endif
#if OPENSSSL_VERSION_NUMBER < 0x10100000L || defined(LIBRESSL_VERSION_NUMBER)
CRYPTO_set_locking_callback(NULL);
DESTROYMUTEXBLOCK(locks, nlocks);
@@ -306,14 +328,17 @@ void
dst__openssl_destroy(void) {
#if !defined(LIBRESSL_VERSION_NUMBER) && (OPENSSSL_VERSION_NUMBER >= 0x10100000L)
OPENSSSL_cleanup();
+#ifndef ISC_PLATFORM_CRYPTORANDOM
if (rm != NULL) {
mem_free(rm FILELINE);
rm = NULL;
}
+#endif
#else
/*
* Sequence taken from apps_shutdown() in <apps/apps.h>.
*/
+#ifndef ISC_PLATFORM_CRYPTORANDOM
if (rm != NULL) {
#if OPENSSSL_VERSION_NUMBER >= 0x00907000L
RAND_cleanup();
@@ -321,6 +346,7 @@ dst__openssl_destroy(void) {
mem_free(rm FILELINE);
rm = NULL;
}
+#endif
#if (OPENSSSL_VERSION_NUMBER >= 0x00907000L)
CONF_modules_free();
#endif
@@ -456,11 +482,45 @@ dst__openssl_getengine(const char *engine) {

```

```

}
#endif

-#else /* OPENSSSL */
+isc_result_t
+dst_random_getdata(void *data, unsigned int length,
+ unsigned int *returned, unsigned int flags) {
+ #ifdef ISC_PLATFORM_CRYPTORANDOM
+ #ifndef DONT_REQUIRE_DST_LIB_INIT
+ INSIST(dst__memory_pool != NULL);
+ #endif
+ REQUIRE(data != NULL);
+ REQUIRE(length > 0);

-#include <isc/util.h>
+ #if OPENSSSL_VERSION_NUMBER < 0x10100000L || defined(LIBRESSL_VERSION_NUMBER)
+ if ((flags & ISC_ENTROPY_GOODONLY) == 0) {
+ if (RAND_pseudo_bytes((unsigned char *)data, (int)length) < 0)
+ return (dst__openssl_toresult2("RAND_pseudo_bytes",
+ DST_R_OPENSSSLFAILURE));
+ } else {
+ if (RAND_bytes((unsigned
+ char *)data, (int)length) != 1)
+ return (dst__openssl_toresult2("RAND_bytes",
+ DST_R_OPENSSSLFAILURE));
+ }
+ #else
+ UNUSED(flags);

-EMPTY_TRANSLATION_UNIT
+ if (RAND_bytes((unsigned char *)data, (int)length) != 1)
+ return (dst__openssl_toresult2("RAND_bytes",
+ DST_R_OPENSSSLFAILURE));
+ #endif
+ if (returned != NULL)
+ *returned = length;
+ return (ISC_R_SUCCESS);
+ #else
+ UNUSED(data);
+ UNUSED(length);
+ UNUSED(returned);
+ UNUSED(flags);
+
+ return (ISC_R_NOTIMPLEMENTED);
+ #endif
+ }

#endif /* OPENSSSL */

```

```

/*! \file */
diff --git a/lib/dns/pkcs11.c b/lib/dns/pkcs11.c
index 6b30309..20552fa 100644
--- a/lib/dns/pkcs11.c
+++ b/lib/dns/pkcs11.c
@@ -13,12 +13,15 @@

#include <config.h>

+#include <isc/util.h>
+
#include <dns/log.h>
#include <dns/result.h>

#include <pk11/pk11.h>
#include <pk11/internal.h>

+#include "dst_internal.h"
#include "dst_pkcs11.h"

isc_result_t
@@ -34,12 +37,32 @@ dst__pkcs11_toresult(const char *funcname, const char
 *file, int line,
return (fallback);
}

+isc_result_t
+dst_random_getdata(void *data, unsigned int length,
+ unsigned int *returned, unsigned int flags) {
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ isc_result_t ret;

-#else /* PKCS11CRYPTO */
+#ifndef DONT_REQUIRE_DST_LIB_INIT
+ INSIST(dst__memory_pool != NULL);
+#endif
+ REQUIRE(data != NULL);
+ REQUIRE(length > 0);
+ UNUSED(flags);

-#include <isc/util.h>
+ ret = pk11_rand_bytes(data, (int) length);
+ if ((ret == ISC_R_SUCCESS) && (returned != NULL))
+ *returned = length;
+ return (ret);
+#else
+ UNUSED(data);
+ UNUSED(length);

```

```

+ UNUSED(returned);
+ UNUSED(flags);

-EMPTY_TRANSLATION_UNIT
+ return (ISC_R_NOTIMPLEMENTED);
+ #endif
+ }

#endif /* PKCS11CRYPTO */
/*! \file */
diff --git a/lib/dns/tests/Kyuafile b/lib/dns/tests/Kyuafile
index 937b548..f3c0e38 100644
--- a/lib/dns/tests/Kyuafile
+++ b/lib/dns/tests/Kyuafile
@@ -10,6 +10,7 @@ tap_test_program{name='dh_test'}
tap_test_program{name='dispatch_test'}
tap_test_program{name='dnstap_test'}
tap_test_program{name='dst_test'}
+tap_test_program{name='dstrandom_test'}
tap_test_program{name='geoip_test'}
tap_test_program{name='gost_test'}
tap_test_program{name='keytable_test'}
diff --git a/lib/dns/tests/Makefile.in b/lib/dns/tests/Makefile.in
index 4126372..30cab17 100644
--- a/lib/dns/tests/Makefile.in
+++ b/lib/dns/tests/Makefile.in
@@ -37,6 +37,7 @@ SRCS = ac1_test.c \
dnstap_test.c \
dst_test.c \
dnstest.c \
+ dstrandom_test.c \
geoip_test.c \
gost_test.c \
keytable_test.c \
@@ -69,6 +70,7 @@ TARGETS = ac1_test@EXEEXT@ \
dh_test@EXEEXT@ \
dispatch_test@EXEEXT@ \
dnstap_test@EXEEXT@ \
+ dstrandom_test@EXEEXT@ \
dst_test@EXEEXT@ \
geoip_test@EXEEXT@ \
gost_test@EXEEXT@ \
@@ -258,6 +260,11 @@ zt_test@EXEEXT@: zt_test.@O@ dnstest.@O@ ${ISCDEPLIBS} ${DNSDEPLIBS}
${LDLFLAGS} -o $@ zt_test.@O@ dnstest.@O@ \
${DNSLIBS} ${ISCLIBS} ${LIBS}

+dstrandom_test@EXEEXT@: dstrandom_test.@O@ ${ISCDEPLIBS} ${DNSDEPLIBS}
+ ${LIBTOOL_MODE_LINK}

```

```

${PURIFY} ${CC} ${CFLAGS} ${LDFLAGS} -o $@ \
+ dstrandom_test.@@ ${DNSLIBS} \
+ ${ISCLIBS} ${ISCPK11LIBS} ${LIBS}
+
unit::
sh ${top_builddir}/unit/unittest.sh

diff --git a/lib/dns/tests/dstrandom_test.c b/lib/dns/tests/dstrandom_test.c
new file mode 100644
index 0000000..bd3d164
--- /dev/null
+++ b/lib/dns/tests/dstrandom_test.c
@@ -0,0 +1,115 @@
+/*
+ * Copyright (C) Internet Systems Consortium, Inc. ("ISC")
+ *
+ * This Source Code Form is subject to the terms of the Mozilla Public
+ * License, v. 2.0. If a copy of the MPL was not distributed with this
+ * file, You can obtain one at http://mozilla.org/MPL/2.0/.
+ *
+ * See the COPYRIGHT file distributed with this work for additional
+ * information regarding copyright ownership.
+ */
+
+#include <config.h>
+
+#if HAVE_CMOCKA
+
+#include <stdarg.h>
+#include <stddef.h>
+#include <setjmp.h>
+
+#include <stdlib.h>
+#include <stdio.h>
+#include <string.h>
+#include <unistd.h>
+
+#define UNIT_TESTING
+#include
<cmocka.h>
+
+#include <isc/entropy.h>
+#include <isc/mem.h>
+#include <isc/print.h>
+#include <isc/platform.h>
+#include <isc/util.h>
+
+#include <dst/dst.h>

```

```

+
+isc_mem_t *mctx = NULL;
+isc_entropy_t *ectx = NULL;
+unsigned char buffer[128];
+
+/* isc_entropy_getdata() examples */
+static void
+isc_entropy_getdata_test(void **state) {
+ isc_result_t result;
+ unsigned int returned, status;
+ const char *randomfile = "testdata/dstrand/random.data";
+ int ret;
+
+
+ UNUSED(state);
+
+
+ isc_mem_debugging |= ISC_MEM_DEBUGRECORD;
+ result = isc_mem_create(0, 0, &mctx);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ result = isc_entropy_create(mctx, &ectx);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ result = dst_lib_init(mctx, ectx, 0);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ isc_entropy_usehook(ectx, true);
+
+
+ returned = 0;
+ result = isc_entropy_getdata(ectx, buffer, sizeof(buffer),
+ &returned, 0);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ assert_int_equal(returned,
+ sizeof(buffer));
+
+
+ status = isc_entropy_status(ectx);
+ assert_int_equal(status, 0);
+
+
+ isc_entropy_usehook(ectx, false);
+#endif
+
+
+ ret = chdir(TESTS);
+ assert_int_equal(ret, 0);
+
+
+ result = isc_entropy_createfilesource(ectx, randomfile);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+
+ returned = 0;
+ result = isc_entropy_getdata(ectx, buffer, sizeof(buffer),
+ &returned, 0);

```

```

+ assert_int_equal(result, ISC_R_SUCCESS);
+ assert_int_equal(returned, sizeof(buffer));
+
+ status = isc_entropy_status(ectx);
+ assert_true(status > 0);
+
+ dst_lib_destroy();
+ isc_entropy_detach(&ectx);
+ assert_null(ectx);
+
+ isc_mem_destroy(&mctx);
+ assert_null(mctx);
+}
+
+int
+main(void) {
+ const struct CMUnitTest tests[] = {
+  cmocka_unit_test(isc_entropy_getdata_test),
+ };
+
+ return (cmocka_run_group_tests(tests, NULL, NULL));
+}
+
+ #else /* HAVE_CMOCKA */
+
+ #include <stdio.h>
+
+ int
+ main(void) {
+  printf("1.0 # Skipped: cmocka not available\n");
+  return
+  (0);
+ }
+
+ #endif
diff --git a/lib/dns/win32/libdns.def.in b/lib/dns/win32/libdns.def.in
index 9c2ef79..f597049 100644
--- a/lib/dns/win32/libdns.def.in
+++ b/lib/dns/win32/libdns.def.in
@@ -1487,6 +1487,13 @@ dst_lib_destroy
dst_lib_init
dst_lib_init2
dst_lib_initmsgcat
+@IF PKCS11
+dst_random_getdata
+@ELSE PKCS11
+@IF OPENSLL
+dst_random_getdata

```

```

+@END OPENSLL
+@END PKCS11
dst_region_computeid
dst_region_computerid
dst_result_register
diff --git a/lib/isc/entropy.c b/lib/isc/entropy.c
index 0c1f3ed..fdd17d7 100644
--- a/lib/isc/entropy.c
+++ b/lib/isc/entropy.c
@@ -104,11 +104,15 @@ struct isc_entropy {
    uint32_t  initialized;
    uint32_t  initcount;
    isc_entropypool_t pool;
+   bool  usehook;
    unsigned int  nsources;
    isc_entropysource_t  *nextsource;
    ISC_LIST(isc_entropysource_t) sources;
};

+/*% Global Hook */
+static isc_entropy_getdata_t hook;
+
+/*% Sample Queue */
typedef struct {
    uint32_t last_time; /*%< last time recorded */
@@ -557,6 +561,11
@@ isc_entropy_getdata(isc_entropy_t *ent, void *data, unsigned int length,

    LOCK(&ent->lock);

+   if (ent->usehook && (hook != NULL)) {
+   UNLOCK(&ent->lock);
+   return (hook(data, length, returned, flags));
+   }
+
    remain = length;
    buf = data;
    total = 0;
@@ -708,6 +717,7 @@ isc_entropy_create(isc_mem_t *mctx, isc_entropy_t **entp) {
    ent->refcnt = 1;
    ent->initialized = 0;
    ent->initcount = 0;
+   ent->usehook = false;
    ent->magic = ENTROPY_MAGIC;

    isc_entropypool_init(&ent->pool);
@@ -1286,3 +1296,17 @@ isc_entropy_usebestsource(isc_entropy_t *ectx, isc_entropysource_t **source,
    */

```



```

return (final_result);
}
+
+void
+isc_entropy_usehook(isc_entropy_t *ectx, bool onoff) {
+ REQUIRE(VALID_ENTROPY(ectx));
+
+ LOCK(&ectx->lock);
+ ectx->usehook = onoff;
+ UNLOCK(&ectx->lock);
+}
+
+void
+isc_entropy_sethook(isc_entropy_getdata_t myhook) {
+ hook = myhook;
+}
diff --git a/lib/isc/include/isc/entropy.h b/lib/isc/include/isc/entropy.h
index b5bc956..f32c9dc 100644
--- a/lib/isc/include/isc/entropy.h
+++
b/lib/isc/include/isc/entropy.h
@@ -302,6 +302,18 @@ isc_entropy_usebestsource(isc_entropy_t *ectx, isc_entropysource_t **source,
 * isc_entropy_createcallbacksource().
 */

+void
+isc_entropy_usehook(isc_entropy_t *ectx, bool onoff);
+/*!<
+ * \brief Mark/unmark the given entropy structure as being hooked.
+ */
+
+void
+isc_entropy_sethook(isc_entropy_getdata_t myhook);
+/*!<
+ * \brief Set the getdata hook (e.g., for a crypto random generator).
+ */
+
ISC_LANG_ENDDECLS

#endif /* ISC_ENTROPY_H */
diff --git a/lib/isc/include/isc/platform.h.in b/lib/isc/include/isc/platform.h.in
index 2bf8758..f4c684e 100644
--- a/lib/isc/include/isc/platform.h.in
+++ b/lib/isc/include/isc/platform.h.in
@@ -359,6 +359,11 @@
 */
@ISC_PLATFORM_HAVESTRINGSH@

```

```

+/*
+ * Define if the random functions are provided by crypto.
+ */
+@ISC_PLATFORM_CRYPTORANDOM@
+
+/*
+ * Define if the hash functions must be provided by OpenSSL.
+ */
diff --git a/lib/isc/include/isc/types.h
b/lib/isc/include/isc/types.h
index 3bdd54f..d5acd39 100644
--- a/lib/isc/include/isc/types.h
+++ b/lib/isc/include/isc/types.h
@@ -95,6 +95,8 @@ typedef struct isc_time  isc_time_t; /*%< Time */
typedef struct isc_timer  isc_timer_t; /*%< Timer */
typedef struct isc_timermgr  isc_timermgr_t; /*%< Timer Manager */

+typedef isc_result_t (*isc_entropy_getdata_t)(void *, unsigned int,
+      unsigned int *, unsigned int);
typedef void (*isc_taskaction_t)(isc_task_t *, isc_event_t *);
typedef int (*isc_sockfdwatch_t)(isc_task_t *, isc_socket_t *, void *, int);

diff --git a/lib/isc/pk11.c b/lib/isc/pk11.c
index 227f807..4a63fdf 100644
--- a/lib/isc/pk11.c
+++ b/lib/isc/pk11.c
@@ -321,14 +321,16 @@ pk11_rand_seed_fromfile(const char *randomfile) {
    ret = isc_stdio_open(randomfile, "r", &stream);
    if (ret != ISC_R_SUCCESS)
        goto cleanup;
-   ret = isc_stdio_read(seed, 1, SEEDSIZE, stream, &cc);
-   if (ret != ISC_R_SUCCESS)
-       goto cleanup;
+   while (ret == ISC_R_SUCCESS) {
+       ret
+       = isc_stdio_read(seed, 1, SEEDSIZE, stream, &cc);
+       if ((ret != ISC_R_SUCCESS) && (ret != ISC_R_EOF))
+           goto cleanup;
+       (void) pkcs_C_SeedRandom(ctx.session, seed, (CK_ULONG) cc);
+   }
    ret = isc_stdio_close(stream);
    stream = NULL;
-   if (ret != ISC_R_SUCCESS)
+   if (ret != ISC_R_SUCCESS)
        goto cleanup;
-   (void) pkcs_C_SeedRandom(ctx.session, seed, (CK_ULONG) cc);

    cleanup:

```

```

if (stream != NULL)
diff --git a/lib/isc/win32/include/isc/platform.h.in b/lib/isc/win32/include/isc/platform.h.in
index 1f785e0..f9051c3 100644
--- a/lib/isc/win32/include/isc/platform.h.in
+++ b/lib/isc/win32/include/isc/platform.h.in
@@ -73,6 +73,11 @@
#define ISC_PLATFORM_NORETURN_PRE __declspec(noreturn)
#define ISC_PLATFORM_NORETURN_POST

+/*
+ * Define if the random functions are provided by crypto.
+ */
+@ISC_PLATFORM_CRYPTORANDOM@
+
+/*
+ * Define if the hash functions must be provided by OpenSSL.
+ */
diff --git a/win32utils/Configure b/win32utils/Configure
index 7ac30fb..55b6c23 100644
---
a/win32utils/Configure
+++ b/win32utils/Configure
@@ -382,6 +382,7 @@ my @substdefh = ("ALLOW_FILTER_AAAA",
my %configdefp;

my @substdefp = ("ISC_PLATFORM_BUSYWAITNOP",
+      "ISC_PLATFORM_CRYPTORANDOM",
+      "ISC_PLATFORM_HAVEATOMICSTORE",
+      "ISC_PLATFORM_HAVEATOMICSTOREQ",
+      "ISC_PLATFORM_HAVECMPXCHG",
@@ -516,7 +517,8 @@ my @allcond = (@substcond, "NOTYET", "NOLONGER");

# enable-xxx/disable-xxx

-my @enablelist = ("developer",
+my @enablelist = ("crypto-rand",
+      "developer",
+      "fixed-rrset",
+      "intrinsic",
+      "native-pkcs11",
@@ -578,6 +580,7 @@ my @help = (
"\nOptional Features:\n",
" enable-intrinsic  enable intrinsic/atomic functions [default=yes]\n",
" enable-native-pkcs11 use native PKCS#11 for all crypto [default=no]\n",
+ " enable-crypto-rand  use crypto provider for random [default=yes]\n",
" enable-openssl-hash  use OpenSSL
for hash functions [default=yes]\n",
" enable-filter-aaaa  enable filtering of AAAA records [default=yes]\n",

```

```

" enable-fixed-rrset  enable fixed rrset ordering [default=no]\n",
@@ -625,7 +628,9 @@ my $want_clean = "no";
my $want_unknown = "no";
my $unknown_value;
my $enable_intrinsics = "yes";
+my $cryptolib = "";
my $enable_native_pkcs11 = "no";
+my $enable_crypto_rand = "yes";
my $enable_openssl_hash = "auto";
my $enable_filter_aaaa = "yes";
my $enable_fixed_rrset = "no";
@@ -844,6 +849,10 @@ sub myenable {
    if ($val =~ /^yes$/i) {
        $enable_native_pkcs11 = "yes";
    }
+ } elsif ($key =~ /^crypto-rand$/i) {
+   if ($val =~ /^no$/i) {
+       $enable_crypto_rand = "no";
+   }
    } elsif ($key =~ /^openssl-hash$/i) {
        if ($val =~ /^yes$/i) {
            $enable_openssl_hash = "yes";
@@ -1146,6 +1155,11 @@ if ($verbose) {
    } else {
        print "native-pkcs11: disabled\n";
    }
+   if ($enable_crypto_rand
+   eq "yes") {
+       print "crypto-rand: enabled\n";
+   } else {
+       print "crypto-rand: disabled\n";
+   }
    if ($enable_openssl_hash eq "yes") {
        print "openssl-hash: enabled\n";
    } else {
@@ -1498,6 +1512,7 @@ if ($enable_intrinsics eq "yes") {

# enable-native-pkcs11
if ($enable_native_pkcs11 eq "yes") {
+   $cryptolib = "pkcs11";
    if ($use_openssl eq "auto") {
        $use_openssl = "no";
    }
@@ -1707,6 +1722,7 @@ if ($use_openssl eq "yes") {
    $openssl_dll = File::Spec->catdir($openssl_path, "@dirlist[0]");
}

+   $cryptolib = "openssl";

```

```

$configcond{"OPENSSSL"} = 1;
$configdefd{"CRYPTO"} = "OPENSSSL";
$configvar{"OPENSSSL_PATH"} = "$openssl_path";
@@ -2278,6 +2294,15 @@ if ($use_aes eq "yes") {
}

+# enable-crypto-rand
+if ($enable_crypto_rand eq "yes") {
+  if (($use_openssl eq "no") && ($enable_native_pkcs11 eq "no")) {
+    die "No crypto provider for random functions\n";
+  }
+  $configdefp{"ISC_PLATFORM_CRYPTORANDOM"}
+  = "\"$cryptolib\"";
+}
+print "Cryptographic library for DNSSEC: $cryptolib";
+
# enable-openssl-hash
if ($enable_openssl_hash eq "yes") {
  if ($use_openssl eq "no") {
@@ -3650,6 +3675,7 @@ exit 0;
# --enable-developer partially supported
# --enable-newstats (9.9/9.9sub only)
# --enable-native-pkcs11 supported
+# --enable-crypto-rand supported
# --enable-openssl-version-check included without a way to disable it
# --enable-openssl-hash supported
# --enable-threads included without a way to disable it
--
2.31.1

```

Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/bind-9.11-rt31459.patch

No license file was found, but licenses were detected in source scan.

.\n Permission to use, copy, modify, and distribute this software for any
.\n purpose with or without fee is hereby granted, provided that the above
.\n copyright notice and this permission notice appear in all copies.

Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/ldap2zone.1

No license file was found, but licenses were detected in source scan.

From 800ef75553881527e2406f22887e976bb1ba3bfe Mon Sep 17 00:00:00 2001

From: Mark Andrews <marka@isc.org>

Date: Tue, 18 Jan 2022 00:19:47 +1100

Subject: [PATCH] Add tests for forwarder cache poisoning scenarios

- Check that an NS in an authority section returned from a forwarder which is above the name in a configured "forward first" or "forward only" zone (i.e., net/NS in a response from a forwarder configured for local.net) is not cached.
 - Test that a DNAME for a parent domain will not be cached when sent in a response from a forwarder configured to answer for a child.
 - Check that glue is rejected if its name falls below that of zone configured locally.
 - Check that an extra out-of-bailiwick data in the answer section is not cached (this was already working correctly, but was not explicitly tested before).
- v9_11 backport: Revert primary/secondary to master/slave, backport rndc helper, backport ns8 config.

(cherry picked from commit bf3ffff67e1de78e9387a93674d471bf4291604)
(cherry picked from commit 29f08170f05c2c96fb67f3b561b46aa0bae356f7)

```
bin/tests/system/forward/ans11/ans.py      | 136 ++++++
bin/tests/system/forward/clean.sh         | 2 +
bin/tests/system/forward/ns1/diditwork.net.db | 20 +++
bin/tests/system/forward/ns1/named.conf.in | 20 +++
bin/tests/system/forward/ns1/net.example.lll | 13 ++
bin/tests/system/forward/ns1/spoofed.net.db | 20 +++
bin/tests/system/forward/ns1/sub.local.net.db | 20 +++
bin/tests/system/forward/ns10/fakenet.zone | 15 ++
bin/tests/system/forward/ns10/fakenet2.zone | 13 ++
.../system/forward/ns10/fakesublocalnet.zone | 13 ++
.../system/forward/ns10/fakesublocaltld.zone | 13 ++
bin/tests/system/forward/ns10/named.conf.in | 51 ++++++
bin/tests/system/forward/ns10/net.example.lll | 13 ++
bin/tests/system/forward/ns10/spoofednet.zone | 14 ++
bin/tests/system/forward/ns4/named.conf.in
| 5 +
bin/tests/system/forward/ns4/sibling.tld.db | 20 +++
bin/tests/system/forward/ns8/named.conf.in | 33 ++++++
bin/tests/system/forward/ns8/root.db      | 11 ++
bin/tests/system/forward/ns8/sub.local.tld.db | 13 ++
bin/tests/system/forward/ns9/local.net.db | 14 ++
bin/tests/system/forward/ns9/local.tld.db | 13 ++
bin/tests/system/forward/ns9/named1.conf.in | 65 ++++++
bin/tests/system/forward/ns9/named2.conf.in | 68 ++++++
bin/tests/system/forward/ns9/named3.conf.in | 48 ++++++
bin/tests/system/forward/ns9/named4.conf.in | 45 ++++++
bin/tests/system/forward/ns9/root.db      | 11 ++
bin/tests/system/forward/prereq.sh        | 14 ++
bin/tests/system/forward/setup.sh         | 3 +
```

```

bin/tests/system/forward/tests.sh      | 126 ++++++
bin/tests/system/ifconfig.sh          | 8 +-
30 files changed, 856 insertions(+), 4 deletions(-)
create mode 100644 bin/tests/system/forward/ans11/ans.py
create mode 100644 bin/tests/system/forward/ns1/diditwork.net.db
create mode 100644 bin/tests/system/forward/ns1/net.example.lll
create mode 100644 bin/tests/system/forward/ns1/spoofed.net.db
create mode 100644 bin/tests/system/forward/ns1/sub.local.net.db
create mode 100644 bin/tests/system/forward/ns10/fakenet.zone
create mode 100644 bin/tests/system/forward/ns10/fakenet2.zone
create mode 100644 bin/tests/system/forward/ns10/fakesublocalnet.zone
create mode 100644 bin/tests/system/forward/ns10/fakesublocaltld.zone
create mode 100644 bin/tests/system/forward/ns10/named.conf.in
create mode 100644 bin/tests/system/forward/ns10/net.example.lll
create mode 100644 bin/tests/system/forward/ns10/spoofednet.zone
create mode 100644 bin/tests/system/forward/ns4/sibling.tld.db
create mode 100644 bin/tests/system/forward/ns8/named.conf.in
create mode 100644 bin/tests/system/forward/ns8/root.db
create mode 100644 bin/tests/system/forward/ns8/sub.local.tld.db
create mode 100644
bin/tests/system/forward/ns9/local.net.db
create mode 100644 bin/tests/system/forward/ns9/local.tld.db
create mode 100644 bin/tests/system/forward/ns9/named1.conf.in
create mode 100644 bin/tests/system/forward/ns9/named2.conf.in
create mode 100644 bin/tests/system/forward/ns9/named3.conf.in
create mode 100644 bin/tests/system/forward/ns9/named4.conf.in
create mode 100644 bin/tests/system/forward/ns9/root.db

diff --git a/bin/tests/system/forward/ans11/ans.py b/bin/tests/system/forward/ans11/ans.py
new file mode 100644
index 0000000000..2956cf6eff
--- /dev/null
+++ b/bin/tests/system/forward/ans11/ans.py
@@ -0,0 +1,136 @@
+#####
+# Copyright (C) Internet Systems Consortium, Inc. ("ISC")
+#
+# This Source Code Form is subject to the terms of the Mozilla Public
+# License, v. 2.0. If a copy of the MPL was not distributed with this
+# file, you can obtain one at https://mozilla.org/MPL/2.0/.
+#
+# See the COPYRIGHT
file distributed with this work for additional
+# information regarding copyright ownership.
+#####
+
+from __future__ import print_function
+import os

```

```

+import sys
+import signal
+import socket
+import select
+from datetime import datetime, timedelta
+import time
+import functools
+
+import dns, dns.message, dns.query, dns.flags
+from dns.rdatatype import *
+from dns.rdataclass import *
+from dns.rcode import *
+from dns.name import *
+
+# Log query to file
+def logquery(type, qname):
+    with open("qlog", "a") as f:
+        f.write("%s %s\n", type, qname)
+
+#####
+# Respond to a DNS query.
+#####
+def create_response(msg):
+    m = dns.message.from_wire(msg)
+    qname = m.question[0].name.to_text()
+    rrtype = m.question[0].rdtype
+    typename = dns.rdatatype.to_text(rrtype)
+
+    with open("query.log", "a") as f:
+        f.write("%s %s\n" % (typename, qname))
+        print("%s %s" % (typename, qname), end=" ")
+
+    r = dns.message.make_response(m)
+    r.set_rcode(NOERROR)
+    if rrtype == A:
+        tld=qname.split('.')[-2] + '.'
+        ns="local." + tld
+        r.answer.append(dns.rdataset.from_text(qname, 300, IN, A, "10.53.0.11"))
+        r.answer.append(dns.rdataset.from_text(tld, 300, IN, NS, "local." + tld))
+        r.additional.append(dns.rdataset.from_text(ns, 300, IN, A, "10.53.0.11"))
+    elif rrtype == NS:
+        r.answer.append(dns.rdataset.from_text(qname, 300, IN, NS, "."))
+    elif rrtype == SOA:
+        r.answer.append(dns.rdataset.from_text(qname, 300, IN, SOA, ". . 0 0 0 0 0"))
+    else:
+        r.authority.append(dns.rdataset.from_text(qname, 300, IN, SOA, ". . 0 0 0 0 0"))
+    r.flags |= dns.flags.AA

```



```

+ return r
+
+def sigterm(signum, frame):
+ print ("Shutting down now...")
+ os.remove('ans.pid')
+ running
= False
+ sys.exit(0)
+
+#####
+# Main
+#
+# Set up responder and control channel, open the pid file, and start
+# the main loop, listening for queries on the query channel or commands
+# on the control channel and acting on them.
+#####
+ip4 = "10.53.0.11"
+ip6 = "fd92:7065:b8e:ffff::11"
+
+try: port=int(os.environ['PORT'])
+except: port=5300
+
+query4_socket = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
+query4_socket.bind((ip4, port))
+havev6 = True
+try:
+ query6_socket = socket.socket(socket.AF_INET6, socket.SOCK_DGRAM)
+ try:
+ query6_socket.bind((ip6, port))
+ except:
+ query6_socket.close()
+ havev6 = False
+except:
+ havev6 = False
+signal.signal(signal.SIGTERM, sigterm)
+
+f = open('ans.pid', 'w')
+pid = os.getpid()
+print (pid, file=f)
+f.close()
+
+running = True
+
+print ("Listening on %s port
+d" % (ip4, port))
+if havev6:
+ print ("Listening on %s port %d" % (ip6, port))
+print ("Ctrl-c to quit")

```

```

+
+if havev6:
+  input = [query4_socket, query6_socket]
+else:
+  input = [query4_socket]
+
+while running:
+  try:
+    inputready, outputready, exceptready = select.select(input, [], [])
+    except select.error as e:
+      break
+    except socket.error as e:
+      break
+    except KeyboardInterrupt:
+      break
+
+  for s in inputready:
+    if s == query4_socket or s == query6_socket:
+      print ("Query received on %s" %
+            (ip4 if s == query4_socket else ip6), end=" ")
+      # Handle incoming queries
+      msg = s.recvfrom(65535)
+      rsp = create_response(msg[0])
+      if rsp:
+        print(dns.rcode.to_text(rsp.rcode()))
+        s.sendto(rsp.to_wire(), msg[1])
+      else:
+        print("NO RESPONSE")
+    if not running:
+      break
diff --git a/bin/tests/system/forward/clean.sh
b/bin/tests/system/forward/clean.sh
index 26e4e76db6..26a550db49 100644
--- a/bin/tests/system/forward/clean.sh
+++ b/bin/tests/system/forward/clean.sh
@@ -10,8 +10,10 @@
#
# Clean up after forward tests.
#
+rm -f ./ans11/query.log
rm -f ./dig.out.*
rm -f ./*/named.conf
rm -f ./*/named.memstats
rm -f ./*/named.run ./*/named.run.prev
+rm -f ./*/named_dump.db
rm -f ./ns*/named.lock
diff --git a/bin/tests/system/forward/ns1/diditwork.net.db b/bin/tests/system/forward/ns1/diditwork.net.db
new file mode 100644

```

```

index 0000000000..be9a7f72bc
--- /dev/null
+++ b/bin/tests/system/forward/ns1/diditwork.net.db
@@ -0,0 +1,20 @@
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+; file, you can obtain one at https://mozilla.org/MPL/2.0/.
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+   regarding copyright ownership.
+
+
+$TTL 300 ; 5 minutes
+@ IN SOA ns root (
+ 2000082401 ; serial
+ 1800      ; refresh (30 minutes)
+ 1800      ; retry (30 minutes)
+ 1814400   ; expire (3 weeks)
+ 3600      ; minimum (1 hour)
+ )
+ NS ns
+ TXT "recursed"
+ns A 10.53.0.1
diff --git a/bin/tests/system/forward/ns1/named.conf.in b/bin/tests/system/forward/ns1/named.conf.in
index 9904f37ef5..1c31d84608 100644
--- a/bin/tests/system/forward/ns1/named.conf.in
+++ b/bin/tests/system/forward/ns1/named.conf.in
@@ -54,3 +54,23 @@ zone "example5." {
zone "example6" {
    type forward;
};
+
+zone "diditwork.net" {
+ type master;
+ file "diditwork.net.db";
+};
+
+zone "spoofed.net" {
+ type master;
+ file "spoofed.net.db";
+};
+
+zone "sub.local.net" {
+ type master;
+ file "sub.local.net.db";
+};

```

```

+
+zone "net.example.lll" {
+ type master;
+ file "net.example.lll";
+};
diff --git a/bin/tests/system/forward/ns1/net.example.lll b/bin/tests/system/forward/ns1/net.example.lll
new
file mode 100644
index 0000000000..d179853fa5
--- /dev/null
+++ b/bin/tests/system/forward/ns1/net.example.lll
@@ -0,0 +1,13 @@
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+
+
+$TTL 86400
+net.example.lll. SOA . . 0 0 0 0
+net.example.lll. NS attackSecureDomain.net.
+didItWork.net.example.lll. TXT "if you can see this record the attack worked"
diff --git a/bin/tests/system/forward/ns1/spoofed.net.db b/bin/tests/system/forward/ns1/spoofed.net.db
new file mode 100644
index 0000000000..d498d5fa0d
--- /dev/null
+++ b/bin/tests/system/forward/ns1/spoofed.net.db
@@ -0,0 +1,20 @@
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+
+
+$TTL 300 ; 5 minutes
+@ IN SOA ns root (
+ 2000082401 ; serial
+ 1800 ; refresh (30 minutes)
+ 1800 ; retry (30 minutes)
+ 1814400 ; expire (3 weeks)
+ 3600 ; minimum (1 hour)

```

```

+ )
+ NS ns
+ns A 10.53.0.1
+sub TXT "recursed"
diff --git a/bin/tests/system/forward/ns1/sub.local.net.db b/bin/tests/system/forward/ns1/sub.local.net.db
new file mode 100644
index 0000000000..be9a7f72bc
--- /dev/null
+++ b/bin/tests/system/forward/ns1/sub.local.net.db
@@ -0,0 +1,20 @@
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+
+$TTL 300 ; 5 minutes
+@ IN SOA ns root (
+ 2000082401 ; serial
+ 1800 ; refresh (30 minutes)
+ 1800 ; retry (30 minutes)
+ 1814400 ; expire (3 weeks)
+ 3600 ; minimum (1 hour)
+ )
+ NS ns
+ TXT "recursed"
+ns A 10.53.0.1
diff --git a/bin/tests/system/forward/ns10/fakenet.zone b/bin/tests/system/forward/ns10/fakenet.zone
new file mode 100644
index 0000000000..14e5c777cb
--- /dev/null
+++ b/bin/tests/system/forward/ns10/fakenet.zone
@@ -0,0 +1,15 @@
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+
+$TTL 86400

```

```

+net. SOA . . 0 0 0 0 0
+net. NS attackSecureDomain.net.
+attackSecureDomain.net. A 10.53.0.10
+didItWork.net. TXT "if you can see this record the attack worked"
+ns.spoofed.net. A 10.53.0.10
diff --git a/bin/tests/system/forward/ns10/fakenet2.zone b/bin/tests/system/forward/ns10/fakenet2.zone
new file mode 100644
index 0000000000..7ca28a934e
--- /dev/null
+++ b/bin/tests/system/forward/ns10/fakenet2.zone
@@ -0,0 +1,13 @@
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+
+$TTL 86400
+net2. SOA . . 0 0 0 0 0
+net2. NS attackSecureDomain.net.
+net2. DNAME net.example.lll.
diff
--git a/bin/tests/system/forward/ns10/fakesublocalnet.zone b/bin/tests/system/forward/ns10/fakesublocalnet.zone
new file mode 100644
index 0000000000..6caa071891
--- /dev/null
+++ b/bin/tests/system/forward/ns10/fakesublocalnet.zone
@@ -0,0 +1,13 @@
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+
+$TTL 86400
+sub.local.net. SOA . . 0 0 0 0 0
+sub.local.net. NS ns.spoofed.net.
+sub.local.net. TXT "if you see this attacker overrode local delegation"
diff --git a/bin/tests/system/forward/ns10/fakesublocaltld.zone b/bin/tests/system/forward/ns10/fakesublocaltld.zone
new file mode 100644
index 0000000000..6a431de47f
---
```

```

/dev/null
+++ b/bin/tests/system/forward/ns10/fakesublocaltld.zone
@@ -0,0 +1,13 @@
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+
+sub.local.tld. 3600 IN SOA . . 0 0 0 0
+sub.local.tld. 3600 IN NS ns.sub.local.tld.
+sub.local.tld. 3600 IN TXT bad
+ns.sub.local.tld. 3600 IN A 10.53.0.8
diff --git a/bin/tests/system/forward/ns10/named.conf.in b/bin/tests/system/forward/ns10/named.conf.in
new file mode 100644
index 0000000000..025c108418
--- /dev/null
+++ b/bin/tests/system/forward/ns10/named.conf.in
@@ -0,0 +1,51 @@
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+ */
+
+options {
+ query-source address 10.53.0.10;
+ notify-source 10.53.0.10;
+ transfer-source 10.53.0.10;
+ port @PORT@;
+ pid-file "named.pid";
+ listen-on { 10.53.0.10; };
+ listen-on-v6 { none; };
+ minimal-responses no;
+};
+
+zone "net." {
+ type master;
+ file "fakenet.zone";

```

```

+};
+
+zone "spoofed.net." {
+ type master;
+ file "spoofednet.zone";
+};
+
+zone "sub.local.net." {
+ type master;
+ file "fakesublocalnet.zone";
+};
+
+zone "net2" {
+ type master;
+ file "fakenet2.zone";
+};
+
+zone "net.example.lll" {
+ type master;
+ file "net.example.lll";
+};
+
+zone "sub.local.tld." {
+ type master;
+ file "fakesublocaltld.zone";
+};
diff --git a/bin/tests/system/forward/ns10/net.example.lll b/bin/tests/system/forward/ns10/net.example.lll
new
file mode 100644
index 0000000000..d179853fa5
--- /dev/null
+++ b/bin/tests/system/forward/ns10/net.example.lll
@@ -0,0 +1,13 @@
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+
+$TTL 86400
+net.example.lll. SOA . . 0 0 0 0 0
+net.example.lll. NS attackSecureDomain.net.
+didItWork.net.example.lll. TXT "if you can see this record the attack worked"
diff --git a/bin/tests/system/forward/ns10/spoofednet.zone b/bin/tests/system/forward/ns10/spoofednet.zone
new file mode 100644

```



```

index 0000000000..13921a08cd
--- /dev/null
+++ b/bin/tests/system/forward/ns10/spoofednet.zone
@@ -0,0 +1,14 @@
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+
+$TTL 86400
+spoofed.net. SOA . . 0 0 0 0
+spoofed.net. NS ns.spoofed.net.
+ns.spoofed.net. A 10.53.0.10
+spoofed.net. TXT "this record is clearly spoofed"
diff --git a/bin/tests/system/forward/ns4/named.conf.in b/bin/tests/system/forward/ns4/named.conf.in
index d42a9eb797..6db65e71bc 100644
--- a/bin/tests/system/forward/ns4/named.conf.in
+++ b/bin/tests/system/forward/ns4/named.conf.in
@@ -60,3 +60,8 @@ zone "malicious." {
    type master;
    file "malicious.db";
};
+
+zone "sibling.tld" {
+ type master;
+ file "sibling.tld.db";
+};
diff --git a/bin/tests/system/forward/ns4/sibling.tld.db b/bin/tests/system/forward/ns4/sibling.tld.db
new file mode 100644
index
0000000000..58037d093b
--- /dev/null
+++ b/bin/tests/system/forward/ns4/sibling.tld.db
@@ -0,0 +1,20 @@
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+

```

```

+$TTL 86400
+@ IN SOA malicious. admin.malicious. (
+      1      ; Serial
+      604800 ; Refresh
+      86400  ; Retry
+      2419200 ; Expire
+      86400 ) ; Negative Cache TTL
+
+@ IN NS ns
+
+ns IN A 10.53.0.4
diff --git a/bin/tests/system/forward/ns8/named.conf.in b/bin/tests/system/forward/ns8/named.conf.in
new
file mode 100644
index 0000000000..9260f69ded
--- /dev/null
+++ b/bin/tests/system/forward/ns8/named.conf.in
@@ -0,0 +1,33 @@
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+ */
+
+options {
+ query-source address 10.53.0.8;
+ notify-source 10.53.0.8;
+ transfer-source 10.53.0.8;
+ port @PORT@;
+ pid-file "named.pid";
+ listen-on { 10.53.0.8; };
+ listen-on-v6 { none; };
+ forwarders { 10.53.0.2; }; // returns referrals
+ forward first;
+ dnssec-validation yes;
+};
+
+zone "." {
+ type hint;
+ file "root.db";
+};
+
+zone "sub.local.tld" {

```

```

+ type master;
+ file "sub.local.tld.db";
+};
diff --git a/bin/tests/system/forward/ns8/root.db b/bin/tests/system/forward/ns8/root.db
new
file mode 100644
index 0000000000..4f30322270
--- /dev/null
+++ b/bin/tests/system/forward/ns8/root.db
@@ -0,0 +1,11 @@
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+
+. NS a.root-servers.nil.
+a.root-servers.nil. A 10.53.0.1
diff --git a/bin/tests/system/forward/ns8/sub.local.tld.db b/bin/tests/system/forward/ns8/sub.local.tld.db
new file mode 100644
index 0000000000..eb20683ae9
--- /dev/null
+++ b/bin/tests/system/forward/ns8/sub.local.tld.db
@@ -0,0 +1,13 @@
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+
+sub.local.tld. 3600 IN SOA . . 0 0 0 0
+sub.local.tld. 3600 IN NS ns.sub.local.tld.
+sub.local.tld. 3600 IN TXT good
+ns.sub.local.tld. 3600 IN A 10.53.0.8
diff --git a/bin/tests/system/forward/ns9/local.net.db b/bin/tests/system/forward/ns9/local.net.db
new file mode 100644
index 0000000000..2c971e1e93
--- /dev/null
+++ b/bin/tests/system/forward/ns9/local.net.db
@@ -0,0 +1,14 @@
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```

```

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+
+local.net. 3600 IN SOA .
. 0 0 0 0 0
+local.net. 3600 IN NS localhost.
+ns.local.net. 3600 IN A 10.53.0.9
+txt.local.net. 3600 IN TXT "something in the local auth zone"
+sub.local.net. 3600 IN NS ns.spoofed.net. ; attacker will try to override this
diff --git a/bin/tests/system/forward/ns9/local.tld.db b/bin/tests/system/forward/ns9/local.tld.db
new file mode 100644
index 0000000000..59403915fb
--- /dev/null
+++ b/bin/tests/system/forward/ns9/local.tld.db
@@ -0,0 +1,13 @@
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+; file, you can obtain one at https://mozilla.org/MPL/2.0/.
+;
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+; information regarding copyright ownership.
+
+local.tld. 3600 IN SOA . . 0 0 0 0 0
+local.tld. 3600 IN NS localhost.
+sub.local.tld. 3600 IN NS ns.sub.local.tld.
+ns.sub.local.tld. 3600 IN A 10.53.0.8
diff
--git a/bin/tests/system/forward/ns9/named1.conf.in b/bin/tests/system/forward/ns9/named1.conf.in
new file mode 100644
index 0000000000..943e037d09
--- /dev/null
+++ b/bin/tests/system/forward/ns9/named1.conf.in
@@ -0,0 +1,65 @@
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```

```
+ * information regarding copyright ownership.
+ */
+
+options {
+ query-source address 10.53.0.9;
+ notify-source 10.53.0.9;
+ transfer-source 10.53.0.9;
+ port @PORT@;
+ pid-file "named.pid";
+ listen-on { 10.53.0.9; };
+ listen-on-v6 { none; };
+ dnssec-validation no;
+ edns-udp-size 1232;
+};
+
+key rndc_key {
+ secret "1234abcd8765";
+ algorithm hmac-sha256;
+};
+
+controls {
+ inet 10.53.0.9
+ port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};
+
+server 10.53.0.10 {
+ edns no;
+};
+
+server 10.53.0.11 {
+ edns no;
+};
+
+zone "." {
+ type hint;
+ file "root.db";
+};
+
+zone "attacksecuredomain.net." {
+ type forward;
+ forwarders { 10.53.0.10; };
+};
+
+zone "attacksecuredomain.net2." {
+ type forward;
+ forwarders { 10.53.0.10; };
+};
+
```

```

+zone "attacksecuredomain.net3." {
+ type forward;
+ forwarders { 10.53.0.11; };
+};
+
+zone "local.net." {
+ type master;
+ file "local.net.db";
+ forwarders {};
+};
diff --git a/bin/tests/system/forward/ns9/named2.conf.in b/bin/tests/system/forward/ns9/named2.conf.in
new file mode 100644
index 0000000000..5a17d1998a
--- /dev/null
+++ b/bin/tests/system/forward/ns9/named2.conf.in
@@ -0,0 +1,68 @@
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+ * one at https://mozilla.org/MPL/2.0/.
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+ */
+
+options {
+ query-source address 10.53.0.9;
+ notify-source 10.53.0.9;
+ transfer-source 10.53.0.9;
+ port @PORT@;
+ pid-file "named.pid";
+ listen-on { 10.53.0.9; };
+ listen-on-v6 { none; };
+ dnssec-validation no;
+ edns-udp-size 1232;
+};
+
+key rndc_key {
+ secret "1234abcd8765";
+ algorithm hmac-sha256;
+};
+
+controls {
+ inet 10.53.0.9 port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};

```

```

+
+server 10.53.0.10 {
+ edns no;
+};
+
+server 10.53.0.11 {
+ edns no;
+};
+
+zone "." {
+ type hint;
+ file "root.db";
+};
+
+zone "attacksecuredomain.net." {
+ type forward;
+ forward only;
+ forwarders { 10.53.0.10; };
+};
+
+zone "attacksecuredomain.net2." {
+ type forward;
+ forward only;
+ forwarders { 10.53.0.10; };
+};
+
+zone "attacksecuredomain.net3." {
+ type forward;
+ forward only;
+ forwarders { 10.53.0.11; };
+};
+
+zone
+ "local.net." {
+ type master;
+ file "local.net.db";
+ forwarders { };
+};
diff --git a/bin/tests/system/forward/ns9/named3.conf.in b/bin/tests/system/forward/ns9/named3.conf.in
new file mode 100644
index 0000000000..1e70d1ae51
--- /dev/null
+++ b/bin/tests/system/forward/ns9/named3.conf.in
@@ -0,0 +1,48 @@
+/*
+ * Copyright (C) Internet Systems Consortium, Inc. ("ISC")
+ *
+ * This Source Code Form is subject to the terms of the Mozilla Public

```

```
+ * License, v. 2.0. If a copy of the MPL was not distributed with this
+ * file, you can obtain one at https://mozilla.org/MPL/2.0/.
+ *
+ * See the COPYRIGHT file distributed with this work for additional
+ * information regarding copyright ownership.
+ */
+
+options {
+ query-source address 10.53.0.9;
+ notify-source 10.53.0.9;
+ transfer-source 10.53.0.9;
+ port @PORT@;
+ pid-file "named.pid";
+ listen-on { 10.53.0.9; };
+ listen-on-v6 { none; };
+ dnssec-validation no;
+ edns-udp-size 1232;
+ forward only;
+ forwarders { 10.53.0.10;
+ };
+};
+
+key rndc_key {
+ secret "1234abcd8765";
+ algorithm hmac-sha256;
+};
+
+controls {
+ inet 10.53.0.9 port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};
+
+server 10.53.0.10 {
+ edns no;
+};
+
+zone "." {
+ type hint;
+ file "root.db";
+};
+
+zone "local.net." {
+ type master;
+ file "local.net.db";
+ forwarders {};
+};
diff --git a/bin/tests/system/forward/ns9/named4.conf.in b/bin/tests/system/forward/ns9/named4.conf.in
new file mode 100644
index 0000000000..6f7b1075b5
```



```
--- /dev/null
+++ b/bin/tests/system/forward/ns9/named4.conf.in
@@ -0,0 +1,45 @@
+/*
+ * Copyright (C) Internet Systems Consortium, Inc. ("ISC")
+ *
+ * This Source Code Form is subject to the terms of the Mozilla Public
+ * License, v. 2.0. If a copy of the MPL was not distributed with this
+ * file, you can obtain one at https://mozilla.org/MPL/2.0/.
+ *
+ * See the COPYRIGHT file distributed with this work for additional
+ * information regarding copyright ownership.
+ */
+
+options {
+  query-source
+  address 10.53.0.9;
+  notify-source 10.53.0.9;
+  transfer-source 10.53.0.9;
+  port @PORT@;
+  pid-file "named.pid";
+  listen-on { 10.53.0.9; };
+  listen-on-v6 { none; };
+  dnssec-validation no;
+  edns-udp-size 1232;
+};
+
+key rndc_key {
+  secret "1234abcd8765";
+  algorithm hmac-sha256;
+};
+
+controls {
+  inet 10.53.0.9 port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};
+
+server 10.53.0.10 {
+  edns no;
+};
+
+zone "." {
+  type hint;
+  file "root.db";
+};
+
+zone "local.tld." {
+  type master;
+  file "local.tld.db";
```

```

+};
diff --git a/bin/tests/system/forward/ns9/root.db b/bin/tests/system/forward/ns9/root.db
new file mode 100644
index 0000000000..4f30322270
--- /dev/null
+++ b/bin/tests/system/forward/ns9/root.db
@@ -0,0 +1,11 @@
+; Copyright (C) Internet Systems Consortium, Inc. ("ISC")
+;
+; This Source Code Form is subject to the terms of the Mozilla Public
+; License, v. 2.0. If a copy of the MPL was not distributed with this
+; file, you can obtain one at https://mozilla.org/MPL/2.0/.
+;
+;
+ See the COPYRIGHT file distributed with this work for additional
+; information regarding copyright ownership.
+
+. NS a.root-servers.nil.
+a.root-servers.nil. A 10.53.0.1
diff --git a/bin/tests/system/forward/prereq.sh b/bin/tests/system/forward/prereq.sh
index d2ca8fc2bf..53fb5817df 100644
--- a/bin/tests/system/forward/prereq.sh
+++ b/bin/tests/system/forward/prereq.sh
@@ -12,6 +12,20 @@
SYSTEMTESTTOP=..
.$SYSTEMTESTTOP/conf.sh

+if test -n "$PYTHON"
+then
+  if $PYTHON -c "import dns" 2> /dev/null
+  then
+    :
+  else
+    echo_i "This test requires the dnspython module." >&2
+    exit 1
+  fi
+else
+  echo_i "This test requires Python and the dnspython module." >&2
+  exit 1
+fi
+
+if $PERL -e 'use Net::DNS;' 2>/dev/null
then
  :
diff --git a/bin/tests/system/forward/setup.sh b/bin/tests/system/forward/setup.sh
index 87452b9a88..18e81d277d 100644
--- a/bin/tests/system/forward/setup.sh
+++ b/bin/tests/system/forward/setup.sh

```

```

@@
-18,3 +18,6 @@ copy_setports ns3/named.conf.in ns3/named.conf
copy_setports ns4/named.conf.in ns4/named.conf
copy_setports ns5/named.conf.in ns5/named.conf
copy_setports ns7/named.conf.in ns7/named.conf
+copy_setports ns8/named.conf.in ns8/named.conf
+copy_setports ns9/named1.conf.in ns9/named.conf
+copy_setports ns10/named.conf.in ns10/named.conf
diff --git a/bin/tests/system/forward/tests.sh b/bin/tests/system/forward/tests.sh
index e3549c5bc7..ce9b309a27 100644
--- a/bin/tests/system/forward/tests.sh
+++ b/bin/tests/system/forward/tests.sh
@@ -19,6 +19,10 @@ sendcmd() (
"$PERL" ../send.pl 10.53.0.6 "$EXTRAPORT1"
)

+rndccmd() {
+ "$RNDNC" -c ../common/rndc.conf -p "$CONTROLPORT" -s "$@"
+}
+
root=10.53.0.1
hidden=10.53.0.2
f1=10.53.0.3
@@ -223,5 +227,127 @@ if [ $ret != 0 ]; then echo_i "failed"; fi
status=$((status+ret))

+#
+# Check various spoofed response scenarios. The same tests will be
+# run twice, with "forward first" and "forward only" configurations.
+#
+run_spoofstests
+() {
+ n=$((n+1))
+ echo_i "checking spoofed response scenario 1 - out of bailiwick NS ($n)"
+ ret=0
+ # prime
+ dig_with_opts @10.53.0.9 attackSecureDomain.net > dig.out.$n.prime || ret=1
+ # check 'net' is not poisoned.
+ dig_with_opts @10.53.0.9 diditwork.net. TXT > dig.out.$n.net || ret=1
+ grep '^diditwork\.net\.*TXT.*"recursed"' dig.out.$n.net > /dev/null || ret=1
+ # check 'sub.local.net' is not poisoned.
+ dig_with_opts @10.53.0.9 sub.local.net TXT > dig.out.$n.sub || ret=1
+ grep '^sub\.local\.net\.*TXT.*"recursed"' dig.out.$n.sub > /dev/null || ret=1
+ if [ $ret != 0 ]; then echo_i "failed"; fi
+ status=$((status+ret))
+
+ n=$((n+1))

```

```

+ echo_i "checking spoofed response scenario 2 - inject DNAME/net2. ($n)"
+ ret=0
+ # prime
+ dig_with_opts @10.53.0.9 attackSecureDomain.net2 > dig.out.$n.prime || ret=1
+ # check that net2/DNAME is not cached
+ dig_with_opts @10.53.0.9 net2. DNAME > dig.out.$n.net2 || ret=1
+
+ grep "ANSWER: 0," dig.out.$n.net2 > /dev/null || ret=1
+ grep "status: NXDOMAIN" dig.out.$n.net2 > /dev/null || ret=1
+ if [ $ret != 0 ]; then echo_i "failed"; fi
+ status=$((status+ret))
+
+ n=$((n+1))
+ echo_i "checking spoofed response scenario 3 - extra answer ($n)"
+ ret=0
+ # prime
+ dig_with_opts @10.53.0.9 attackSecureDomain.net3 > dig.out.$n.prime || ret=1
+ # check extra net3 records are not cached
+ rndccmd 10.53.0.9 dumpdb -cache 2>&1 | sed 's/^ns9 /' | cat_i
+ for try in 1 2 3 4 5; do
+   lines=$(grep "net3" ns9/named_dump.db | wc -l)
+   if [ ${lines} -eq 0 ]; then
+     sleep 1
+     continue
+   fi
+   [ ${lines} -eq 1 ] || ret=1
+   grep -q '^attackSecureDomain.net3' ns9/named_dump.db || ret=1
+   grep -q '^local.net3' ns9/named_dump.db && ret=1
+ done
+ if [ $ret != 0 ]; then echo_i "failed"; fi
+ status=$((status+ret))
+}
+
+echo_i "checking spoofed response scenarios
with forward first zones"
+run_spoofstests
+
+copy_setports ns9/named2.conf.in ns9/named.conf
+rndccmd 10.53.0.9 reconfig 2>&1 | sed 's/^ns3 /' | cat_i
+rndccmd 10.53.0.9 flush 2>&1 | sed 's/^ns3 /' | cat_i
+sleep 1
+
+echo_i "rechecking spoofed response scenarios with forward only zones"
+run_spoofstests
+
+##
+## This scenario expects the spoofed response to succeed. The tests are
+## similar to the ones above, but not identical.

```

```

+#
+echo_i "rechecking spoofed response scenarios with 'forward only' set globally"
+copy_setports ns9/named3.conf.in ns9/named.conf
+rndccmd 10.53.0.9 reconfig 2>&1 | sed 's/^ns3 /' | cat_i
+rndccmd 10.53.0.9 flush 2>&1 | sed 's/^ns3 /' | cat_i
+sleep 1
+
+n=$((n+1))
+echo_i "checking spoofed response scenario 1 - out of bailiwick NS ($n)"
+ret=0
+# prime
+dig_with_opts @10.53.0.9 attackSecureDomain.net > dig.out.$n.prime || ret=1
+# check 'net' is poisoned.
+dig_with_opts @10.53.0.9 diditwork.net. TXT > dig.out.$n.net || ret=1
+grep '^didItWork\.net\..*TXT.*'if
you can see this record the attack worked" dig.out.$n.net > /dev/null || ret=1
+# check 'sub.local.net' is poisoned.
+dig_with_opts @10.53.0.9 sub.local.net TXT > dig.out.$n.sub || ret=1
+grep '^sub\.local\.net\..*TXT.*'if you see this attacker overrode local delegation" dig.out.$n.sub > /dev/null ||
ret=1
+if [ $ret != 0 ]; then echo_i "failed"; fi
+status=$((status+ret))
+
+n=$((n+1))
+echo_i "checking spoofed response scenario 2 - inject DNAME/net2. ($n)"
+ret=0
+# prime
+dig_with_opts @10.53.0.9 attackSecureDomain.net2 > dig.out.$n.prime || ret=1
+# check that net2/DNAME is cached
+dig_with_opts @10.53.0.9 net2. DNAME > dig.out.$n.net2 || ret=1
+grep "ANSWER: 1," dig.out.$n.net2 > /dev/null || ret=1
+grep "net2\..*IN.DNAME.net\.example\.lll\." dig.out.$n.net2 > /dev/null || ret=1
+if [ $ret != 0 ]; then echo_i "failed"; fi
+status=$((status+ret))
+
+#
+# This test doesn't use any forwarder clauses but is here because it
+# is similar to forwarders, as the set of servers
that can populate
+# the namespace is defined by the zone content.
+#
+echo_i "rechecking spoofed response scenarios glue below local zone"
+copy_setports ns9/named4.conf.in ns9/named.conf
+rndccmd 10.53.0.9 reconfig 2>&1 | sed 's/^ns3 /' | cat_i
+rndccmd 10.53.0.9 flush 2>&1 | sed 's/^ns3 /' | cat_i
+sleep 1
+
+n=$((n+1))

```

```

+echo_i "checking sibling glue below zone ($n)"
+ret=0
+# prime
+dig_with_opts @10.53.0.9 sibling.tld > dig.out.$n.prime || ret=1
+# check for glue A record for sub.local.tld is not used
+dig_with_opts @10.53.0.9 sub.local.tld TXT > dig.out.$n.sub || ret=1
+grep "ANSWER: 1," dig.out.$n.sub > /dev/null || ret=1
+grep 'sub\.local\.tld\.*IN.TXT."good"$' dig.out.$n.sub > /dev/null || ret=1
+if [ $ret != 0 ]; then echo_i "failed"; fi
+status=$((status+ret))
+
echo_i "exit status: $status"
[ $status -eq 0 ] || exit 1
diff --git a/bin/tests/system/ifconfig.sh b/bin/tests/system/ifconfig.sh
index d0eb9fa61d..8b9212c3e0 100755
--- a/bin/tests/system/ifconfig.sh
+++ b/bin/tests/system/ifconfig.sh
@@
-12,10 +12,10 @@
#
# Set up interface aliases for bind9 system tests.
#
-# IPv4: 10.53.0.{1..10} RFC 1918
+# IPv4: 10.53.0.{1..11} RFC 1918
# 10.53.1.{1..2}
# 10.53.2.{1..2}
-# IPv6: fd92:7065:b8e:ffff::{1..10} ULA
+# IPv6: fd92:7065:b8e:ffff::{1..11} ULA
# fd92:7065:b8e:99ff::{1..2}
# fd92:7065:b8e:ff::{1..2}
#
@@ -65,7 +65,7 @@ case "$1" in
    2) ipv6="00" ;;
    *) ipv6="" ;;
esac
- for ns in 1 2 3 4 5 6 7 8 9 10
+ for ns in 1 2 3 4 5 6 7 8 9 10 11
do
    [ $i -gt 0 -a $ns -gt 2 ] && break
    int=`expr $i \* 10 + $ns`
@@ -165,7 +165,7 @@ case "$1" in
    2) ipv6="00" ;;
    *) ipv6="" ;;
esac
- for ns in 10 9 8 7 6 5 4 3 2 1
+ for ns in 11 10 9 8 7 6 5 4 3 2 1
do
    [ $i -gt 0 -a $ns -gt 2 ] && continue

```

```
int=`expr $i \* 10 + $ns - 1`
```

--

2.34.1

Found in path(s):

`*/opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/bind-9.11-CVE-2021-25220-test.patch`

No license file was found, but licenses were detected in source scan.

From d55a57427ee696dec51149950478394e43019607 Mon Sep 17 00:00:00 2001

From: =?UTF-8?q?Petr=20Men=C5=A1=C3=ADk?= <pemensik@redhat.com>

Date: Thu, 7 Nov 2019 14:31:03 +0100

Subject: [PATCH] Implement serve-stale in 9.11

MIME-Version: 1.0

Content-Type: text/plain; charset=UTF-8

Content-Transfer-Encoding: 8bit

Squashed commit of the following:

commit 32f47f36e545223b2a4757588d7bd4af8c5f5760

Author: Petr Menšík <pemensik@redhat.com>

Date: Tue Sep 3 18:45:54 2019 +0200

convert serve_stale to db_test

Manual checkout from commit e8f61dd315c5d1c88915bb79361182241e42e47a.

Use test modified for cmocka, including serve-stale tests.

commit 071eb1fb0786f6d614955813d99c3caabff33383

Author: Micha Kpie <michal@isc.org>

Date: Fri Apr 27 09:13:26 2018 +0200

Detect recursion loops during query processing

Interrupt query processing when query_recurse() attempts to ask the same name servers for the same

QNAME/QTYPE tuple for two times in a row as

this indicates that query processing may be stuck for an indeterminate period of time, e.g. due to interactions between features able to restart query_lookup().

(cherry picked from commit 46bb4dd124ed031d4c219d1e37a3c6322092e30c)

commit c12090bc361c7fa4522ace73899e778e44e9b295

Author: Petr Menšík <pemensik@redhat.com>

Date: Mon Sep 2 11:12:32 2019 +0200

Fix test name used in whole test-suite

Correct name is serve-stale

commit ff4d826f295d268a248ca06941d65c903e1b405c

Author: Petr Menšík <pemensik@redhat.com>

Date: Fri Aug 30 17:43:28 2019 +0200

Clean files in more generic rules

commit 8d81ed15eda9a2a11e1433d1fdddacfc772708b6

Author: Petr Menšík <pemensik@redhat.com>

Date: Thu Aug 29 21:27:57 2019 +0200

[rt46602] Pass port numbers to tests via environment variables

Manually applied commit f5d8f079008b648d2e343543e66dd728054c6101

commit 94fafa477891576286def8c4041ad127734af2d1

Author: Tony

Finch <dot@dotat.at>

Date: Tue Apr 10 16:17:57 2018 +0100

Move serve-stale logging to its own category, so that its verbosity can be curtailed.

(cherry picked from commit 4b442c309dfb2c8880b19af4133047655bb734df)

commit e0c884bee98c3d2533dfaa667f58c6a80d8a3a00

Author: Micha Kpie <michal@isc.org>

Date: Fri Apr 27 09:13:26 2018 +0200

Prevent check_stale_header() from leaking rdataset headers

check_stale_header() fails to update the pointer to the previous header while processing rdataset headers eligible for serve-stale, thus enabling rdataset headers to be leaked (i.e. disassociated from a node and left on the relevant TTL heap) while iterating through a node. This can lead to several different assertion failures. Add the missing pointer update.

(cherry picked from commit 391fac1fc8d2e470287b5cc4344b3adb90c6f54a)

commit d724cc1d80ee8d46113eaf82549d49636739b67c

Author: Matthijs Mekking <matthijs@isc.org>

Date: Thu Jan 24 10:24:44
2019 +0100

Print in dump-file stale ttl

This change makes rndc dumpdb correctly print the "; stale" line. It also provides extra information on how long this data may still be served to clients (in other words how long the stale RRset may still be used).

(cherry picked from commit 924ebc605db798e2a383ee5eaaebad739e7c789c)

commit 625da4bd4590ac6108bb30eddd23ceffb245ae49

Author: Micha Kpie <michal@isc.org>

Date: Mon Oct 22 15:26:45 2018 +0200

Check serve-stale behavior with a cold cache

Ensure that serve-stale works as expected when returning stale answers is enabled, the authoritative server does not respond, and there is no cached answer available.

(cherry picked from commit 27cfe83a388147edfa0451b28c06c746912ea684)

commit d67ae10461c409fdafdbbe64f857db2552b71059

Author: Micha Kpie <michal@isc.org>

Date: Mon Oct 22 15:26:45 2018 +0200

Check TTL of stale answers

Make sure that stale answers returned when the serve-stale feature is enabled have a TTL matching the value of the stale-answer-ttl setting.

(cherry picked from commit 893ab37ce78c658215bd3a019f25afe795b37d5a)

commit 50459107805e68e4a63a8e497bf58ef3ce013ddb

Author: Micha Kpie <michal@isc.org>

Date: Mon Jul 9 14:35:12 2018 +0200

Do not use Net::DNS::Nameserver in the "serve-stale" system test

Net::DNS versions older than 0.67 respond to queries sent to a Net::DNS::Nameserver even if its ReplyHandler returns undef. This makes the "serve-stale" system test fail as it takes advantage of the newer behavior. Since the latest Net::DNS version available with stock RHEL/CentOS 6 packages is 0.65 and we officially support that operating system, bin/tests/system/serve-stale/ans2/ans.pl should behave consistently for various Net::DNS versions. Ensure that by reworking it so that it does not use Net::DNS::Nameserver.

(cherry picked from commit c4209418a50c09142375f7edadca731c526f3d3a)

commit

4b5befc714bb386bd245b1c14ce3bce5ae6fb5fa

Author: Petr Menšík <pemensik@redhat.com>

Date: Tue Jun 5 21:38:29 2018 +0200

Fix server-stale requirement, skip without Time::HiRes

(cherry picked from commit 7a0c7bf9c8e6a724e52635eed213ad25b9504e66)

commit 5ce51a3a7e5ef3087c4d022e3fca42fb2fd0c996

Author: Ondej Surý <ondrej@sury.org>

Date: Wed Oct 18 13:01:14 2017 +0200

[rt46602] Update server-stale test to run on port passed from run.sh script

(cherry picked from commit f83ebd34b9555a5a834c58146035173bcbd01dda)

commit 3954a9bf3437f6fab050294a7f2f954a23d161ec

Author: Ondej Surý <ondrej@sury.org>

Date: Wed Oct 18 14:18:59 2017 +0200

[rt46602] Add serve-stale working files to .gitignore

(cherry picked from commit cba162e70e7fac43435a606106841a69ce468526)

commit 112aa21f5fa875494820e4d1eb70e41e10e1aae7

Author: Mark Andrews <marka@isc.org>

Date: Thu Oct 12 15:33:47 2017 +1100

test for Net::DNS::Nameserver

(cherry picked from commit 5b60d0608ac2852753180b762d1917163f9dc315)

commit

9d610e46af8a636f44914cee4cf8b2016054db1e

Author: Mark Andrews <marka@isc.org>

Date: Thu Oct 12 15:19:45 2017 +1100

add Net::DNS prerequisite test

(cherry picked from commit fa644181f51559da3e3913acd72dbc3f6d916e71)

commit e4ea7ba88d9a9a0c79579400c68a5dabe03e8572

Author: Mark Andrews <marka@isc.org>

Date: Wed Sep 6 19:26:10 2017 +1000

add quotes around \$send_response

(cherry picked from commit 023ab19634b287543169e9b7b5259f3126cd60ff)

commit 0af0c5d33c2de34da164571288b650282c6be10a

Author: Mark Andrews <marka@isc.org>

Date: Thu Nov 23 16:11:49 2017 +1100

initialise serve_stale_ttl

(cherry picked from commit 2f4e0e5a81278f59037bf06ae99ff52245cd57e9)

commit fbadd90ee81863d617c4c319d5f0079b877fe102

Author: Evan Hunt <each@isc.org>

Date: Thu Sep 14 11:48:21 2017 -0700

[master] add thanks to APNIC and add missing note for serve-stale

commit deb8adaa59955970b9d2f2fe58060a3cbf08312b

Author: Mark Andrews <marka@isc.org>

Date:

Wed Sep 6 12:16:10 2017 +1000

silence 'staleanswersok' may be used uninitialized in this function warning. [RT #14147]

commit 0e2d03823768dc545015e6ce309777210f4a9f85

Author: Petr Menšík <pemensik@redhat.com>

Date: Thu Aug 29 19:57:58 2019 +0200

More fixes to merge

commit 360e25ffe7623ea0a2eec49395001f4940967776

Author: Mark Andrews <marka@isc.org>

Date: Wed Sep 6 09:58:29 2017 +1000

4700. [func] Serving of stale answers is now supported. This allows named to provide stale cached answers when the authoritative server is under attack. See max-stale-ttl, stale-answer-enable, stale-answer-ttl. [RT #44790]

Signed-off-by: Petr Menšík <pemensik@redhat.com>

| | |
|-----------------------------------|-------|
| bin/named/config.c | 9 +- |
| bin/named/control.c | 2 + |
| bin/named/include/named/control.h | 1 + |
| bin/named/include/named/log.h | 1 + |
| bin/named/include/named/query.h | 15 + |
| bin/named/include/named/server.h | 13 +- |

```

bin/named/log.c          | 1 +
bin/named/query.c       | 164 +++++-
bin/named/server.c      | 177 +++++-
bin/named/statschannel.c | 6 +
bin/rndc/rndc.c         | 2 +
bin/rndc/rndc.docbook   | 19 +
bin/tests/system/chain/prereq.sh | 7 +
bin/tests/system/conf.sh.in | 2 +-
bin/tests/system/dyndb/driver/db.c | 2 +
bin/tests/system/serve-stale/.gitignore | 11 +
bin/tests/system/serve-stale/ans2/ans.pl.in | 178 ++++++
bin/tests/system/serve-stale/clean.sh | 15 +
.../system/serve-stale/ns1/named1.conf.in | 35 ++
.../system/serve-stale/ns1/named2.conf.in | 35 ++
bin/tests/system/serve-stale/ns1/root.db | 5 +
.../system/serve-stale/ns3/named.conf.in | 35 ++
bin/tests/system/serve-stale/prereq.sh | 38 ++
bin/tests/system/serve-stale/setup.sh | 13 +
bin/tests/system/serve-stale/tests.sh | 536 ++++++
doc/arm/Bv9ARM-book.xml | 77 +-
doc/arm/logging-categories.xml | 11 +
doc/arm/notes-rh-changes.xml | 14 +-
doc/misc/options        | 10 +
lib/bind9/check.c       | 78 +-
lib/dns/cache.c         | 38 +-
lib/dns/db.c            | 22 +
lib/dns/ecdb.c          | 4 +-
lib/dns/include/dns/cache.h | 21 +
lib/dns/include/dns/db.h | 35 ++
lib/dns/include/dns/rdataset.h | 11 +
lib/dns/include/dns/resolver.h | 43 +-
lib/dns/include/dns/types.h | 6 +
lib/dns/include/dns/view.h
    | 3 +
lib/dns/master.c        | 14 +-
lib/dns/masterdump.c    | 23 +
lib/dns/rbtodb.c        | 207 ++++++
lib/dns/resolver.c      | 79 +-
lib/dns/sdb.c           | 4 +-
lib/dns/sdlz.c          | 4 +-
lib/dns/tests/db_test.c | 198 ++++++
lib/dns/view.c          | 3 +
lib/isccfg/namedconf.c | 5 +
48 files changed, 2126 insertions(+), 106 deletions(-)
create mode 100644 bin/tests/system/serve-stale/.gitignore
create mode 100644 bin/tests/system/serve-stale/ans2/ans.pl.in
create mode 100644 bin/tests/system/serve-stale/clean.sh
create mode 100644 bin/tests/system/serve-stale/ns1/named1.conf.in

```

```
create mode 100644 bin/tests/system/serve-stale/ns1/named2.conf.in
create mode 100644 bin/tests/system/serve-stale/ns1/root.db
create mode 100644 bin/tests/system/serve-stale/ns3/named.conf.in
create mode 100644 bin/tests/system/serve-stale/prereq.sh
create mode 100644 bin/tests/system/serve-stale/setup.sh
create mode 100755 bin/tests/system/serve-stale/tests.sh
```

```
diff --git a/bin/named/config.c b/bin/named/config.c
```

```
index 9e071bb..d2cd3bc 100644
```

```
--- a/bin/named/config.c
+++ b/bin/named/config.c
@@ -182,13 +182,14 @@ options {\n
#ifdef HAVE_LMDB
" lmdb-mapsize 32M;\n"
#endif
-" max-acache-size 16M;\n\
- max-cache-size 90%;\n\
+ " max-cache-size 90%;\n\
+ max-acache-size 16M;\n\
max-cache-ttl 604800; /* 1 week */\n\
max-clients-per-query 100;\n\
max-ncache-ttl 10800; /* 3 hours */\n\
max-recursion-depth 7;\n\
max-recursion-queries 100;\n\
+ max-stale-ttl 604800; /* 1 week */\n\
message-compression yes;\n\
# min-roots <obsolete>;\n\
minimal-any false;\n\
@@ -203,10 +204,14 @@ options {\n\
request-expire true;\n\
request-ixfr true;\n\
require-server-cookie no;\n\
+ resolver-nonbackoff-tries 3;\n\
+ resolver-retry-interval
800; /* in milliseconds */\n\
# rfc2308-type1 <obsolete>;\n\
root-key-sentinel yes;\n\
servfail-ttl 1;\n\
# sortlist <none>\n\
+ stale-answer-enable false;\n\
+ stale-answer-ttl 1; /* 1 second */\n\
# topology <none>\n\
transfer-format many-answers;\n\
v6-bias 50;\n\
diff --git a/bin/named/control.c b/bin/named/control.c
index 23620b4..0756c73 100644
--- a/bin/named/control.c
+++ b/bin/named/control.c
```

```

@@ -282,6 +282,8 @@ ns_control_docommand(isccc_sexpr_t *message, bool readonly,
    result = ns_server_validation(ns_g_server, lex, text);
} else if (command_compare(command, NS_COMMAND_ZONESTATUS)) {
    result = ns_server_zonestatus(ns_g_server, lex, text);
+ } else if (command_compare(command, NS_COMMAND_SERVESTALE)) {
+ result = ns_server_servestale(ns_g_server, lex, text);
} else {
    isc_log_write(ns_g_lctx, NS_LOGCATEGORY_GENERAL,
        NS_LOGMODULE_CONTROL, ISC_LOG_WARNING,
diff --git a/bin/named/include/named/control.h b/bin/named/include/named/control.h
index 56bad8d..37403f1
100644
--- a/bin/named/include/named/control.h
+++ b/bin/named/include/named/control.h
@@ -67,6 +67,7 @@
#define NS_COMMAND_MKEYS "managed-keys"
#define NS_COMMAND_DNSTAPREOPEN "dnstap-reopen"
#define NS_COMMAND_DNSTAP "dnstap"
+#define NS_COMMAND_SERVESTALE "serve-stale"

isc_result_t
ns_controls_create(ns_server_t *server, ns_controls_t **ctrlsp);
diff --git a/bin/named/include/named/log.h b/bin/named/include/named/log.h
index 76e3a51..0d1d985 100644
--- a/bin/named/include/named/log.h
+++ b/bin/named/include/named/log.h
@@ -30,6 +30,7 @@
#define NS_LOGCATEGORY_UPDATE_SECURITY (&ns_g_categories[6])
#define NS_LOGCATEGORY_QUERY_ERRORS (&ns_g_categories[7])
#define NS_LOGCATEGORY_TAT (&ns_g_categories[8])
+#define NS_LOGCATEGORY_SERVE_STALE (&ns_g_categories[9])

/*
 * Backwards compatibility.
diff --git a/bin/named/include/named/query.h b/bin/named/include/named/query.h
index ef1b172..53c052b 100644
--- a/bin/named/include/named/query.h
+++ b/bin/named/include/named/query.h
@@@
-35,6 +35,18 @@ typedef struct ns_dbversion {
    ISC_LINK(struct ns_dbversion) link;
} ns_dbversion_t;

+/*%
+ * nameserver recursion parameters, to uniquely identify a recursion
+ * query; this is used to detect a recursion loop
+ */
+typedef struct ns_query_recparam {

```

```

+ dns_rdatatype_t qtype;
+ dns_name_t * qname;
+ dns_fixedname_t fqname;
+ dns_name_t * qdomain;
+ dns_fixedname_t fqdomain;
+} ns_query_recreparam_t;
+
/*% nameserver query structure */
struct ns_query {
    unsigned int attributes;
@@ -63,6 +75,7 @@ struct ns_query {
    unsigned int dns64_aaaaoklen;
    unsigned int dns64_options;
    unsigned int dns64_ttl;
+
    struct {
        dns_db_t * db;
        dns_zone_t * zone;
@@ -76,6 +89,8 @@ struct ns_query {
        bool authoritative;
        bool is_zone;
    } redirect;
+
+ ns_query_recreparam_t recreparam;
    dns_keytag_t root_key_sentinel_keyid;
    bool root_key_sentinel_is_ta;
    bool root_key_sentinel_not_ta;
diff --git a/bin/named/include/named/server.h
b/bin/named/include/named/server.h
index 0ba2627..08a02dc 100644
--- a/bin/named/include/named/server.h
+++ b/bin/named/include/named/server.h
@@ -227,7 +227,10 @@ enum {

    dns_nsstatscounter_reclimitdropped = 58,

- dns_nsstatscounter_max = 59
+ dns_nsstatscounter_trystale = 59,
+ dns_nsstatscounter_usedstale = 60,
+
+ dns_nsstatscounter_max = 61
};

/*%
@@ -766,4 +769,12 @@ ns_server_mkeys(ns_server_t *server, isc_lex_t *lex, isc_buffer_t **text);
isc_result_t
ns_server_dnstap(ns_server_t *server, isc_lex_t *lex, isc_buffer_t **text);

```

```

+
+/*%
+ * Control whether stale answers are served or not when configured in
+ * named.conf.
+ */
+isc_result_t
+ns_server_servestale(ns_server_t *server, isc_lex_t *lex,
+   isc_buffer_t **text);
#endif /* NAMED_SERVER_H */
diff --git a/bin/named/log.c b/bin/named/log.c
index acfa766..ea6f114 100644
--- a/bin/named/log.c
+++ b/bin/named/log.c
@@ -38,6 +38,7 @@ static isc_logcategory_t categories[] = {
 { "update-security", 0
 },
 { "query-errors", 0 },
 { "trust-anchor-telemetry", 0 },
+ { "serve-stale",      0 },
 { NULL, 0 }
 };

diff --git a/bin/named/query.c b/bin/named/query.c
index b14f081..a95f5ad 100644
--- a/bin/named/query.c
+++ b/bin/named/query.c
@@ -149,10 +149,14 @@ last_cmpxchg(isc_stdtime_t *x, isc_stdtime_t *e, isc_stdtime_t r) {
#define REDIRECT(c) (((c)->query.attributes & \
   NS_QUERYATTR_REDIRECT) != 0)

-/*% No QNAME Proof? */
+/*% Does the rdataset 'r' have an attached 'No QNAME Proof'? */
#define NOQNAME(r) (((r)->attributes & \
   DNS_RDATASETATTR_NOQNAME) != 0)

+/*% Does the rdataset 'r' contain a stale answer? */
+#define STALE(r) (((r)->attributes & \
+   DNS_RDATASETATTR_STALE) != 0)
+
+#ifdef WANT_QUERYTRACE
static inline void
client_trace(ns_client_t *client, int level, const char *message) {
@@ -241,6 +245,10 @@ static bool
rpz_ck_dnssec(ns_client_t *client, isc_result_t qresult,
   dns_rdataset_t *rdataset, dns_rdataset_t *sigrdataset);

+static void
+recreparam_update(ns_query_recreparam_t *param, dns_rdatatype_t qtype,

```



```

+ const dns_name_t *qname, const dns_name_t *qdomain);
+
+/*%
+ * Increment query statistics counters.
+ */
@@ -494,6 +502,7 @@ query_reset(ns_client_t *client, bool everything) {
client->query.isreferral = false;
client->query.dns64_options = 0;
client->query.dns64_ttl = UINT32_MAX;
+ recparam_update(&client->query.recparam, 0, NULL, NULL);
client->query.root_key_sentinel_keyid = 0;
client->query.root_key_sentinel_is_ta = false;
client->query.root_key_sentinel_not_ta = false;
@@ -4305,6 +4314,54 @@ log_quota(ns_client_t *client, isc_stdtime_t *last, isc_stdtime_t now,
}
}

+/*%
+ * Check whether the recursion parameters in 'param' match the current query's
+ * recursion parameters provided in 'qtype', 'qname', and 'qdomain'.
+ */
+static bool
+recparam_match(const ns_query_recparam_t *param, dns_rdatatype_t qtype,
+ const dns_name_t *qname, const dns_name_t *qdomain)
+{
+ REQUIRE(param
+ != NULL);
+
+
+ return (param->qtype == qtype &&
+ param->qname != NULL && qname != NULL &&
+ param->qdomain != NULL && qdomain != NULL &&
+ dns_name_equal(param->qname, qname) &&
+ dns_name_equal(param->qdomain, qdomain));
+}
+
+/*%
+ * Update 'param' with current query's recursion parameters provided in
+ * 'qtype', 'qname', and 'qdomain'.
+ */
+static void
+recparam_update(ns_query_recparam_t *param, dns_rdatatype_t qtype,
+ const dns_name_t *qname, const dns_name_t *qdomain)
+{
+ isc_result_t result;
+
+ REQUIRE(param != NULL);
+
+ param->qtype = qtype;

```

```

+
+ if (qname == NULL) {
+   param->qname = NULL;
+ } else {
+   param->qname = dns_fixedname_initname(&param->fqname);
+   result = dns_name_copy(qname, param->qname, NULL);
+   RUNTIME_CHECK(result == ISC_R_SUCCESS);
+ }
+
+ if (qdomain == NULL) {
+   param->qdomain = NULL;
+ } else {
+   param->qdomain = dns_fixedname_initname(&param->fqdomain);
+   result = dns_name_copy(qdomain, param->qdomain,
+   NULL);
+   RUNTIME_CHECK(result == ISC_R_SUCCESS);
+ }
+}
+
static isc_result_t
query_recurse(ns_client_t *client, dns_rdatatype_t qtype, dns_name_t *qname,
             dns_name_t *qdomain, dns_rdataset_t *nameservers,
@@ -4314,6 +4371,19 @@ query_recurse(ns_client_t *client, dns_rdatatype_t qtype, dns_name_t *qname,
             dns_rdataset_t *rdataset, *sigrdataset;
isc_sockaddr_t *peeraddr;

+ /*
+  * Check recursion parameters from the previous query to see if they
+  * match. If not, update recursion parameters and proceed.
+  */
+ if (recparam_match(&client->query.recparam, qtype, qname, qdomain)) {
+   ns_client_log(client, NS_LOGCATEGORY_CLIENT,
+   NS_LOGMODULE_QUERY, ISC_LOG_INFO,
+   "recursion loop detected");
+   return (ISC_R_FAILURE);
+ }
+
+ recparam_update(&client->query.recparam, qtype, qname, qdomain);
+
+ if (!resuming)
+   inc_stats(client, dns_nsstatscounter_recursion);

@@ -6821,6 +6891,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t
qtype)
int line = -1;
bool dns64_exclude, dns64, rpz;
bool nxrewrite = false;
+ bool want_stale = false;

```

```

bool redirected = false;
dns_clientinfo_t cm;
dns_clientinfo_t ci;
@@ -7130,6 +7201,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
    type = qtype;

restart:
+ // query_start
CTRACE(ISC_LOG_DEBUG(3), "query_find: restart");
want_restart = false;
authoritative = false;
@@ -7274,6 +7346,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
}

db_find:
+ // query_lookup
CTRACE(ISC_LOG_DEBUG(3), "query_find: db_find");
/*
* We'll need some resources...
@@ -7331,6 +7404,35 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
if (!is_zone)
    dns_cache_updatestats(client->view->cache, result);

+ if (want_stale) {
+ char namebuf[DNS_NAME_FORMATSIZE];
+ bool success;
+
+ client->query.dboptions &= ~DNS_DBFIND_STALEOK;
+ want_stale = false;
+
+ if
+ (dns_rdataset_isassociated(rdataset) &&
+  dns_rdataset_count(rdataset) > 0 &&
+  STALE(rdataset)) {
+ rdataset->ttl = client->view->staleanswer_ttl;
+ success = true;
+ } else {
+ success = false;
+ }
+
+ dns_name_format(client->query.qname,
+ namebuf, sizeof(namebuf));
+ isc_log_write(ns_g_lctx, NS_LOGCATEGORY_SERVE_STALE,
+ NS_LOGMODULE_QUERY, ISC_LOG_INFO,
+ "%s resolver failure, stale answer %s",
+ namebuf, success ? "used" : "unavailable");
+
+ if (!success) {

```

```

+ QUERY_ERROR(DNS_R_SERVFAIL);
+ goto cleanup;
+ }
+ }
+
resume:
CTRACE(ISC_LOG_DEBUG(3), "query_find: resume");

@@ -7676,6 +7778,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
    * The cache doesn't even have the root NS.  Get them from
    * the hints DB.
    */
+ // query_notfound
INSIST(!is_zone);
if (db != NULL)
    dns_db_detach(&db);
@@ -7738,12 +7841,14 @@ query_find(ns_client_t *client, dns_fetchevent_t
    *event, dns_rdatatype_t qtype)
    */
    /* FALLTHROUGH */
case DNS_R_DELEGATION:
+ // query_delegation
    authoritative = false;
    if (is_zone) {
        /*
         * Look to see if we are authoritative for the
         * child zone if the query type is DS.
         */
+ // query_zone_delegation
        if (!RECURSIONOK(client) &&
            (options & DNS_GETDB_NOEXACT) != 0 &&
            qtype == dns_rdatatype_ds) {
@@ -8130,6 +8235,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
        false, true);
    }
}
+ // query_nxdomain
if (dns_rdataset_isassociated(rdataset)) {
    /*
     * If we've got a NSEC record, we need to save the
@@ -8450,7 +8556,8 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
    /*
     * If we have a zero ttl from the cache refetch it.
     */
- if (!is_zone && !resuming && rdataset->ttl == 0 &&
+ // query_cname
+ if (!is_zone && !resuming && !STALE(rdataset) && rdataset->ttl == 0 &&
    RECURSIONOK(client))

```

```

{
  if (dns_rdataset_isassociated(rdataset))
@@ -8676,7 +8783,11 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
  "query_find: unexpected error after resuming: %s",
  isc_result_totext(result));
  CTRACE(ISC_LOG_ERROR, errmsg);
- QUERY_ERROR(DNS_R_SERVFAIL);
+ if (resuming) {
+   want_stale = true;
+ } else {
+   QUERY_ERROR(DNS_R_SERVFAIL);
+ }
  goto cleanup;
}

@@ -8932,7 +9043,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
/*
 * If we have a zero ttl from the cache refetch it.
 */
- if (!is_zone && !resuming && rdataset->ttl == 0 &&
+ if (!is_zone && !resuming && !STALE(rdataset) && rdataset->ttl == 0 &&
  RECURSIONOK(client))
{
  if (dns_rdataset_isassociated(rdataset))
@@ -8943,6 +9054,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
  if (node != NULL)
    dns_db_detachnode(db, &node);

+ // query_respond
  INSIST(!REDIRECT(client));
  result = query_recurse(client, qtype,
    client->query.qname,
@@ -9223,6 +9335,7 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
    dns_fixedname_name(&wildcardname),
    true, false);
  cleanup:
+ // query_done
  CTRACE(ISC_LOG_DEBUG(3), "query_find: cleanup");
/*
 * General cleanup.
@@ -9279,6 +9392,49 @@ query_find(ns_client_t *client, dns_fetchevent_t *event, dns_rdatatype_t qtype)
  goto restart;
}

+ if (want_stale) {
+   dns_ttl_t stale_ttl = 0;
+   isc_result_t result;
+   bool staleanswersok = false;

```

```

+
+ /*
+ * Stale answers only make sense if stale_ttl > 0 but
+ * we want rndc to be able to control returning stale
+ * answers if they are configured.
+ */
+ dns_db_attach(client->view->cachedb, &db);
+ result = dns_db_getservestalettl(db, &stale_ttl);
+ if (result == ISC_R_SUCCESS && stale_ttl > 0) {
+   switch (client->view->staleanswersok) {
+     case dns_stale_answer_yes:
+       staleanswersok
+       = true;
+       break;
+     case dns_stale_answer_conf:
+       staleanswersok =
+       client->view->staleanswersenable;
+       break;
+     case dns_stale_answer_no:
+       staleanswersok = false;
+       break;
+   }
+ } else {
+   staleanswersok = false;
+ }
+
+ if (staleanswersok) {
+   client->query.dboptions |= DNS_DBFIND_STALEOK;
+   inc_stats(client, dns_nsstatscounter_trystale);
+   if (client->query.fetch != NULL)
+     dns_resolver_destroyfetch(
+       &client->query.fetch);
+   goto db_find;
+ }
+ dns_db_detach(&db);
+ want_stale = false;
+ QUERY_ERROR(DNS_R_SERVFAIL);
+ goto cleanup;
+ }
+
+ if (eresult != ISC_R_SUCCESS &&
+     (!PARTIALANSWER(client) || WANTRECURSION(client)
+      || eresult == DNS_R_DROP)) {
diff --git a/bin/named/server.c b/bin/named/server.c
index 2bdf690..3a5ba91 100644
--- a/bin/named/server.c
+++ b/bin/named/server.c
@@ -1720,7 +1720,8 @@ static bool

```

```

cache_sharable(dns_view_t *originview, dns_view_t *view,
    bool new_zero_no_soattl,
    unsigned int new_cleaning_interval,
-   uint64_t new_max_cache_size)
+   uint64_t new_max_cache_size,
+   uint32_t new_stale_ttl)
{
/*
 * If the cache cannot even reused for the same view, it cannot be
@@ -1735,6 +1736,7 @@ cache_sharable(dns_view_t *originview, dns_view_t *view,
 */
if (dns_cache_getcleaninginterval(originview->cache) !=
    new_cleaning_interval ||
+   dns_cache_getservestalettl(originview->cache) != new_stale_ttl ||
    dns_cache_getcachesize(originview->cache) != new_max_cache_size) {
    return (false);
}
@@ -3290,6 +3292,7 @@ configure_view(dns_view_t *view, dns_viewlist_t *viewlist,
size_t max_ache_size;
size_t max_adb_size;
uint32_t lame_ttl, fail_ttl;
+ uint32_t max_stale_ttl;
dns_tsig_keyring_t *ring = NULL;
dns_view_t *pview = NULL; /* Production view */
isc_mem_t *cmctx = NULL, *hmctx = NULL;
@@ -3318,6 +3321,7 @@ configure_view(dns_view_t *view, dns_viewlist_t *viewlist,
bool old_rpz_ok
= false;
isc_dscp_t dscp4 = -1, dscp6 = -1;
dns_dyndbctx_t *dctx = NULL;
+ unsigned int resolver_param;

    REQUIRE(DNS_VIEW_VALID(view));

@@ -3732,6 +3736,24 @@ configure_view(dns_view_t *view, dns_viewlist_t *viewlist,
if (view->maxncachettl > 7 * 24 * 3600)
    view->maxncachettl = 7 * 24 * 3600;

+ obj = NULL;
+ result = ns_config_get(maps, "max-stale-ttl", &obj);
+ INSIST(result == ISC_R_SUCCESS);
+ max_stale_ttl = cfg_obj_asuint32(obj);
+
+ obj = NULL;
+ result = ns_config_get(maps, "stale-answer-enable", &obj);
+ INSIST(result == ISC_R_SUCCESS);
+ view->staleanswersenable = cfg_obj_asboolean(obj);
+

```

```

+ result = dns_viewlist_find(&ns_g_server->viewlist, view->name,
+   view->rdclass, &pview);
+ if (result == ISC_R_SUCCESS) {
+   view->staleanswersok = pview->staleanswersok;
+   dns_view_detach(&pview);
+ } else
+   view->staleanswersok = dns_stale_answer_conf;
+
+ /*
+  * Configure the view's cache.
+  *
@@ -3765,7+3787,8 @@ configure_view(dns_view_t *view, dns_viewlist_t
 *viewlist,
nsc = cachelist_find(cachelist, cachename, view->rdclass);
if (nsc != NULL) {
  if (!cache_sharable(nsc->primaryview, view, zero_no_soattl,
-   cleaning_interval, max_cache_size)) {
+   cleaning_interval, max_cache_size,
+   max_stale_ttl)) {
    isc_log_write(ns_g_lctx, NS_LOGCATEGORY_GENERAL,
      NS_LOGMODULE_SERVER, ISC_LOG_ERROR,
      "views %s and %s can't share the cache "
@@ -3864,9+3887,15 @@ configure_view(dns_view_t *view, dns_viewlist_t *viewlist,

dns_cache_setcleaninginterval(cache, cleaning_interval);
dns_cache_setcachesize(cache, max_cache_size);
+ dns_cache_setservestalettl(cache, max_stale_ttl);

dns_cache_detach(&cache);

+ obj = NULL;
+ result = ns_config_get(maps, "stale-answer-ttl", &obj);
+ INSIST(result == ISC_R_SUCCESS);
+ view->staleanswerttl = ISC_MAX(cfg_obj_asuint32(obj), 1);
+
+ /*
+  * Resolver.
+  *
@@ -4055,6+4084,21 @@ configure_view(dns_view_t *view, dns_viewlist_t *viewlist,
  maxbits = 4096;
  view->maxbits = maxbits;

+ /*
+  * Set resolver retry parameters.
+  */
+ obj = NULL;
+ CHECK(ns_config_get(maps, "resolver-retry-interval", &obj));
+ resolver_param = cfg_obj_asuint32(obj);

```



```

+ if (resolver_param > 0)
+ dns_resolver_setretryinterval(view->resolver, resolver_param);
+
+ obj = NULL;
+ CHECK(ns_config_get(maps, "resolver-nonbackoff-tries", &obj));
+ resolver_param = cfg_obj_asuint32(obj);
+ if (resolver_param > 0)
+ dns_resolver_setnonbackofftries(view->resolver, resolver_param);
+
+ /*
+  * Set supported DNSSEC algorithms.
+  */
@@ -14559,3 +14603,132 @@ ns_server_dnstap(ns_server_t *server, isc_lex_t *lex, isc_buffer_t **text) {
return (ISC_R_NOTIMPLEMENTED);
#endif
}
+
+isc_result_t
+ns_server_servestale(ns_server_t *server, isc_lex_t *lex,
+  isc_buffer_t **text)
+{
+ char *ptr, *classtxt, *viewtxt = NULL;
+ char msg[128];
+ dns_rdataclass_t rdclass = dns_rdataclass_in;
+ dns_view_t *view;
+ bool found = false;
+ dns_stale_answer_t staleanswersok = dns_stale_answer_conf;
+ bool
+ wantstatus = false;
+ isc_result_t result = ISC_R_SUCCESS;
+
+ /* Skip the command name. */
+ ptr = next_token(lex, text);
+ if (ptr == NULL)
+ return (ISC_R_UNEXPECTEDEND);
+
+ ptr = next_token(lex, NULL);
+ if (ptr == NULL)
+ return (ISC_R_UNEXPECTEDEND);
+
+ if (strcasecmp(ptr, "on") == 0 || strcasecmp(ptr, "yes") == 0) {
+ staleanswersok = dns_stale_answer_yes;
+ } else if (strcasecmp(ptr, "off") == 0 || strcasecmp(ptr, "no") == 0) {
+ staleanswersok = dns_stale_answer_no;
+ } else if (strcasecmp(ptr, "reset") == 0) {
+ staleanswersok = dns_stale_answer_conf;
+ } else if (strcasecmp(ptr, "status") == 0) {
+ wantstatus = true;

```

```

+ } else
+ return (DNS_R_SYNTAX);
+
+ /* Look for the optional class name. */
+ classtxt = next_token(lex, text);
+ if (classtxt != NULL) {
+ /* Look for the optional view name. */
+ viewtxt = next_token(lex, text);
+ }
+
+ if (classtxt != NULL) {
+ isc_textregion_t r;
+
+ r.base = classtxt;
+ r.length = strlen(classtxt);
+ result
+ = dns_rdataclass_fromtext(&rdclass, &r);
+ if (result != ISC_R_SUCCESS) {
+ if (viewtxt == NULL) {
+ viewtxt = classtxt;
+ classtxt = NULL;
+ result = ISC_R_SUCCESS;
+ } else {
+ snprintf(msg, sizeof(msg),
+ "unknown class '%s'", classtxt);
+ (void) putstr(text, msg);
+ goto cleanup;
+ }
+ }
+
+ result = isc_task_beginexclusive(server->task);
+ RUNTIME_CHECK(result == ISC_R_SUCCESS);
+
+ for (view = ISC_LIST_HEAD(server->viewlist);
+ view != NULL;
+ view = ISC_LIST_NEXT(view, link))
+ {
+ dns_ttl_t stale_ttl = 0;
+ dns_db_t *db = NULL;
+
+ if (classtxt != NULL && rdclass != view->rdclass)
+ continue;
+
+ if (viewtxt != NULL && strcmp(view->name, viewtxt) != 0)
+ continue;
+
+ if (!wantstatus) {

```

```

+ view->staleanswersok = staleanswersok;
+ found = true;
+ continue;
+ }
+
+ db = NULL;
+ dns_db_attach(view->cachedb, &db);
+ (void)dns_db_getservstalettl(db, &stale_ttl);
+ dns_db_detach(&db);
+ if (found)
+ CHECK(putstr(text,
+ "\n"));
+ CHECK(putstr(text, view->name));
+ CHECK(putstr(text, ": "));
+ switch (view->staleanswersok) {
+ case dns_stale_answer_yes:
+ if (stale_ttl > 0)
+ CHECK(putstr(text, "on (rndc)"));
+ else
+ CHECK(putstr(text, "off (not-cached)"));
+ break;
+ case dns_stale_answer_no:
+ CHECK(putstr(text, "off (rndc)"));
+ break;
+ case dns_stale_answer_conf:
+ if (view->staleanswersenable && stale_ttl > 0)
+ CHECK(putstr(text, "on"));
+ else if (view->staleanswersenable)
+ CHECK(putstr(text, "off (not-cached)"));
+ else
+ CHECK(putstr(text, "off"));
+ break;
+ }
+ if (stale_ttl > 0) {
+ snprintf(msg, sizeof(msg),
+ " (stale-answer-ttl=%u max-stale-ttl=%u)",
+ view->staleanswerttl, stale_ttl);
+ CHECK(putstr(text, msg));
+ }
+ found = true;
+ }
+ isc_task_endexclusive(ns_g_server->task);
+
+ if (!found)
+ result = ISC_R_NOTFOUND;
+
+ cleanup:
+ if (isc_buffer_usedlength(*text) > 0)

```

```

+ (void) putnull(text);
+
+ return (result);
+}
diff
--git a/bin/named/statschannel.c b/bin/named/statschannel.c
index 12ab048..4938c03 100644
--- a/bin/named/statschannel.c
+++ b/bin/named/statschannel.c
@@ -300,6 +300,12 @@ init_desc(void) {
SET_NSSTATDESC(reclimitdropped,
    "queries dropped due to recursive client limit",
    "RecLimitDropped");
+ SET_NSSTATDESC(trystale,
+   "attempts to use stale cache data after lookup failure",
+   "QryTryStale");
+ SET_NSSTATDESC(usedstale,
+   "successful uses of stale cache data after lookup failure",
+   "QryUsedStale");
INSIST(i == dns_nsstatscounter_max);

/* Initialize resolver statistics */
diff --git a/bin/rndc/rndc.c b/bin/rndc/rndc.c
index 0acfe3a..2c21c1d 100644
--- a/bin/rndc/rndc.c
+++ b/bin/rndc/rndc.c
@@ -160,6 +160,8 @@ command is one of the following:\n\
scan Scan available network interfaces for changes.\n\
secroots [view ...]\n\
Write security roots to the secroots file.\n\
+ serve-stale ( yes | no | reset ) [class
[view]]\n\
+ Control whether stale answers are returned\n\
showzone zone [class [view]]\n\
Print a zone's configuration.\n\
sign zone [class [view]]\n\
diff --git a/bin/rndc/rndc.docbook b/bin/rndc/rndc.docbook
index 159ded9..12a7208 100644
--- a/bin/rndc/rndc.docbook
+++ b/bin/rndc/rndc.docbook
@@ -689,6 +689,25 @@
</listitem>
</varlistentry>

+ <varlistentry>
+ <term><userinput>serve-stale ( on | off | reset | status) <optional><replaceable>class</replaceable>
<optional><replaceable>view</replaceable></optional></optional></userinput></term>
+ <listitem>

```

```

+ <para>
+   Enable, disable, or reset the serving of stale answers
+   as configured in named.conf. Serving of stale answers
+   will remain disabled across <filename>named.conf</filename>
+   reloads if disabled via rndc until it is reset via rndc.
+ </para>
+ <para>
+   Status will report whether serving of stale answers is
+   currently enabled, disabled or not configured for a
+
+   view. If serving of stale records is configured then
+   the values of stale-answer-ttl and max-stale-ttl are
+   reported.
+ </para>
+ </listitem>
+ </varlistentry>
+
+   <varlistentry>
+   <term><userinput>secroots <optional>-</optional> <optional><replaceable>view
+   ...</replaceable></optional></userinput></term>
+   <listitem>
+   diff --git a/bin/tests/system/chain/prereq.sh b/bin/tests/system/chain/prereq.sh
+   index 23bedcd..43385de 100644
+   --- a/bin/tests/system/chain/prereq.sh
+   +++ b/bin/tests/system/chain/prereq.sh
+   @@ -48,3 +48,10 @@ else
+       echo_i "This test requires the Net::DNS::Nameserver library." >&2
+       exit 1
+   fi
+   +if $PERL -e 'use Net::DNS::Nameserver;' 2>/dev/null
+   +then
+   + :
+   +else
+   +   echo "I:This test requires the Net::DNS::Nameserver library." >&2
+   +   exit 1
+   +fi
+   diff --git a/bin/tests/system/conf.sh.in b/bin/tests/system/conf.sh.in
+   index f6412f6..26c8901 100644
+   --- a/bin/tests/system/conf.sh.in
+   +++ b/bin/tests/system/conf.sh.in
+   @@ -128,7 +128,7 @@ PARALLELDIRS="dnssec
+   rpzrecurse \
+   reclimit redirect resolver rndc rootkeysentinel rpz \
+   rrchecker rrl rresetorder rsabigexponent runtime \
+   sfcache smartsign sortlist \
+   - spf staticstub statistics statschannel stub \
+   + spf serve-stale staticstub statistics statschannel stub \
+   tcp tsig tsiggss \

```

```

unknown upforwd verify views wildcard \
xfer xferquota zero zonechecks"
diff --git a/bin/tests/system/dyndb/driver/db.c b/bin/tests/system/dyndb/driver/db.c
index 02aa6ab..a77c7de 100644
--- a/bin/tests/system/dyndb/driver/db.c
+++ b/bin/tests/system/dyndb/driver/db.c
@@ -629,6 +629,8 @@ static dns_dbmethods_t sampledb_methods = {
    hashsize,
    NULL,
    NULL,
    + NULL,
    + NULL,
};

/* Auxiliary driver functions. */
diff --git a/bin/tests/system/serve-stale/.gitignore b/bin/tests/system/serve-stale/.gitignore
new file mode 100644
index 0000000..2272eef
--- /dev/null
+++ b/bin/tests/system/serve-stale/.gitignore
@@ -0,0 +1,11 @@
+/ans2/ans.pid
+/ans2/ans.pl
+/dig.out*
+/ns1/named.conf
+/ns3/named.conf
+/ns3/root.bk
+/rndc.out*
+named.lock
+named.pid
+named.port
+named.run
diff
--git a/bin/tests/system/serve-stale/ans2/ans.pl.in b/bin/tests/system/serve-stale/ans2/ans.pl.in
new file mode 100644
index 0000000..2b39eca
--- /dev/null
+++ b/bin/tests/system/serve-stale/ans2/ans.pl.in
@@ -0,0 +1,178 @@
+#!/usr/bin/env perl
+#
+# Copyright (C) 2014-2016 Internet Systems Consortium, Inc. ("ISC")
+#
+# This Source Code Form is subject to the terms of the Mozilla Public
+# License, v. 2.0. If a copy of the MPL was not distributed with this
+# file, You can obtain one at http://mozilla.org/MPL/2.0/.
+
+use strict;

```

```

+use warnings;
+
+use IO::File;
+use IO::Socket;
+use Getopt::Long;
+use Net::DNS;
+use Time::HiRes qw(usleep nanosleep);
+
+my $pidf = new IO::File "ans.pid", "w" or die "cannot open pid file: $!";
+print $pidf "$$\n" or die "cannot write pid file: $!";
+$pidf->close or die "cannot close pid file: $!";
+sub rmpid { unlink "ans.pid"; exit 1; };
+
+${SIG{INT}} = \&rmpid;
+${SIG{TERM}}
+  = \&rmpid;
+
+my $send_response = 1;
+
+my $localaddr = "10.53.0.2";
+my $localport = @PORT@;
+my $dupsock = IO::Socket::INET->new(LocalAddr => "$localaddr",
+  LocalPort => $localport, Proto => "udp", Reuse => 1) or die "$!";
+
+#
+# Delegation
+#
+my $SOA = "example 300 IN SOA . . 0 0 0 0 300";
+my $NS = "example 300 IN NS ns.example";
+my $A = "ns.example 300 IN A $localaddr";
+#
+# Records to be TTL stretched
+#
+my $TXT = "data.example 1 IN TXT \"A text record with a 1 second ttl\"";
+my $negSOA = "example 1 IN SOA . . 0 0 0 0 300";
+
+sub reply_handler {
+  my ($qname, $qclass, $qtype) = @_ ;
+  my ($rcode, @ans, @auth, @add);
+
+  print ("request: $qname/$qtype\n");
+  STDOUT->flush();
+
+  # Control whether we send a response or not.
+  # We always respond to control commands.
+  if ($qname eq "enable" ) {
+  if ($qtype eq "TXT") {
+    $send_response = 1;

```

```

+     my $rr = new Net::DNS::RR("$qname 0 $qclass TXT \"$send_response\");
+     push @ans, $rr;
+ }
+ $rcode
+ = "NOERROR";
+     return ($rcode, \@ans, \@auth, \@add, { aa => 1 });
+ } elsif ($qname eq "disable" ) {
+ if ($qtype eq "TXT") {
+     $send_response = 0;
+     my $rr = new Net::DNS::RR("$qname 0 $qclass TXT \"$send_response\");
+     push @ans, $rr;
+ }
+ $rcode = "NOERROR";
+     return ($rcode, \@ans, \@auth, \@add, { aa => 1 });
+ }
+
+ # If we are not responding to queries we are done.
+ return if (!$send_response);
+
+ # Construct the response and send it.
+ if ($qname eq "ns.example" ) {
+ if ($qtype eq "A" ) {
+     my $rr = new Net::DNS::RR($A);
+     push @ans, $rr;
+ } else {
+     my $rr = new Net::DNS::RR($SOA);
+     push @auth, $rr;
+ }
+ $rcode = "NOERROR";
+ } elsif ($qname eq "example") {
+ if ($qtype eq "NS") {
+     my $rr = new Net::DNS::RR($NS);
+     push @auth, $rr;
+     $rr = new Net::DNS::RR($A);
+     push @add, $rr;
+ } elsif ($qtype eq "SOA") {
+     my $rr = new Net::DNS::RR($SOA);
+     push @ans,
+     $rr;
+ } else {
+     my $rr = new Net::DNS::RR($SOA);
+     push @auth, $rr;
+ }
+ $rcode = "NOERROR";
+ } elsif ($qname eq "nodata.example") {
+ my $rr = new Net::DNS::RR($negSOA);
+ push @auth, $rr;
+ $rcode = "NOERROR";

```



```

+ } elsif ($qname eq "data.example") {
+ if ($qtype eq "TXT") {
+   my $rr = new Net::DNS::RR($TXT);
+   push @ans, $rr;
+ } else {
+   my $rr = new Net::DNS::RR($negSOA);
+   push @auth, $rr;
+ }
+ $rcode = "NOERROR";
+ } elsif ($qname eq "nxdomain.example") {
+ my $rr = new Net::DNS::RR($negSOA);
+ push @auth, $rr;
+ $rcode = "NXDOMAIN";
+ } else {
+   my $rr = new Net::DNS::RR($SOA);
+ push @auth, $rr;
+ $rcode = "NXDOMAIN";
+ }
+
+ # mark the answer as authoritative (by setting the 'aa' flag
+ return ($rcode, \@ans, \@auth, \@add, { aa => 1 });
+}
+
+GetOptions(
+ 'port=i' => \$localport,
+);
+
+my $rin;
+my $rout;
+
+for (;;) {
+ $rin = "";
+ vec($rin, fileno($udpsoc), 1) = 1;
+
+ select($rout = $rin, undef, undef, undef);
+
+ if
+ (vec($rout, fileno($udpsoc), 1)) {
+   my ($buf, $request, $err);
+   $udpsoc->recv($buf, 512);
+
+   if ($Net::DNS::VERSION > 0.68) {
+     $request = new Net::DNS::Packet(\$buf, 0);
+     @$ and die @$;
+   } else {
+     my $err;
+     ($request, $err) = new Net::DNS::Packet(\$buf, 0);
+     $err and die $err;

```

```

+ }
+
+ my @questions = $request->question;
+ my $qname = $questions[0]->qname;
+ my $qclass = $questions[0]->qclass;
+ my $qtype = $questions[0]->qtype;
+ my $id = $request->header->id;
+
+ my ($rcode, $ans, $auth, $add, $headermask) = reply_handler($qname, $qclass, $qtype);
+
+ if (!defined($rcode)) {
+   print " Silently ignoring query\n";
+   next;
+ }
+
+ my $reply = Net::DNS::Packet->new();
+ $reply->header->qr(1);
+ $reply->header->aa(1) if $headermask->{'aa'};
+ $reply->header->id($id);
+ $reply->header->rcode($rcode);
+ $reply->push("question", @questions);
+ $reply->push("answer", @$ans) if $ans;
+ $reply->push("authority", @$auth) if $auth;
+ $reply->push("additional",
+   @$add) if $add;
+
+ my $num_chars = $udpsock->send($reply->data);
+ print " Sent $num_chars bytes via UDP\n";
+ }
+}
diff --git a/bin/tests/system/serve-stale/clean.sh b/bin/tests/system/serve-stale/clean.sh
new file mode 100644
index 0000000..2397326
--- /dev/null
+++ b/bin/tests/system/serve-stale/clean.sh
@@ -0,0 +1,15 @@
+## Copyright (C) 2017 Internet Systems Consortium, Inc. ("ISC")
+##
+## This Source Code Form is subject to the terms of the Mozilla Public
+## License, v. 2.0. If a copy of the MPL was not distributed with this
+## file, You can obtain one at http://mozilla.org/MPL/2.0/.
+
+rm -f test.output
+rm -f dig.out.test*
+rm -f ans2/ans.pl
+rm -f ns3/root.bk
+rm -f rndc.out.test*
+rm -f ns*/named.memstats

```

```

+rm -f ns*/managed-keys.bind
+rm -f ns*/named.conf
+rm -f ns*/named.run
diff --git a/bin/tests/system/serve-stale/ns1/named1.conf.in b/bin/tests/system/serve-stale/ns1/named1.conf.in
new file mode 100644
index 0000000..8a75a10
--- /dev/null
+++
b/bin/tests/system/serve-stale/ns1/named1.conf.in
@@ -0,0 +1,35 @@
+/*
+ * Copyright (C) 2017 Internet Systems Consortium, Inc. ("ISC")
+ *
+ * This Source Code Form is subject to the terms of the Mozilla Public
+ * License, v. 2.0. If a copy of the MPL was not distributed with this
+ * file, You can obtain one at http://mozilla.org/MPL/2.0/.
+ */
+
+key rndc_key {
+    secret "1234abcd8765";
+    algorithm hmac-sha256;
+};
+
+controls {
+    inet 10.53.0.1 port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};
+
+options {
+    query-source address 10.53.0.1;
+    notify-source 10.53.0.1;
+    transfer-source 10.53.0.1;
+    port @PORT@;
+    pid-file "named.pid";
+    listen-on { 10.53.0.1; };
+    listen-on-v6 { none; };
+    recursion yes;
+    max-stale-ttl 3600;
+    stale-answer-ttl 1;
+    stale-answer-enable yes;
+};
+
+zone "." {
+    type master;
+    file "root.db";
+};
diff --git a/bin/tests/system/serve-stale/ns1/named2.conf.in b/bin/tests/system/serve-stale/ns1/named2.conf.in
new file mode 100644
index

```

```

0000000..072e6ec
--- /dev/null
+++ b/bin/tests/system/serve-stale/ns1/named2.conf.in
@@ -0,0 +1,35 @@
+/*
+ * Copyright (C) 2017 Internet Systems Consortium, Inc. ("ISC")
+ *
+ * This Source Code Form is subject to the terms of the Mozilla Public
+ * License, v. 2.0. If a copy of the MPL was not distributed with this
+ * file, You can obtain one at http://mozilla.org/MPL/2.0/.
+ */
+
+key rndc_key {
+    secret "1234abcd8765";
+    algorithm hmac-sha256;
+};
+
+controls {
+    inet 10.53.0.1 port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};
+
+options {
+    query-source address 10.53.0.1;
+    notify-source 10.53.0.1;
+    transfer-source 10.53.0.1;
+    port @PORT@;
+    pid-file "named.pid";
+    listen-on { 10.53.0.1; };
+    listen-on-v6 { none; };
+    recursion yes;
+    max-stale-ttl 7200;
+    stale-answer-ttl 2;
+    stale-answer-enable yes;
+};
+
+zone "." {
+    type master;
+    file "root.db";
+};
diff --git a/bin/tests/system/serve-stale/ns1/root.db b/bin/tests/system/serve-stale/ns1/root.db
new
file mode 100644
index 0000000..eb9ad3e
--- /dev/null
+++ b/bin/tests/system/serve-stale/ns1/root.db
@@ -0,0 +1,5 @@
+. 300 SOA . . 0 0 0 0 0
+. 300 NS ns.nil.

```

```

+ns.nil. 300 A 10.53.0.1
+example. 300 NS ns.example.
+ns.example. 300 A 10.53.0.2
diff --git a/bin/tests/system/serve-stale/ns3/named.conf.in b/bin/tests/system/serve-stale/ns3/named.conf.in
new file mode 100644
index 0000000..24a3293
--- /dev/null
+++ b/bin/tests/system/serve-stale/ns3/named.conf.in
@@ -0,0 +1,35 @@
+/*
+ * Copyright (C) 2017 Internet Systems Consortium, Inc. ("ISC")
+ *
+ * This Source Code Form is subject to the terms of the Mozilla Public
+ * License, v. 2.0. If a copy of the MPL was not distributed with this
+ * file, You can obtain one at http://mozilla.org/MPL/2.0/.
+ */
+
+key rndc_key {
+    secret "1234abcd8765";
+    algorithm hmac-sha256;
+};
+
+controls {
+    inet 10.53.0.3 port @CONTROLPORT@ allow { any; } keys { rndc_key; };
+};
+
+options {
+    query-source address 10.53.0.3;
+    notify-source
+        10.53.0.3;
+    transfer-source 10.53.0.3;
+    port @PORT@;
+    pid-file "named.pid";
+    listen-on { 10.53.0.3; };
+    listen-on-v6 { none; };
+    recursion yes;
+    // max-stale-ttl 3600;
+    // stale-answer-ttl 3;
+};
+
+zone "." {
+    type slave;
+    masters { 10.53.0.1; };
+    file "root.bk";
+};
diff --git a/bin/tests/system/serve-stale/prereq.sh b/bin/tests/system/serve-stale/prereq.sh
new file mode 100644
index 0000000..a3bbef8

```

```

--- /dev/null
+++ b/bin/tests/system/serve-stale/prereq.sh
@@ -0,0 +1,38 @@
+#!/bin/sh
+#
+# Copyright (C) 2011, 2012, 2014, 2016 Internet Systems Consortium, Inc. ("ISC")
+#
+# This Source Code Form is subject to the terms of the Mozilla Public
+# License, v. 2.0. If a copy of the MPL was not distributed with this
+# file, You can obtain one at http://mozilla.org/MPL/2.0/.
+
+SYSTEMTESTTOP=..
+. $SYSTEMTESTTOP/conf.sh
+
+if $PERL -e 'use Net::DNS;' 2>/dev/null
+then
+  if $PERL -e 'use Net::DNS; die if ($Net::DNS::VERSION >= 0.69 && $Net::DNS::VERSION <= 0.74);'
+  2>/dev/null
+  then
+    :
+  else
+    echo "I:Net::DNS versions 0.69 to 0.74 have bugs that cause this test to fail: please update." >&2
+    exit 1
+  fi
+else
+  echo "I:This test requires the Net::DNS library." >&2
+  exit 1
+fi
+if $PERL -e 'use Net::DNS::Nameserver;' 2>/dev/null
+then
+  :
+else
+  echo "I:This test requires the Net::DNS::Nameserver library." >&2
+  exit 1
+fi
+if $PERL -e 'use Time::HiRes;' 2>/dev/null
+then
+  :
+else
+  echo "I:This test requires the Time::HiRes library." >&2
+  exit 1
+fi
diff --git a/bin/tests/system/serve-stale/setup.sh b/bin/tests/system/serve-stale/setup.sh
new file mode 100644
index 0000000..690f43c
--- /dev/null
+++ b/bin/tests/system/serve-stale/setup.sh
@@ -0,0 +1,13 @@

```

```

+#!/bin/sh
+# Copyright (C) 2017 Internet Systems Consortium, Inc. ("ISC")
+#
+# This Source Code Form is subject to the terms of the Mozilla Public
+# License, v. 2.0. If a copy of the MPL was not distributed with this
+# file, You can obtain one at
+http://mozilla.org/MPL/2.0/.
+
+SYSTEMTESTTOP=..
+. $SYSTEMTESTTOP/conf.sh
+
+copy_setports ns1/named1.conf.in ns1/named.conf
+copy_setports ans2/ans.pl.in ans2/ans.pl
+copy_setports ns3/named.conf.in ns3/named.conf
diff --git a/bin/tests/system/serve-stale/tests.sh b/bin/tests/system/serve-stale/tests.sh
new file mode 100755
index 0000000..201c996
--- /dev/null
+++ b/bin/tests/system/serve-stale/tests.sh
@@ -0,0 +1,536 @@
+#!/bin/sh
+#
+# Copyright (C) 2000, 2001, 2004, 2007, 2009-2016 Internet Systems Consortium, Inc. ("ISC")
+#
+# This Source Code Form is subject to the terms of the Mozilla Public
+# License, v. 2.0. If a copy of the MPL was not distributed with this
+# file, You can obtain one at http://mozilla.org/MPL/2.0/.
+
+SYSTEMTESTTOP=..
+. $SYSTEMTESTTOP/conf.sh
+
+while getopts "p:c:" flag; do
+  case "$flag" in
+  p) port=$OPTARG ;;
+  c) controlport=$OPTARG ;;
+  *) exit 1 ;;
+  esac
+done
+
+RNDCCMD="$SRNDC -c $SYSTEMTESTTOP/common/rndc.conf -p ${CONTROLPORT} -s"
+
+echo
+"RNDCCMD: ${RNDCCMD}"
+
+status=0
+n=0
+
+#echo "I:check ans.pl server ($n)"

```

```

+##$DIG -p ${PORT} @10.53.0.2 example NS
+##$DIG -p ${PORT} @10.53.0.2 example SOA
+##$DIG -p ${PORT} @10.53.0.2 ns.example A
+##$DIG -p ${PORT} @10.53.0.2 ns.example AAAA
+##$DIG -p ${PORT} @10.53.0.2 txt enable
+##$DIG -p ${PORT} @10.53.0.2 txt disable
+##$DIG -p ${PORT} @10.53.0.2 ns.example AAAA
+##$DIG -p ${PORT} @10.53.0.2 txt enable
+##$DIG -p ${PORT} @10.53.0.2 ns.example AAAA
+###$DIG -p ${PORT} @10.53.0.2 data.example TXT
+##$DIG -p ${PORT} @10.53.0.2 nodata.example TXT
+##$DIG -p ${PORT} @10.53.0.2 nxdomain.example TXT
+
+n=`expr $n + 1`
+echo "I:prime cache data.example ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:prime cache nodata.example ($n)"
+ret=0
+$DIG -p ${PORT}
@10.53.0.1 nodata.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:prime cache nxdomain.example ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$n
+grep "status: NXDOMAIN" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:disable responses from authoritative server ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.2 txt disable > dig.out.test$n
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "TXT.\\" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi

```



```

+status=`expr $status + $ret`
+
+sleep 1
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale
status > rndc.out.test$n 2>&1 || ret=1
+grep '_default: on (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale data.example ($n)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nodata.example ($n)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.1 nodata.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo
+echo "I:check stale nxdomain.example ($n)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$n
+grep "status: NXDOMAIN" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale off' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale off || ret=1

```

```

+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+$RNDCCMD 10.53.0.1 serve-stale status > rndc.out.test$n 2>&1 || ret=1
+grep '_default: off (rndc) (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale data.example (serve-stale off) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 data.example
TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nxdomain.example (serve-stale off) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nxdomain.example (serve-stale off) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale on' ($n)"
+ret=0
+$RNDCCMD 10.53.0.1 serve-stale on || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr
$n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"

```

```

+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale status > rndc.out.test${N} 2>&1 || ret=1
+grep '_default: on (rndc) (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test${N} > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale data.example (serve-stale on) ($N)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test${N}
+grep "status: NOERROR" dig.out.test${N} > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test${N} > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test${N} > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nodata.example (serve-stale on) ($N)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.1 nodata.example TXT > dig.out.test${N}
+grep "status: NOERROR" dig.out.test${N} > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test${N} > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test${N}
> /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nxdomain.example (serve-stale on) ($N)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test${N}
+grep "status: NXDOMAIN" dig.out.test${N} > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test${N} > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test${N} > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale no' ($N)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale no || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($N)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale status > rndc.out.test${N} 2>&1 || ret=1

```

```

+grep '_default: off (rndc) (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test$ > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr
$status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale data.example (serve-stale no) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test$
+grep "status: SERVFAIL" dig.out.test$ > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nodata.example (serve-stale no) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nodata.example TXT > dig.out.test$
+grep "status: SERVFAIL" dig.out.test$ > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nxdomain.example (serve-stale no) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$
+grep "status: SERVFAIL" dig.out.test$ > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale
yes' ($n)"
+ret=0
+$RNDCCMD 10.53.0.1 serve-stale yes || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+$RNDCCMD 10.53.0.1 serve-stale status > rndc.out.test$ 2>&1 || ret=1
+grep '_default: on (rndc) (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test$ > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`

```

```

+echo "I:check stale data.example (serve-stale yes) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nodata.example (serve-stale yes) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nodata.example TXT > dig.out.test$n
+grep
"status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nxdomain.example (serve-stale yes) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$n
+grep "status: NXDOMAIN" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale off' ($n)"
+ret=0
+$RNDCCMD 10.53.0.1 serve-stale off || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale reset' ($n)"
+ret=0
+$RNDCCMD 10.53.0.1 serve-stale reset || ret=1
+if [ $ret != 0 ]; then echo "I:failed";
fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0

```

```

+SRNDCCMD 10.53.0.1 serve-stale status > rndc.out.test$N 2>&1 || ret=1
+grep '_default: on (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test$N > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale data.example (serve-stale reset) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test$N
+grep "status: NOERROR" dig.out.test$N > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test$N > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$N > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nodata.example (serve-stale reset) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nodata.example TXT > dig.out.test$N
+grep "status: NOERROR" dig.out.test$N > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$N
> /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$N > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check stale nxdomain.example (serve-stale reset) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.1 nxdomain.example TXT > dig.out.test$N
+grep "status: NXDOMAIN" dig.out.test$N > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$N > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$N > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc serve-stale off' ($n)"
+ret=0
+SRNDCCMD 10.53.0.1 serve-stale off || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+SRNDCCMD 10.53.0.1 serve-stale status > rndc.out.test$N 2>&1 || ret=1
+grep '_default: off (rndc) (stale-answer-ttl=1 max-stale-ttl=3600)' rndc.out.test$N > /dev/null || ret=1

```

```

+if
[ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:updating ns1/named.conf ($n)"
+ret=0
+sed -e "s/@PORT@/{PORT}/g;s/@CONTROLPORT@/{CONTROLPORT}/g" < ns1/named2.conf.in >
ns1/named.conf
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:running 'rndc reload' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.1 reload > rndc.out.test$n 2>&1 || ret=1
+grep "server reload successful" rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale status > rndc.out.test$n 2>&1 || ret=1
+grep '_default: off (rndc) (stale-answer-ttl=2 max-stale-ttl=7200)' rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale
> rndc.out.test$n 2>&1 && ret=1
+grep "unexpected end of input" rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale unknown' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.1 serve-stale unknown > rndc.out.test$n 2>&1 && ret=1
+grep "syntax error" rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo_i "flush cache, re-enable serve-stale and query again ($n)"
+ret=0

```

```

+$RNDCCMD 10.53.0.1 flushtree example > rndc.out.test$n.1 2>&1 || ret=1
+$RNDCCMD 10.53.0.1 serve-stale on > rndc.out.test$n.2 2>&1 || ret=1
+$DIG -p ${PORT} @10.53.0.1 data.example TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo_i "failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+ret=0
+$DIG -p ${PORT} @10.53.0.2 txt enable
> dig.out.test$n
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "TXT.\"1\""" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:prime cache data.example (max-stale-ttl default) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.3 data.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:prime cache nodata.example (max-stale-ttl default) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.3 nodata.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status
+ $ret`
+
+n=`expr $n + 1`
+echo "I:prime cache nxdomain.example (max-stale-ttl default) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.3 nxdomain.example TXT > dig.out.test$n
+grep "status: NXDOMAIN" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+

```



```

+n=`expr $n + 1`
+echo "I:disable responses from authoritative server ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.2 txt disable > dig.out.test$n
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "TXT.\\"0\\" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+sleep 1
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+$RNDCCMD 10.53.0.3 serve-stale status > rndc.out.test$n 2>&1 || ret=1
+grep '_default: off (stale-answer-ttl=1 max-stale-ttl=604800)' rndc.out.test$n > /dev/null || ret=1
+if
[ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check fail of data.example (max-stale-ttl default) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.3 data.example TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check fail of nodata.example (max-stale-ttl default) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.3 nodata.example TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check fail of nxdomain.example (max-stale-ttl default) ($n)"
+ret=0
+$DIG -p ${PORT} @10.53.0.3 nxdomain.example TXT > dig.out.test$n
+grep "status: SERVFAIL" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER:
0," dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+

```

```

+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale on' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.3 serve-stale on > rndc.out.test$n 2>&1 || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check 'rndc serve-stale status' ($n)"
+ret=0
+${RNDCCMD} 10.53.0.3 serve-stale status > rndc.out.test$n 2>&1 || ret=1
+grep '_default: on (rndc) (stale-answer-ttl=1 max-stale-ttl=604800)' rndc.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check data.example (max-stale-ttl default) ($n)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.3 data.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 1," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo
"I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check nodata.example (max-stale-ttl default) ($n)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.3 nodata.example TXT > dig.out.test$n
+grep "status: NOERROR" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+n=`expr $n + 1`
+echo "I:check nxdomain.example (max-stale-ttl default) ($n)"
+ret=0
+${DIG} -p ${PORT} @10.53.0.3 nxdomain.example TXT > dig.out.test$n
+grep "status: NXDOMAIN" dig.out.test$n > /dev/null || ret=1
+grep "ANSWER: 0," dig.out.test$n > /dev/null || ret=1
+grep "example.*1.*IN" dig.out.test$n > /dev/null || ret=1
+if [ $ret != 0 ]; then echo "I:failed"; fi
+status=`expr $status + $ret`
+
+echo "I:exit status: $status"
+[ $status -eq 0 ] || exit 1

```

diff --git a/doc/arm/Bv9ARM-book.xml b/doc/arm/Bv9ARM-book.xml

index 99c8680..5fbabfe 100644

a/doc/arm/Bv9ARM-book.xml

+++ b/doc/arm/Bv9ARM-book.xml

@@ -4336,6 +4336,9 @@ badresp:1,adberr:0,findfail:0,valfail:0]

statement in the <filename>named.conf</filename> file:

</para>

<xi:include xmlns:xi="http://www.w3.org/2001/XInclude" href="options.grammar.xml"/>

+ [<command>max-stale-ttl</command> <replaceable>number</replaceable> ;]

+ [<command>stale-answer-enable</command> <replaceable>yes_or_no</replaceable> ;]

+ [<command>stale-answer-ttl</command> <replaceable>number</replaceable> ;]

</section>

<section xml:id="options"><info><title><command>options</command> Statement Definition and

@@ -4429,6 +4432,7 @@ badresp:1,adberr:0,findfail:0,valfail:0]

<command>dnssec-validation</command>,

<command>max-cache-ttl</command>,

<command>max-ncache-ttl</command>,

+ <command>max-stale-ttl</command>,

<command>max-cache-size</command>, and

<command>zero-no-soa-ttl</command>.

</para>

@@ -5438,7 +5442,6 @@ options {

</listitem>

</varlistentry>

-

<varlistentry>

<term><command>max-zone-ttl</command></term>

<listitem>

@@ -5474,6 +5477,21 @@ options {

</listitem>

</varlistentry>

+ <varlistentry>

+ <term><command>stale-answer-ttl</command></term>

+ <listitem>

+ <para>

+ Specifies the TTL to be returned on stale answers.

+ The default is 1 second. The minimal allowed is

+ also 1 second; a value of 0 will be updated silently

+ to 1 second. For stale answers to be returned

+ <option>max-stale-ttl</option> must be set to a

+ non zero value and they must not have been disabled

+ by <command>rndc</command>.

+ </para>

+ </listitem>

```

+ </varlistentry>
+
  <varlistentry>
    <term><command>serial-update-method</command></term>
    <listitem>
@@ -6227,6 +6245,22 @@ options {
    </listitem>
  </varlistentry>

+ <varlistentry>
+ <term><command>serve-stale-enable</command></term>
+ <listitem>
+ <para>
+ Enable the
+ returning of stale answers when the
+ nameservers for the zone are not answering. This
+ is off by default but can be enabled/disabled via
+ <command>rncd server-stale on</command> and
+ <command>rncd server-stale off</command> which
+ override the named.conf setting. <command>rncd
+ server-stale reset</command> will restore control
+ via named.conf.
+ </para>
+ </listitem>
+ </varlistentry>
+
  <varlistentry>
    <term><command>nocookie-udp-size</command></term>
    <listitem>
@@ -7449,13 +7483,19 @@ options {
    <term><command>resolver-query-timeout</command></term>
    <listitem>
<para>
- This is the amount of time in seconds that the
- resolver spends attempting to resolve a recursive
- query before failing. The default and minimum
- is <literal>10</literal> and the maximum is
- <literal>30</literal>. Setting it to
- <literal>0</literal> results in the default
- being used.
+ The amount of time in
+ milliseconds that the resolver
+ will spend attempting to resolve a recursive
+ query before failing. The default and minimum
+ is <literal>10000</literal> and the maximum is
+ <literal>30000</literal>. Setting it to
+ <literal>0</literal> will result in the default
+ being used.

```

```

+ </para>
+ <para>
+ This value was originally specified in seconds.
+ Values less than or equal to 300 will be be treated
+ as seconds and converted to milliseconds before
+ applying the above limits.
</para>
  </listitem>
</varlistentry>
@@ -9016,6 +9056,27 @@ avoid-v6-udp-ports { 40000; range 50000 60000; };
  </listitem>
</varlistentry>

+ <varlistentry>
+ <term><command>max-stale-ttl</command></term>
+ <listitem>
+ <para>
+ Sets the maximum time for which the server will
+ retain records past their normal expiry to
+ return them as stale records when the servers
+ for those records are not reachable. The default
+
+ is to not retain the record.
+ </para>
+ <para>
+ <command>rncd serve-stale</command> can be used
+ to disable and re-enable the serving of stale
+ records at runtime. Reloading or reconfiguring
+ <command>named</command> will not re-enable serving
+ of stale records if they have been disabled via
+ <command>rncd</command>.
+ </para>
+ </listitem>
+ </varlistentry>
+
+ <varlistentry>
+ <term><command>min-roots</command></term>
+ <listitem>
diff --git a/doc/arm/logging-categories.xml b/doc/arm/logging-categories.xml
index 56d05e8..098342b 100644
--- a/doc/arm/logging-categories.xml
+++ b/doc/arm/logging-categories.xml
@@ -311,6 +311,17 @@
  </para>
</entry>
</row>
+ <row rowsep="0">
+ <entry colname="1">

```

```
+ <para><command>serve-stale</command></para>
+ </entry>
+ <entry colname="2">
+ <para>
+   Whether or not a stale answer is used
+   following a resolver failure.
+ </para>
+ </entry>
+ </row>
```

```
<row rowsep="0">
<entry colname="1">
  <para><command>spill</command></para>
diff --git a/doc/arm/notes-rh-changes.xml b/doc/arm/notes-rh-changes.xml
index 89a4961..80b7dee 100644
--- a/doc/arm/notes-rh-changes.xml
+++ b/doc/arm/notes-rh-changes.xml
@@ -12,6 +12,9 @@
<section xml:id="relnotes_rh_changes"><info><title>Red Hat Specific Changes</title></info>
  <itemizedlist>
    <listitem>
+ <para>
+   This version includes some features not present in releases by ISC.
+ </para>
    <para>
      By default, BIND now uses the random number generation functions
      in the cryptographic library (i.e., OpenSSL or a PKCS#11
@@ -36,7 +39,16 @@
      case <filename>/dev/random</filename> will be the default
      entropy source. [RT #31459] [RT #46047]
    </para>
- </listitem>
+ <para>
+   When acting as a recursive resolver, <command>named</command>
+   can now continue returning answers whose TTLs have expired
+   when the
+   authoritative server is under attack and unable to
+   respond. This is controlled by the
+   <command>stale-answer-enable</command>,
+   <command>stale-answer-ttl</command> and
+   <command>max-stale-ttl</command> options. [RT #44790]
+ </para>
+ </listitem>
  </itemizedlist>
</section>
```

```
diff --git a/doc/misc/options b/doc/misc/options
index e11beed..fde93c7 100644
```

```

--- a/doc/misc/options
+++ b/doc/misc/options
@@ -225,6 +225,7 @@ options {
    max-refresh-time <integer>;
    max-retry-time <integer>;
    max-rsa-exponent-size <integer>;
+   max-stale-ttl <ttlval>;
    max-transfer-idle-in <integer>;
    max-transfer-idle-out <integer>;
    max-transfer-time-in <integer>;
@@ -298,7 +299,9 @@ options {
    request-sit <boolean>; // obsolete
    require-server-cookie <boolean>;
    reserved-sockets <integer>;
+   resolver-nonbackoff-tries <integer>;
    resolver-query-timeout <integer>;
+   resolver-retry-interval
<integer>;
    response-policy { zone <string> [ log <boolean> ] [ max-policy-ttl
    <integer> ] [ policy ( cname | disabled | drop | given | no-op
    | nodata | nxdomain | passthru | tcp-only <quoted_string> ) ] [
@@ -328,6 +331,8 @@ options {
    sit-secret <string>; // obsolete
    sortlist { <address_match_element>; ... };
    stacksize ( default | unlimited | <sizeval> );
+   stale-answer-enable <boolean>;
+   stale-answer-ttl <ttlval>;
    startup-notify-rate <integer>;
    statistics-file <quoted_string>;
    statistics-interval <integer>; // not yet implemented
@@ -539,6 +544,7 @@ view <string> [ <class> ] {
    max-recursion-queries <integer>;
    max-refresh-time <integer>;
    max-retry-time <integer>;
+   max-stale-ttl <ttlval>;
    max-transfer-idle-in <integer>;
    max-transfer-idle-out <integer>;
    max-transfer-time-in <integer>;
@@ -600,7 +606,9 @@ view <string> [ <class> ] {
    request-nsid <boolean>;
    request-sit <boolean>; // obsolete
    require-server-cookie <boolean>;
+   resolver-nonbackoff-tries <integer>;
    resolver-query-timeout <integer>;
+   resolver-retry-interval <integer>;
    response-policy { zone <string> [ log <boolean> ] [ max-policy-ttl
    <integer> ] [ policy ( cname | disabled | drop | given | no-op

```

```

    | nodata | nxdomain | passthru | tcp-only <quoted_string> ) ] [
@@ -655,6 +663,8 @@ view <string> [ <class> ] {
    sig-signing-type <integer>;
    sig-validity-interval <integer> [ <integer> ];
    sortlist { <address_match_element>; ... };
+   stale-answer-enable <boolean>;
+   stale-answer-ttl <ttlval>;
    suppress-initial-notify <boolean>; // not yet implemented
    topology { <address_match_element>; ... }; // not implemented
    transfer-format ( many-answers | one-answer );
diff --git a/lib/bind9/check.c
b/lib/bind9/check.c
index bf769fe..6c57fa4 100644
--- a/lib/bind9/check.c
+++ b/lib/bind9/check.c
@@ -99,7 +99,8 @@ check_orderent(const cfg_obj_t *ent, isc_log_t *logctx) {
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "rrset-order: invalid class '%s'",
        r.base);
-   result = ISC_R_FAILURE;
+   if (result == ISC_R_SUCCESS)
+   result = ISC_R_FAILURE;
    }
}

@@ -112,7 +113,8 @@ check_orderent(const cfg_obj_t *ent, isc_log_t *logctx) {
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "rrset-order: invalid type '%s'",
        r.base);
-   result = ISC_R_FAILURE;
+   if (result == ISC_R_SUCCESS)
+   result = ISC_R_FAILURE;
    }
}

@@ -126,7 +128,8 @@ check_orderent(const cfg_obj_t *ent, isc_log_t *logctx) {
    if (result != ISC_R_SUCCESS) {
        cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
            "rrset-order: invalid name '%s'", str);
-   result = ISC_R_FAILURE;
+   if (result == ISC_R_SUCCESS)
+   result = ISC_R_FAILURE;
    }
}

@@ -135,14 +138,16 @@
check_orderent(const cfg_obj_t *ent, isc_log_t *logctx) {
    strcasecmp("order", cfg_obj_asstring(obj)) != 0) {

```



```

    cfg_obj_log(ent, logctx, ISC_LOG_ERROR,
        "rrset-order: keyword 'order' missing");
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
}

obj = cfg_tuple_get(ent, "ordering");
if (!cfg_obj_isstring(obj)) {
    cfg_obj_log(ent, logctx, ISC_LOG_ERROR,
        "rrset-order: missing ordering");
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
} else if (strcasecmp(cfg_obj_asstring(obj), "fixed") == 0) {
#if !DNS_RDATASET_FIXED
    cfg_obj_log(obj, logctx, ISC_LOG_WARNING,
@@ -154,7 +159,8 @@ check_orderent(const cfg_obj_t *ent, isc_log_t *logctx) {
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "rrset-order: invalid order '%s'",
        cfg_obj_asstring(obj));
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
}
return (result);
}
@@ -174,7 +180,7
@@ check_order(const cfg_obj_t *options, isc_log_t *logctx) {
    element = cfg_list_next(element)
    {
        tresult = check_orderent(cfg_listelt_value(element), logctx);
- if (tresult != ISC_R_SUCCESS)
+ if (result == ISC_R_SUCCESS && tresult != ISC_R_SUCCESS)
        result = tresult;
    }
return (result);
@@ -204,7 +210,8 @@ check_dual_stack(const cfg_obj_t *options, isc_log_t *logctx) {
    if (val > UINT16_MAX) {
        cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
            "port '%u' out of range", val);
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
    }
}
obj = cfg_tuple_get(alternates, "addresses");
@@ -224,7 +231,8 @@ check_dual_stack(const cfg_obj_t *options, isc_log_t *logctx) {

```

```

if (tresult != ISC_R_SUCCESS) {
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "bad name '%s'", str);
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = tresult;
}
obj = cfg_tuple_get(value, "port");
if (cfg_obj_isuint32(obj))
{
@@ -232,7 +240,8 @@ check_dual_stack(const cfg_obj_t *options, isc_log_t *logctx) {
    if (val > UINT16_MAX) {
        cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
            "port '%u' out of range", val);
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
    }
}
}
@@ -1271,7 +1280,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "auto-dnssec may only be activated at the "
        "zone level");
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
}
}

@@ -1291,7 +1301,7 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
{
    obj = cfg_listelt_value(element);
    tresult = mustbesecure(obj, symtab, logctx, mctx);
- if (tresult != ISC_R_SUCCESS)
+ if (result == ISC_R_SUCCESS && tresult != ISC_R_SUCCESS)
    result = tresult;
}
if (symtab != NULL)
@@ -1310,7 +1320,8 @@ check_options(const
cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "%s: invalid name '%s'",
        server_contact[i], str);
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
}

```

```

}
}
@@ -1330,7 +1341,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "disable-empty-zone: invalid name '%s'",
        str);
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
}
}

@@ -1344,11 +1356,12 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    strlen(cfg_obj_asstring(obj)) > 1024U) {
    cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
        "'server-id' too big (>1024 bytes)");
- result = ISC_R_FAILURE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_FAILURE;
}

tresult = check_dscp(options, logctx);
- if (tresult != ISC_R_SUCCESS)
+ if
(result == ISC_R_SUCCESS && tresult != ISC_R_SUCCESS)
    result = tresult;

obj = NULL;
@@ -1358,11 +1371,13 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    if (lifetime > 604800) { /* 7 days */
        cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
            "'nta-lifetime' cannot exceed one week");
- result = ISC_R_RANGE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
    } else if (lifetime == 0) {
        cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
            "'nta-lifetime' may not be zero");
- result = ISC_R_RANGE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
    }
}

@@ -1373,7 +1388,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    if (recheck > 604800) { /* 7 days */
        cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
            "'nta-recheck' cannot exceed one week");

```

```

- result = ISC_R_RANGE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
}

if (recheck > lifetime)
@@ -1391,7
+1407,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
if (strcasecmp(ccalg, "aes") == 0) {
cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
"cookie-algorithm: '%s' not supported", ccalg);
- result = ISC_R_NOTIMPLEMENTED;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_NOTIMPLEMENTED;
}
#endif

@@ -1480,7 +1497,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
"%s out of range (%u < %u)",
fstrm[i].name, value, fstrm[i].min);
- result = ISC_R_RANGE;
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
}

if (strcmp(fstrm[i].name, "fstrm-set-input-queue-size") == 0) {
@@ -1494,7 +1512,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
"%s '%u' not a power-of-2",
fstrm[i].name,
cfg_obj_asuint32(obj));
- result = ISC_R_RANGE;
+ if (result == ISC_R_SUCCESS)
+ result
= ISC_R_RANGE;
}
}
}

@@ -1512,7 +1531,8 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
%" PRIu64 "" "
"is too small",
mapsize);
- return (ISC_R_RANGE);
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
} else if (mapsize > (1ULL << 40)) { /* 1 terabyte */
cfg_obj_log(obj, logctx,
ISC_LOG_ERROR,

```

```

@@ -1520,10 +1540,20 @@ check_options(const cfg_obj_t *options, isc_log_t *logctx, isc_mem_t *mctx,
    "%" PRIu64 " " "
    "is too large",
    mapsize);
- return (ISC_R_RANGE);
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
}
}

+ obj = NULL;
+ (void)cfg_map_get(options, "resolver-nonbackoff-tries", &obj);
+ if (obj != NULL && cfg_obj_asuint32(obj) == 0U) {
+ cfg_obj_log(obj, logctx, ISC_LOG_ERROR,
+ "resolver-nonbackoff-tries' must be >= 1");
+ if (result == ISC_R_SUCCESS)
+ result = ISC_R_RANGE;
+ }
+
return (result);
}

```

diff --git a/lib/dns/cache.c

b/lib/dns/cache.c

index 2965a4f..617737a 100644

--- a/lib/dns/cache.c

+++ b/lib/dns/cache.c

```
@@ -138,6 +138,7 @@ struct dns_cache {
```

```
int db_argc;
```

```
char **db_argv;
```

```
size_t size;
```

```
+ dns_ttl_t serve_stale_ttl;
```

```
isc_stats_t *stats;
```

```
/* Locked by 'filelock'. */
```

```
@@ -167,9 +168,13 @@ overmem_cleaning_action(isc_task_t *task, isc_event_t *event);
```

```
static inline isc_result_t
```

```
cache_create_db(dns_cache_t *cache, dns_db_t **db) {
```

```
- return (dns_db_create(cache->mctx, cache->db_type, dns_rootname,
```

```
- dns_dbtype_cache, cache->rdclass,
```

```
- cache->db_argc, cache->db_argv, db));
```

```
+ isc_result_t result;
```

```
+ result = dns_db_create(cache->mctx, cache->db_type, dns_rootname,
```

```
+ dns_dbtype_cache, cache->rdclass,
```

```
+ cache->db_argc, cache->db_argv, db);
```

```
+ if (result == ISC_R_SUCCESS)
```

```
+ dns_db_setservestalettl(*db, cache->serve_stale_ttl);
```

```

+ return (result);
}

isc_result_t
@@ -238,6 +243,7 @@ dns_cache_create3(isc_mem_t *cmctx, isc_mem_t *hmctx, isc_taskmgr_t
*taskmgr,
cache->references = 1;
cache->live_tasks = 0;
cache->rdclass = rdclass;
+ cache->serve_stale_ttl = 0;

cache->stats = NULL;
result = isc_stats_create(cmctx, &cache->stats,
@@ -1092,6 +1098,32 @@ dns_cache_getcachesize(dns_cache_t *cache) {
return (size);
}

+void
+dns_cache_setservstalettl(dns_cache_t *cache, dns_ttl_t ttl) {
+ REQUIRE(VALID_CACHE(cache));
+
+ LOCK(&cache->lock);
+ cache->serve_stale_ttl = ttl;
+ UNLOCK(&cache->lock);
+
+ (void)dns_db_setservstalettl(cache->db, ttl);
+}
+
+dns_ttl_t
+dns_cache_getservstalettl(dns_cache_t *cache) {
+ dns_ttl_t ttl;
+ isc_result_t result;
+
+ REQUIRE(VALID_CACHE(cache));
+
+ /*
+ * Could get it straight from the dns_cache_t, but use db
+ * to confirm the value that the db is really using.
+ */
+ result = dns_db_getservstalettl(cache->db, &ttl);
+ return result == ISC_R_SUCCESS ? ttl : 0;
+}
+
+/*
+ * The cleaner task is shutting down; do the necessary cleanup.
+ */
diff --git a/lib/dns/db.c b/lib/dns/db.c
index

```

```

a28a566..c581646 100644
--- a/lib/dns/db.c
+++ b/lib/dns/db.c
@@ -1130,3 +1130,25 @@ dns_db_nodefullname(dns_db_t *db, dns_dbnode_t *node, dns_name_t *name) {
    return (ISC_R_NOTIMPLEMENTED);
    return ((db->methods->nodefullname)(db, node, name));
}
+
+isc_result_t
+dns_db_setservestalettl(dns_db_t *db, dns_ttl_t ttl)
+{
+ REQUIRE(DNS_DB_VALID(db));
+ REQUIRE((db->attributes & DNS_DBATTR_CACHE) != 0);
+
+ if (db->methods->setservestalettl != NULL)
+ return ((db->methods->setservestalettl)(db, ttl));
+ return (ISC_R_NOTIMPLEMENTED);
+}
+
+isc_result_t
+dns_db_getservestalettl(dns_db_t *db, dns_ttl_t *ttl)
+{
+ REQUIRE(DNS_DB_VALID(db));
+ REQUIRE((db->attributes & DNS_DBATTR_CACHE) != 0);
+
+ if (db->methods->getservestalettl != NULL)
+ return ((db->methods->getservestalettl)(db, ttl));
+ return (ISC_R_NOTIMPLEMENTED);
+}
diff --git a/lib/dns/ecdb.c b/lib/dns/ecdb.c
index fc94ccf..76d0417 100644
--- a/lib/dns/ecdb.c
+++ b/lib/dns/ecdb.c
@@ -588,7 +588,9 @@ static dns_dbmethods_t
ecdb_methods = {
    NULL, /* setcachestats */
    NULL, /* hashsize */
    NULL, /* nodefullname */
- NULL /* getsize */
+ NULL, /* getsize */
+ NULL, /* setservestalettl */
+ NULL /* getservestalettl */
};

static isc_result_t
diff --git a/lib/dns/include/dns/cache.h b/lib/dns/include/dns/cache.h
index ab4b0b5..e158014 100644
--- a/lib/dns/include/dns/cache.h

```

```

+++ b/lib/dns/include/dns/cache.h
@@ -260,6 +260,27 @@ dns_cache_getcachesize(dns_cache_t *cache);
 * Get the maximum cache size.
 */

+void
+dns_cache_setservestalettl(dns_cache_t *cache, dns_ttl_t ttl);
+/*%<
+ * Sets the maximum length of time that cached answers may be retained
+ * past their normal TTL. Default value for the library is 0, disabling
+ * the use of stale data.
+ *
+ * Requires:
+ * \li 'cache' to be valid.
+ */
+
+dns_ttl_t
+dns_cache_getservestalettl(dns_cache_t *cache);
+/*%<
+ * Gets the maximum length of time that cached answers may be kept past
+ * normal expiry.
+ *
+ * Requires:
+ * \li 'cache'
+ * to be valid.
+ */
+
isc_result_t
dns_cache_flush(dns_cache_t *cache);
/*%<
diff --git a/lib/dns/include/dns/db.h b/lib/dns/include/dns/db.h
index 96f3a8f..452770f 100644
--- a/lib/dns/include/dns/db.h
+++ b/lib/dns/include/dns/db.h
@@ -195,6 +195,8 @@ typedef struct dns_dbmethods {
     dns_name_t *name);
isc_result_t (*getsize)(dns_db_t *db, dns_dbversion_t *version,
    uint64_t *records, uint64_t *bytes);
+ isc_result_t (*setservestalettl)(dns_db_t *db, dns_ttl_t ttl);
+ isc_result_t (*getservestalettl)(dns_db_t *db, dns_ttl_t *ttl);
} dns_dbmethods_t;

typedef isc_result_t
@@ -253,6 +255,7 @@ struct dns_dbonupdatelistener {
#define DNS_DBFIND_FORCENSEC3 0x0080
#define DNS_DBFIND_ADDITIONALOK 0x0100
#define DNS_DBFIND_NOZONECUT 0x0200
+#define DNS_DBFIND_STALEOK 0x0400

```



```

/*@ */

/*@ {*/
@@ -1683,6 +1686,38 @@ dns_db_nodedefullname(dns_db_t *db, dns_dbnode_t *node, dns_name_t *name);
 * \li 'db' is a valid database
 * \li 'node' and 'name' are not NULL
 */
+
+isc_result_t
+dns_db_setservestalettl(dns_db_t *db, dns_ttl_t ttl);
+/*%<
+ * Sets the maximum length of time that cached answers may be retained
+ * past their normal TTL. Default value for the library is 0, disabling
+ * the use of stale data.
+ *
+ * Requires:
+ * \li 'db' is a valid cache database.
+ * \li 'ttl' is the number of seconds to retain data past its normal expiry.
+ *
+ * Returns:
+ * \li #ISC_R_SUCCESS
+ * \li #ISC_R_NOTIMPLEMENTED - Not supported by this DB implementation.
+ */
+
+isc_result_t
+dns_db_getservestalettl(dns_db_t *db, dns_ttl_t *ttl);
+/*%<
+ * Gets maximum length of time that cached answers may be kept past
+ * normal TTL expiration.
+ *
+ * Requires:
+ * \li 'db' is a valid cache database.
+ * \li 'ttl' is the number of seconds to retain data past its normal expiry.
+ *
+ * Returns:
+ * \li #ISC_R_SUCCESS
+ * \li #ISC_R_NOTIMPLEMENTED - Not supported by this DB implementation.
+ */
+
ISC_LANG_ENDDECLS

#endif /* DNS_DB_H */
diff --git a/lib/dns/include/dns/rdataset.h
b/lib/dns/include/dns/rdataset.h
index ed9119a..710e97c 100644
--- a/lib/dns/include/dns/rdataset.h
+++ b/lib/dns/include/dns/rdataset.h
@@ -128,6 +128,7 @@ struct dns_rdataset {

```

```

unsigned int  magic; /* XXX ? */
dns_rdatasetmethods_t * methods;
ISC_LINK(dns_rdataset_t) link;
+
/*
 * XXX do we need these, or should they be retrieved by methods?
 * Leaning towards the latter, since they are not frequently required
@@ -136,12 +137,19 @@ struct dns_rdataset {
dns_rdataclass_t rdclass;
dns_rdatatype_t type;
dns_ttl_t ttl;
+ /*
+ * Stale ttl is used to see how long this RRset can still be used
+ * to serve to clients, after the TTL has expired.
+ */
+ dns_ttl_t stale_ttl;
dns_trust_t trust;
dns_rdatatype_t covers;
+
/*
 * attributes
 */
unsigned int  attributes;
+
/*%
 * the counter provides the starting point in the "cyclic" order.
 * The value UINT32_MAX has a special meaning of "picking up a
@@ -149,11 +157,13
@@ struct dns_rdataset {
 * increment the counter.
 */
uint32_t count;
+
/*
 * This RRSIG RRset should be re-generated around this time.
 * Only valid if DNS_RDATASETATTR_RESIGN is set in attributes.
 */
isc_stdtime_t resign;
+
/*@ { */
/*%
 * These are for use by the rdataset implementation, and MUST NOT
@@ -206,6 +216,7 @@ struct dns_rdataset {
#define DNS_RDATASETATTR_OPTOUT 0x00100000 /*%< OPTOUT proof */
#define DNS_RDATASETATTR_NEGATIVE 0x00200000
#define DNS_RDATASETATTR_PREFETCH 0x00400000
+#define DNS_RDATASETATTR_STALE 0x01000000

```

```

/*%
 * _OMITDNSSEC:
diff --git a/lib/dns/include/dns/resolver.h b/lib/dns/include/dns/resolver.h
index 7b3c047..bd7d225 100644
--- a/lib/dns/include/dns/resolver.h
+++ b/lib/dns/include/dns/resolver.h
@@ -547,9 +547,12 @@ dns_resolver_getmustbesecure(dns_resolver_t *resolver, dns_name_t *name);

void
-dns_resolver_settimeout(dns_resolver_t *resolver, unsigned int seconds);
+dns_resolver_settimeout(dns_resolver_t *resolver,
  unsigned int timeout);
/*%<
- * Set the length of time the resolver will work on a query, in seconds.
+ * Set the length of time the resolver will work on a query, in milliseconds.
+ *
+ * 'timeout' was originally defined in seconds, and later redefined to be in
+ * milliseconds. Values less than or equal to 300 are treated as seconds.
+ *
+ * If timeout is 0, the default timeout will be applied.
+ *
@@ -560,7 +563,8 @@ dns_resolver_settimeout(dns_resolver_t *resolver, unsigned int seconds);
unsigned int
dns_resolver_gettimeout(dns_resolver_t *resolver);
/*%<
- * Get the current length of time the resolver will work on a query, in seconds.
+ * Get the current length of time the resolver will work on a query,
+ * in milliseconds.
+ *
+ * Requires:
+ * \li resolver to be valid.
@@ -582,6 +586,39 @@ dns_resolver_getzeronosoattl(dns_resolver_t *resolver);
void
dns_resolver_setzeronosoattl(dns_resolver_t *resolver, bool state);

+unsigned int
+dns_resolver_getretryinterval(dns_resolver_t
+ *resolver);
+
+void
+dns_resolver_setretryinterval(dns_resolver_t *resolver, unsigned int interval);
+/*%<
+ * Sets the amount of time, in milliseconds, that is waited for a reply
+ * to a server before another server is tried. Interacts with the
+ * value of dns_resolver_getnonbackofftries() by trying that number of times
+ * at this interval, before doing exponential backoff and doubling the interval
+ * on each subsequent try, to a maximum of 10 seconds. Defaults to 800 ms;

```

```

+ * silently capped at 2000 ms.
+ *
+ * Requires:
+ * \li resolver to be valid.
+ * \li interval > 0.
+ */
+
+unsigned int
+dns_resolver_getnonbackofftries(dns_resolver_t *resolver);
+
+void
+dns_resolver_setnonbackofftries(dns_resolver_t *resolver, unsigned int tries);
+/*%<
+ * Sets the number of failures of getting a reply from remote servers for
+ * a query before backing off by doubling the retry interval for each
+ * subsequent request sent. Defaults to 3.
+ *
+ * Requires:
+ * \li resolver
+ * to be valid.
+ * \li tries > 0.
+ */
+
+unsigned int
+dns_resolver_getoptions(dns_resolver_t *resolver);

```

```

diff --git a/lib/dns/include/dns/types.h b/lib/dns/include/dns/types.h
index 2468e3c..934a641 100644

```

```

--- a/lib/dns/include/dns/types.h
+++ b/lib/dns/include/dns/types.h
@@ -390,6 +390,12 @@ typedef struct {
    size_t    count;
} dns_indent_t;

```

```

+typedef enum {
+ dns_stale_answer_no,
+ dns_stale_answer_yes,
+ dns_stale_answer_conf
+} dns_stale_answer_t;

```

```

+
+/*
+ * Functions.
+ */

```

```

diff --git a/lib/dns/include/dns/view.h b/lib/dns/include/dns/view.h
index 53f1db1..96148c7 100644

```

```

--- a/lib/dns/include/dns/view.h
+++ b/lib/dns/include/dns/view.h
@@ -229,6 +229,9 @@ struct dns_view {

```

```

dns_dtenv_t *dtenv; /* Dnstap environment */
dns_dtmsgtype_t dttypes; /* Dnstap message types
    to log */
+ dns_ttl_t staleanswerttl;
+ dns_stale_answer_t staleanswersok; /* rndc setting */
+ bool staleanswersenable; /* named.conf setting */
};

#define DNS_VIEW_MAGIC ISC_MAGIC('V','I','E','W')
diff
--git a/lib/dns/master.c b/lib/dns/master.c
index 7d26b81..36999b5 100644
--- a/lib/dns/master.c
+++ b/lib/dns/master.c
@@ -1948,12 +1948,18 @@ load_text(dns_loadctx_t *lctx) {

    if ((lctx->options & DNS_MASTER_AGETTTL) != 0) {
        /*
        - * Adjust the TTL for $DATE. If the RR has already
        - * expired, ignore it.
        + * Adjust the TTL for $DATE. If the RR has
        + * already expired, set its TTL to 0. This
        + * should be okay even if the TTL stretching
        + * feature is not in effect, because it will
        + * just be quickly expired by the cache, and the
        + * way this was written before the patch it
        + * could potentially add 0 TTLs anyway.
        */
        if (lctx->ttd < ttl_offset)
            continue;
        lctx->ttd -= ttl_offset;
        lctx->ttd = 0;
        else
            lctx->ttd -= ttl_offset;
        }

        /*
diff --git a/lib/dns/masterdump.c b/lib/dns/masterdump.c
index fa839a0..91b3cab 100644
--- a/lib/dns/masterdump.c
+++ b/lib/dns/masterdump.c
@@ -81,6 +81,9 @@
struct dns_master_style {
    /*
#define DNS_TOTEXT_LINEBREAK_MAXLEN 100

+/*% Does the rdataset 'r' contain a stale answer? */
+#define STALE(r) (((r)->attributes & DNS_RDATASETATTR_STALE) != 0)

```

```

+
/*%
* Context structure for a masterfile dump in progress.
*/
@@ -94,6 +97,7 @@ typedef struct dns_totext_ctx {
    dns_fixedname_t  origin_fixname;
    uint32_t  current_ttl;
    bool  current_ttl_valid;
+ dns_ttl_t  serve_stale_ttl;
} dns_totext_ctx_t;

LIBDNS_EXTERNAL_DATA const dns_master_style_t
@@ -382,6 +386,7 @@ totext_ctx_init(const dns_master_style_t *style, dns_totext_ctx_t *ctx) {
    ctx->neworigin = NULL;
    ctx->current_ttl = 0;
    ctx->current_ttl_valid = false;
+ ctx->serve_stale_ttl = 0;

    return (ISC_R_SUCCESS);
}
@@ -1028,6 +1033,11 @@ dump_rdatasets_text(isc_mem_t *mctx, dns_name_t *name,
    (ctx->style.flags & DNS_STYLEFLAG_NCACHE) == 0) {
    /* Omit negative cache entries */
    } else {
+ if (STALE(rds)) {
+ fprintf(f, "; stale (for %u more seconds)\n",
+ (rds->stale_ttl
-
+ ctx->serve_stale_ttl));
+ }
    isc_result_t result =
        dump_rdataset(mctx, name, rds, ctx,
            buffer, f);
@@ -1496,6 +1506,16 @@ dumpctx_create(isc_mem_t *mctx, dns_db_t *db, dns_dbversion_t *version,
    dns_db_attach(db, &dctx->db);

    dctx->do_date = dns_db_iscache(dctx->db);
+ if (dctx->do_date) {
+ /*
+ * Adjust the date backwards by the serve-stale TTL, if any.
+ * This is so the TTL will be loaded correctly when next
+ * started.
+ */
+ (void)dns_db_getservestalettl(dctx->db,
+     &dctx->tctx.serve_stale_ttl);
+ dctx->now -= dctx->tctx.serve_stale_ttl;
+ }

```

```

if (dctx->format == dns_masterformat_text &&
    (dctx->tctx.style.flags & DNS_STYLEFLAG_REL_OWNER) != 0) {
@@ -1555,6 +1575,9 @@ writeheader(dns_dumpctx_t *dctx) {
    * it in the zone case.
    */
    if (dctx->do_date) {
+   fprintf(dctx->f,
+   "; using a %d second stale ttl\n",
+   dctx->tctx.serve_stale_ttl);
        result = dns_time32_totext(dctx->now,
&buffer);
        RUNTIME_CHECK(result == ISC_R_SUCCESS);
        isc_buffer_usedregion(&buffer, &r);
diff --git a/lib/dns/rbtdb.c b/lib/dns/rbtdb.c
index 3a60bcf..8ea4d47 100644
--- a/lib/dns/rbtdb.c
+++ b/lib/dns/rbtdb.c
@@ -511,6 +511,7 @@ typedef ISC_LIST(rdatasetheader_t)  rdatasetheaderlist_t;
typedef ISC_LIST(dns_rbtdnode_t)   rbtdnodelist_t;

#define RDATASET_ATTR_NONEXISTENT  0x0001
+/*%< May be potentially served as stale data. */
#define RDATASET_ATTR_STALE        0x0002
#define RDATASET_ATTR_IGNORE      0x0004
#define RDATASET_ATTR_RETAIN      0x0008
@@ -523,6 +524,8 @@ typedef ISC_LIST(dns_rbtdnode_t)  rbtdnodelist_t;
#define RDATASET_ATTR_CASESET     0x0400
#define RDATASET_ATTR_ZEROTTL    0x0800
#define RDATASET_ATTR_CASEFULLYLOWER 0x1000
+/*%< Ancient - awaiting cleanup. */
+#define RDATASET_ATTR_ANCIENT     0x2000

typedef struct aCACHE_cBarg {
    dns_rdatasetadditional_t  type;
@@ -573,6 +576,8 @@ struct
    aCACHE_t {
        (((header)->attributes & RDATASET_ATTR_ZEROTTL) != 0)
#define CASEFULLYLOWER(header) \
        (((header)->attributes & RDATASET_ATTR_CASEFULLYLOWER) != 0)
+#define ANCIENT(header) \
+ (((header)->attributes & RDATASET_ATTR_ANCIENT) != 0)

#define ACTIVE(header, now) \
@@ -632,6 +637,12 @@ typedef enum {
    expire_flush
} expire_t;

```

```

+typedef enum {
+ rdataset_ttl_fresh,
+ rdataset_ttl_stale,
+ rdataset_ttl_ancient
+} rdataset_ttl_t;
+
typedef struct rbtdb_version {
/* Not locked */
rbtdb_serial_t      serial;
@@ -699,6 +710,12 @@ struct dns_rbtdb {
dns_dbnode_t       *soanode;
dns_dbnode_t       *nsnode;

+ /*
+ * Maximum length of time to keep using a stale answer past its
+ * normal TTL expiry.
+ */
+ dns_ttl_t  serve_stale_ttl;
+
/*
* This is a linked list used to implement the LRU cache. There will
* be node_lock_count linked lists here. Nodes in bucket 1 will be
@@ -742,6 +759,8 @@ struct dns_rbtdb {
#define
RBTDB_ATTR_LOADED      0x01
#define RBTDB_ATTR_LOADING      0x02

+#define KEEPSTALE(rbtdb) ((rbtdb->serve_stale_ttl > 0)
+
+/*%
+ * Search Context
+ */
@@ -1816,15 +1835,15 @@ rollback_node(dns_rbtdb_t *node, rbtdb_serial_t serial) {
}

static inline void
-mark_stale_header(dns_rbtdb_t *rbtdb, rdatasetheader_t *header) {
+mark_header_ancient(dns_rbtdb_t *rbtdb, rdatasetheader_t *header) {

/*
- * If we are already stale there is nothing to do.
+ * If we are already ancient there is nothing to do.
*/
- if ((header->attributes & RDATASET_ATTR_STALE) != 0)
+ if (ANCIENT(header))
return;

- header->attributes |= RDATASET_ATTR_STALE;

```



```

+ header->attributes |= RDATASET_ATTR_ANTIEN;
header->node->dirty = 1;

/*
@@ -1865,8 +1884,8 @@ clean_cache_node(dns_rbtdb_t *rbtdb, dns_rbtnode_t *node) {
/*
* If current is nonexistent or stale, we can clean it up.
*/
- if ((current->attributes &
-   (RDATASET_ATTR_NONEXISTENT|RDATASET_ATTR_STALE))
!= 0) {
+ if (NONEXISTENT(current) || ANCIEN(current) ||
+   (STALE(current) && !KEEPSTALE(rbtdb))) {
  if (top_prev != NULL)
    top_prev->next = current->next;
  else
@@ -2111,6 +2130,80 @@ delete_node(dns_rbtdb_t *rbtdb, dns_rbtnode_t *node) {
}
}

+#if 0
+static void
+clean_now_or_later(dns_rbtnode_t *node, dns_rbtdb_t *rbtdb,
+  rdatasetheader_t *header, rdatasetheader_t **header_prevp)
+{
+ if (dns_rbtnode_refcurrent(node) == 0) {
+  isc_mem_t *mctx;
+
+  /*
+   * header->down can be non-NULL if the refcount has just
+   * decremented to 0 but decrement_reference() has not performed
+   * clean_cache_node(), in which case we need to purge the stale
+   * headers first.
+   */
+  mctx = rbtdb->common.mctx;
+  clean_stale_headers(rbtdb, mctx, header);
+  if (*header_prevp != NULL)
+    (*header_prevp)->next = header->next;
+  else
+    node->data = header->next;
+  free_rdataset(rbtdb, mctx, header);
+ } else {
+  header->attributes |= RDATASET_ATTR_STALE |
+
+    RDATASET_ATTR_ANTIEN;
+  node->dirty = 1;
+  *header_prevp = header;
+ }

```

```

+}
+
+static rdataset_ttl_t
+check_ttl(dns_rbtdb_t *node, rbtdb_search_t *search,
+ rdatasetheader_t *header, rdatasetheader_t **header_prevp,
+ nodelock_t *lock, isc_rwlocktype_t *locktype)
+{
+ dns_rbtdb_t *rbtdb = search->rbtdb;
+
+ if (header->rdh_ttl > search->now)
+ return rdataset_ttl_fresh;
+
+ /*
+ * This rdataset is stale, but perhaps still usable.
+ */
+ if (KEEPSTALE(rbtdb) &&
+ header->rdh_ttl + rbtdb->serve_stale_ttl > search->now) {
+ header->attributes |= RDATASET_ATTR_STALE;
+ /* Doesn't set dirty because it doesn't need removal. */
+ return rdataset_ttl_stale;
+ }
+
+ /*
+ * This rdataset is so stale it is no longer usable, even with
+ * KEEPSTALE. If no one else is using the node, we can clean it up
+ * right now, otherwise we mark it as ancient, and the node as dirty,
+ * so it will get cleaned up later.
+ */
+ if ((header->rdh_ttl <= search->now - RBTDB_VIRTUAL)
+ &&
+ (*locktype == isc_rwlocktype_write ||
+ NODE_TRYUPGRADE(lock) == ISC_R_SUCCESS)) {
+ /*
+ * We update the node's status only when we can get write
+ * access; otherwise, we leave others to this work. Periodical
+ * cleaning will eventually take the job as the last resort.
+ * We won't downgrade the lock, since other rdatasets are
+ * probably stale, too.
+ */
+ *locktype = isc_rwlocktype_write;
+ clean_now_or_later(node, rbtdb, header, header_prevp);
+ } else
+ *header_prevp = header;
+
+ return rdataset_ttl_ancient;
+}
+
+endif
+

```

```

/*
 * Caller must be holding the node lock.
 */
@@ -3343,6 +3436,12 @@ bind_rdataset(dns_rbtdb_t *rbtdb, dns_rbtdb_t *node, rdatasetheader_t *header,
    rdataset->attributes |= DNS_RDATASETATTR_OPTOUT;
    if (PREFETCH(header))
        rdataset->attributes |= DNS_RDATASETATTR_PREFETCH;
+   if (STALE(header)) {
+   rdataset->attributes |= DNS_RDATASETATTR_STALE;
+   rdataset->stale_ttl =
+   (rbtdb->serve_stale_ttl + header->rdh_ttl)
-   now;
+   rdataset->ttl = 0;
+   }
    rdataset->private1 = rbtdb;
    rdataset->private2 = node;
    raw = (unsigned char *)header + sizeof(*header);
@@ -4698,6 +4797,19 @@ check_stale_header(dns_rbtdb_t *node, rdatasetheader_t *header,
#endif

    if (!ACTIVE(header, search->now)) {
+   dns_ttl_t stale = header->rdh_ttl +
+   search->rbtdb->serve_stale_ttl;
+   /*
+   * If this data is in the stale window keep it and if
+   * DNS_DBFIND_STALEOK is not set we tell the caller to
+   * skip this record.
+   */
+   if (KEEPSTALE(search->rbtdb) && stale > search->now) {
+   header->attributes |= RDATASET_ATTR_STALE;
+   *header_prev = header;
+   return ((search->options & DNS_DBFIND_STALEOK) == 0);
+   }
+
+   /*
+   * This rdataset is stale. If no one else is using the
+   * node, we can clean it up right now, otherwise we mark
@@ -4737,7 +4849,7 @@ check_stale_header(dns_rbtdb_t *node, rdatasetheader_t *header,
        node->data = header->next;
        free_rdataset(search->rbtdb, mctx,
header);
    } else {
-   mark_stale_header(search->rbtdb, header);
+   mark_header_ancient(search->rbtdb, header);
        *header_prev = header;
    }
} else
@@ -5178,7 +5290,7 @@ cache_find(dns_db_t *db, dns_name_t *name, dns_dbversion_t *version,

```

```

        &locktype, lock, &search,
        &header_prev)) {
/* Do nothing. */
- } else if (EXISTS(header) && (!STALE(header))) {
+ } else if (EXISTS(header) && !ANCIENT(header)) {
/*
* We now know that there is at least one active
* non-stale rdataset at this node.
@@ -5661,7 +5773,7 @@ expirenode(dns_db_t *db, dns_dbnode_t *node, isc_stdtime_t now) {
* reffcurrent(rbtdb) must be non-zero. This is so
* because 'node' is an argument to the function.
*/
- mark_stale_header(rbtdb, header);
+ mark_header_ancient(rbtdb, header);
if (log)
isc_log_write(dns_lctx, category, module,
              level, "overmem cache: stale %s",
@@ -5669,7 +5781,7 @@ expirenode(dns_db_t *db, dns_dbnode_t
*node, isc_stdtime_t now) {
} else if (force_expire) {
if (!RETAIN(header)) {
set_ttl(rbtdb, header, 0);
- mark_stale_header(rbtdb, header);
+ mark_header_ancient(rbtdb, header);
} else if (log) {
isc_log_write(dns_lctx, category, module,
              level, "overmem cache: "
@@ -5928,9 +6040,9 @@ cache_findrdataset(dns_db_t *db, dns_dbnode_t *node, dns_dbversion_t *version,
* non-zero. This is so because 'node' is an
* argument to the function.
*/
- mark_stale_header(rbtdb, header);
+ mark_header_ancient(rbtdb, header);
}
- } else if (EXISTS(header) && (!STALE(header))) {
+ } else if (EXISTS(header) && !ANCIENT(header)) {
if (header->type == matchtype)
found = header;
else if (header->type == RBTDB_RDATATYPE_NCACHEANY ||
@@ -6232,7 +6344,7 @@ add32(dns_rbtdb_t *rbtdb, dns_rbtdbnode_t *rbtdbnode, rbtdb_version_t *rbtdbversion,
topheader = topheader->next)
{
set_ttl(rbtdb, topheader, 0);
- mark_stale_header(rbtdb,
topheader);
+ mark_header_ancient(rbtdb, topheader);
}
goto find_header;

```

```

    }
@@ -6293,7 +6405,7 @@ add32(dns_rbtodb_t *rbtodb, dns_rbtnode_t *rbtnode, rbtodb_version_t *rbtversion,
    * ncache entry.
    */
    set_ttl(rbtodb, topheader, 0);
-   mark_stale_header(rbtodb, topheader);
+   mark_header_ancient(rbtodb, topheader);
    topheader = NULL;
    goto find_header;
}
@@ -6331,8 +6443,11 @@ add32(dns_rbtodb_t *rbtodb, dns_rbtnode_t *rbtnode, rbtodb_version_t *rbtversion,
}

/*
- * Trying to add an rdataset with lower trust to a cache DB
- * has no effect, provided that the cache data isn't stale.
+ * Trying to add an rdataset with lower trust to a cache
+ * DB has no effect, provided that the cache data isn't
+ * stale. If the cache data is stale, new lower trust
+ * data will supersede it below. Unclear what the best
+ * policy is here.
*/
if (rbtversion == NULL && trust < header->trust &&
    (ACTIVE(header, now)
 || header_nx)) {
@@ -6362,6 +6477,10 @@ add32(dns_rbtodb_t *rbtodb, dns_rbtnode_t *rbtnode, rbtodb_version_t *rbtversion,

    if ((options & DNS_DBADD_EXACT) != 0)
        flags |= DNS_RDATASLAB_EXACT;
+   /*
+   * TTL use here is irrelevant to the cache;
+   * merge is only done with zonedbs.
+   */
    if ((options & DNS_DBADD_EXACTTTL) != 0 &&
        newheader->rdh_ttl != header->rdh_ttl)
        result = DNS_R_NOTEXACT;
@@ -6405,11 +6524,12 @@ add32(dns_rbtodb_t *rbtodb, dns_rbtnode_t *rbtnode, rbtodb_version_t *rbtversion,
}
}
/*
- * Don't replace existing NS, A and AAAA RRsets
- * in the cache if they are already exist. This
- * prevents named being locked to old servers.
- * Don't lower trust of existing record if the
- * update is forced.
+ * Don't replace existing NS, A and AAAA RRsets in the
+ * cache if they are already exist. This prevents named
+ * being locked to old servers. Don't lower trust of

```

```

+ * existing record if the update is forced. Nothing
+
+ * special to be done w.r.t stale data; it gets replaced
+ * normally further down.
+ */
+ if (IS_CACHE(rbdb) && ACTIVE(header, now) &&
+     header->type == dns_rdatatype_ns &&
@@ -6582,10 +6702,10 @@ add32(dns_rbdb_t *rbdb, dns_rbtnode_t *rbtnode, rbddb_version_t *rbtversion,
+     changed->dirty = true;
+ if (rbtversion == NULL) {
+     set_ttl(rbdb, header, 0);
- mark_stale_header(rbdb, header);
+ mark_header_ancient(rbdb, header);
+ if (sigheader != NULL) {
+     set_ttl(rbdb, sigheader, 0);
- mark_stale_header(rbdb, sigheader);
+ mark_header_ancient(rbdb, sigheader);
+ }
+ }
+ if (rbtversion != NULL && !header_nx) {
@@ -8436,6 +8556,30 @@ nodefullname(dns_db_t *db, dns_dbnode_t *node, dns_name_t *name) {
+ return (result);
+ }

+static isc_result_t
+setservestalettl(dns_db_t *db, dns_ttl_t ttl) {
+ dns_rbdb_t *rbdb = (dns_rbdb_t *)db;
+
+
+ REQUIRE(VALID_RBTDB(rbdb));
+ REQUIRE(IS_CACHE(rbdb));
+
+ /* currently no bounds checking.
+ 0 means disable. */
+ rbdb->serve_stale_ttl = ttl;
+ return ISC_R_SUCCESS;
+ }
+
+static isc_result_t
+getservestalettl(dns_db_t *db, dns_ttl_t *ttl) {
+ dns_rbdb_t *rbdb = (dns_rbdb_t *)db;
+
+ REQUIRE(VALID_RBTDB(rbdb));
+ REQUIRE(IS_CACHE(rbdb));
+
+ *ttl = rbdb->serve_stale_ttl;
+ return ISC_R_SUCCESS;
+ }
+

```

```

+
static dns_dbmethods_t zone_methods = {
    attach,
    detach,
@@ -8481,7 +8625,9 @@ static dns_dbmethods_t zone_methods = {
    NULL,
    hashsize,
    nodefullname,
- getsize
+ getsize,
+ NULL,
+ NULL
};

static dns_dbmethods_t cache_methods = {
@@ -8529,7 +8675,9 @@ static dns_dbmethods_t cache_methods = {
    setcachestats,
    hashsize,
    nodefullname,
- NULL
+ NULL,
+ setservestalettl,
+ getservestalettl
};

isc_result_t
@@ -8800,7 +8948,7 @@ dns_rbtodb_create
rbtdb->rpzs = NULL;
rbtdb->load_rpzs = NULL;
rbtdb->rpz_num = DNS_RPZ_INVALID_NUM;
-
+ rbtdb->serve_stale_ttl = 0;
/*
 * Version Initialization.
 */
@@ -9218,7 +9366,8 @@ rdatasetiter_first(dns_rdatasetiter_t
*iterator) {
    * rdatasets to work.
    */
    if (NONEXISTENT(header) ||
-    (now != 0 && now > header->rdh_ttl)
+    (now != 0 && now > header->rdh_ttl
+    + rbtdb->serve_stale_ttl))
        header = NULL;
        break;
    } else
@@ -10427,7 +10576,7 @@ static inline bool
need_headerupdate(rdatasetheader_t *header, isc_stdtime_t now) {

```

```

if ((header->attributes &
    (RDATASET_ATTR_NONEXISTENT |
-   RDATASET_ATTR_STALE |
+   RDATASET_ATTR_ANCIENT |
    RDATASET_ATTR_ZEROTTL)) != 0)
    return (false);

@@ -10533,7 +10682,7 @@ expire_header(dns_rbtdb_t *rbtdb, rdatasetheader_t *header,
    bool tree_locked, expire_t reason)
{
    set_ttl(rbtdb, header, 0);
- mark_stale_header(rbtdb, header);
+ mark_header_ancient(rbtdb, header);

/*
 * Caller must hold the node (write) lock.
diff --git a/lib/dns/resolver.c b/lib/dns/resolver.c
index 49ec49c..2de70a6 100644
--- a/lib/dns/resolver.c
+++ b/lib/dns/resolver.c
@@ -141,16 +141,17 @@
#endif
/* WANT_QUERYTRACE */

#define US_PER_SEC 1000000U
+#define US_PER_MSEC 1000U
/*
 * The maximum time we will wait for a single query.
 */
-#define MAX_SINGLE_QUERY_TIMEOUT 9U
-#define MAX_SINGLE_QUERY_TIMEOUT_US (MAX_SINGLE_QUERY_TIMEOUT*US_PER_SEC)
+#define MAX_SINGLE_QUERY_TIMEOUT 9000U
+#define MAX_SINGLE_QUERY_TIMEOUT_US (MAX_SINGLE_QUERY_TIMEOUT*US_PER_MSEC)

/*
 * We need to allow a individual query time to complete / timeout.
 */
-#define MINIMUM_QUERY_TIMEOUT (MAX_SINGLE_QUERY_TIMEOUT + 1U)
+#define MINIMUM_QUERY_TIMEOUT (MAX_SINGLE_QUERY_TIMEOUT + 1000U)

/* The default time in seconds for the whole query to live. */
#ifndef DEFAULT_QUERY_TIMEOUT
@@ -159,7 +160,7 @@

/* The maximum time in seconds for the whole query to live. */
#ifndef MAXIMUM_QUERY_TIMEOUT
-#define MAXIMUM_QUERY_TIMEOUT 30
+#define MAXIMUM_QUERY_TIMEOUT 30000

```



```

#endif

/* The default maximum number of recursions to follow before giving up. */
@@ -529,6 +530,11 @@ struct dns_resolver {
    dns_fetch_t
    * primefetch;
    /* Locked by nlock. */
    unsigned int nfctx;
+
+ /* Unlocked. Additions for serve-stale feature. */
+ unsigned int retryinterval; /* in milliseconds */
+ unsigned int nonbackofftries;
+
};

#define RES_MAGIC ISC_MAGIC('R', 'e', 's', '!')
@@ -1650,14 +1656,12 @@ fctx_setretryinterval(fetchctx_t *fctx, unsigned int rtt) {
    unsigned int seconds;
    unsigned int us;

+ us = fctx->res->retryinterval * 1000;
    /*
- * We retry every .8 seconds the first two times through the address
- * list, and then we do exponential back-off.
+ * Exponential backoff after the first few tries.
    */
- if (fctx->restarts < 3)
- us = 800000;
- else
- us = (800000 << (fctx->restarts - 2));
+ if (fctx->restarts >= fctx->res->nonbackofftries)
+ us <<= (fctx->restarts - fctx->res->nonbackofftries - 1);

    /*
    * Add a fudge factor to the expected rtt based on the current
@@ -4542,7 +4546,8 @@ fctx_create(dns_resolver_t *res, dns_name_t *name, dns_rdatatype_t type,
    /*
    * Compute an expiration time for the entire fetch.
    */
- isc_interval_set(&interval, res->query_timeout, 0);
+ isc_interval_set(&interval, res->query_timeout / 1000,
+ res->query_timeout % 1000 * 1000000);
    irestult = isc_time_nowplusinterval(&fctx->expires, &interval);
    if (irestult != ISC_R_SUCCESS) {
        UNEXPECTED_ERROR(__FILE__, __LINE__,
@@ -9105,6 +9110,8 @@ dns_resolver_create(dns_view_t *view,
    res->spillattimer = NULL;
    res->zspill = 0;

```

```

res->zero_no_soa_ttl = false;
+ res->retryinterval = 30000;
+ res->nonbackofftries = 3;
res->query_timeout = DEFAULT_QUERY_TIMEOUT;
res->maxdepth = DEFAULT_RECURSION_DEPTH;
res->maxqueries = DEFAULT_MAX_QUERIES;
@@ -10439,17 +10446,20 @@ dns_resolver_gettimeout(dns_resolver_t *resolver) {
}

void
-dns_resolver_settimeout(dns_resolver_t *resolver, unsigned int seconds) {
+dns_resolver_settimeout(dns_resolver_t *resolver, unsigned int timeout) {
    REQUIRE(VALID_RESOLVER(resolver));

- if (seconds == 0)
- seconds = DEFAULT_QUERY_TIMEOUT;
- if
    (seconds > MAXIMUM_QUERY_TIMEOUT)
- seconds = MAXIMUM_QUERY_TIMEOUT;
- if (seconds < MINIMUM_QUERY_TIMEOUT)
- seconds = MINIMUM_QUERY_TIMEOUT;
+ if (timeout <= 300)
+ timeout *= 1000;
+
+ if (timeout == 0)
+ timeout = DEFAULT_QUERY_TIMEOUT;
+ if (timeout > MAXIMUM_QUERY_TIMEOUT)
+ timeout = MAXIMUM_QUERY_TIMEOUT;
+ if (timeout < MINIMUM_QUERY_TIMEOUT)
+ timeout = MINIMUM_QUERY_TIMEOUT;

- resolver->query_timeout = seconds;
+ resolver->query_timeout = timeout;
}

void
@@ -10546,3 +10556,34 @@ dns_resolver_getquotaresponse(dns_resolver_t *resolver, dns_quotatype_t which)

return (resolver->quotaresp[which]);
}
+
+unsigned int
+dns_resolver_getretryinterval(dns_resolver_t *resolver) {
+ REQUIRE(VALID_RESOLVER(resolver));
+
+ return (resolver->retryinterval);
+}
+

```

```

+void
+dns_resolver_setretryinterval(dns_resolver_t *resolver, unsigned int interval)
+{
+ REQUIRE(VALID_RESOLVER(resolver));
+ REQUIRE(interval > 0);
+
+
+ resolver->retryinterval = ISC_MIN(interval,
+ 2000);
+}
+
+
+unsigned int
+dns_resolver_getnonbackofftries(dns_resolver_t *resolver) {
+ REQUIRE(VALID_RESOLVER(resolver));
+
+
+ return (resolver->nonbackofftries);
+}
+
+
+void
+dns_resolver_setnonbackofftries(dns_resolver_t *resolver, unsigned int tries) {
+ REQUIRE(VALID_RESOLVER(resolver));
+ REQUIRE(tries > 0);
+
+
+ resolver->nonbackofftries = tries;
+}
diff --git a/lib/dns/sdb.c b/lib/dns/sdb.c
index 477bb74..09cf932 100644
--- a/lib/dns/sdb.c
+++ b/lib/dns/sdb.c
@@ -1370,7 +1370,9 @@ static dns_dbmethods_t sdb_methods = {
  NULL, /* setcachestats */
  NULL, /* hashsize */
  NULL, /* nodefullname */
- NULL /* getsize */
+ NULL, /* getsize */
+ NULL, /* setservestalettl */
+ NULL /* getservestalettl */
};

```

```

static isc_result_t
diff --git a/lib/dns/sdlz.c b/lib/dns/sdlz.c
index 037d74a..9218fed 100644
--- a/lib/dns/sdlz.c
+++ b/lib/dns/sdlz.c
@@ -1336,7 +1336,9 @@ static dns_dbmethods_t sdlzdb_methods = {
  NULL, /* setcachestats */
  NULL, /* hashsize */
  NULL, /* nodefullname */
- NULL /* getsize */

```

```

+ NULL, /* getsize */
+ NULL, /* setservestalettl */
+ NULL /* getservestalettl */
};

/*
diff --git a/lib/dns/tests/db_test.c b/lib/dns/tests/db_test.c
index bc1cc3f..60fdb81 100644
--- a/lib/dns/tests/db_test.c
+++ b/lib/dns/tests/db_test.c
@@ -28,8 +28,9 @@

#include <dns/db.h>
#include <dns/dbiterator.h>
-#include <dns/name.h>
#include <dns/journal.h>
+#include <dns/name.h>
+#include <dns/rdatalist.h>

#include "dnstest.h"

@@ -76,7 +77,7 @@ getoriginnode_test(void **state) {
assert_int_equal(result, ISC_R_SUCCESS);

result = dns_db_create(mymctx, "rbt", dns_rootname, dns_dbtype_zone,
- dns_rdataclass_in, 0, NULL, &db);
+ dns_rdataclass_in, 0, NULL, &db);
assert_int_equal(result, ISC_R_SUCCESS);

result = dns_db_getoriginnode(db, &node);
@@ -91,6 +92,197 @@ getoriginnode_test(void **state) {
isc_mem_detach(&mymctx);
}

+/* test getservestalettl and setservestalettl */
+static void
+getsetservestalettl_test(void
+ **state) {
+ dns_db_t *db = NULL;
+ isc_mem_t *mymctx = NULL;
+ isc_result_t result;
+ dns_ttl_t ttl;
+
+ UNUSED(state);
+
+ result = isc_mem_create(0, 0, &mymctx);
+ assert_int_equal(result, ISC_R_SUCCESS);
+

```

```

+ result = dns_db_create(mymctx, "rbt", dns_rootname, dns_dbtype_cache,
+   dns_rdataclass_in, 0, NULL, &db);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ ttl = 5000;
+ result = dns_db_getservestalettl(db, &ttl);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ assert_int_equal(ttl, 0);
+
+ ttl = 6 * 3600;
+ result = dns_db_setservestalettl(db, ttl);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ ttl = 5000;
+ result = dns_db_getservestalettl(db, &ttl);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ assert_int_equal(ttl, 6 * 3600);
+
+ dns_db_detach(&db);
+ isc_mem_detach(&mymctx);
+}
+
+/* check DNS_DBFIND_STALEOK works */
+static void
+dns_dbfind_staleok_test(void **state) {
+ dns_db_t *db = NULL;
+ dns_dbnode_t *node = NULL;
+ dns_fixedname_t example_fixed;
+ dns_fixedname_t
+ found_fixed;
+ dns_name_t *example;
+ dns_name_t *found;
+ dns_rdatalist_t rdatalist;
+ dns_rdataset_t rdataset;
+ int count;
+ int pass;
+ isc_mem_t *mymctx = NULL;
+ isc_result_t result;
+ unsigned char data[] = { 0x0a, 0x00, 0x00, 0x01 };
+
+ UNUSED(state);
+
+ result = isc_mem_create(0, 0, &mymctx);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ result = dns_db_create(mymctx, "rbt", dns_rootname, dns_dbtype_cache,
+   dns_rdataclass_in, 0, NULL, &db);
+ assert_int_equal(result, ISC_R_SUCCESS);

```

```

+
+ example = dns_fixedname_initname(&example_fixed);
+ found = dns_fixedname_initname(&found_fixed);
+
+ result = dns_name_fromstring(example, "example", 0, NULL);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ /*
+ * Pass 0: default; no stale processing permitted.
+ * Pass 1: stale processing for 1 second.
+ * Pass 2: stale turned off after being on.
+ */
+ for (pass = 0; pass < 3; pass++) {
+ dns_rdata_t rdata = DNS_RDATA_INIT;
+
+ /* 10.0.0.1 */
+ rdata.data
+ = data;
+ rdata.length = 4;
+ rdata.rdclass = dns_rdataclass_in;
+ rdata.type = dns_rdatatype_a;
+
+ dns_rdatalist_init(&rdatalist);
+ rdatalist.ttl = 2;
+ rdatalist.type = dns_rdatatype_a;
+ rdatalist.rdclass = dns_rdataclass_in;
+ ISC_LIST_APPEND(rdatalist.rdata, &rdata, link);
+
+ switch (pass) {
+ case 0:
+ /* default: stale processing off */
+ break;
+ case 1:
+ /* turn on stale processing */
+ result = dns_db_setservstalettl(db, 1);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ break;
+ case 2:
+ /* turn off stale processing */
+ result = dns_db_setservstalettl(db, 0);
+ assert_int_equal(result, ISC_R_SUCCESS);
+ break;
+ }
+
+ dns_rdataset_init(&rdataset);
+ result = dns_rdatalist_tordataset(&rdatalist, &rdataset);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+

```

```

+ result = dns_db_findnode(db, example, true, &node);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ result = dns_db_addrdataset(db, node, NULL, 0, &rdataset, 0,
+
+ NULL);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ dns_db_detachnode(db, &node);
+ dns_rdataset_disassociate(&rdataset);
+
+ result = dns_db_find(db, example, NULL, dns_rdatatype_a,
+ 0, 0, &node, found, &rdataset, NULL);
+ assert_int_equal(result, ISC_R_SUCCESS);
+
+ /*
+  * May loop for up to 2 seconds performing non stale lookups.
+  */
+ count = 0;
+ do {
+  count++;
+  assert_in_range(count, 0, 20); /* loop sanity */
+  assert_int_equal(rdataset.attributes &
+  DNS_RDATASETATTR_STALE, 0);
+  assert_true(rdataset.ttl > 0);
+  dns_db_detachnode(db, &node);
+  dns_rdataset_disassociate(&rdataset);
+
+  usleep(100000); /* 100 ms */
+
+  result = dns_db_find(db, example, NULL,
+  dns_rdatatype_a, 0, 0,
+  &node, found, &rdataset, NULL);
+ } while (result == ISC_R_SUCCESS);
+
+ assert_int_equal(result, ISC_R_NOTFOUND);
+
+ /*
+  * Check whether we can get stale data.
+  */
+ result = dns_db_find(db, example, NULL, dns_rdatatype_a,
+
+  DNS_DBFIND_STALEOK, 0,
+  &node, found, &rdataset, NULL);
+ switch (pass) {
+ case 0:
+  assert_int_equal(result, ISC_R_NOTFOUND);
+  break;

```

```

+ case 1:
+ /*
+  * Should loop for 1 second with stale lookups then
+  * stop.
+  */
+ count = 0;
+ do {
+   count++;
+   assert_in_range(count, 0, 49); /* loop sanity */
+   assert_int_equal(result, ISC_R_SUCCESS);
+   assert_int_equal(rdataset.ttl, 0);
+   assert_int_equal(rdataset.attributes &
+     DNS_RDATASETATTR_STALE,
+     DNS_RDATASETATTR_STALE);
+   dns_db_detachnode(db, &node);
+   dns_rdataset_disassociate(&rdataset);
+
+   usleep(100000); /* 100 ms */
+
+   result = dns_db_find(db, example, NULL,
+     dns_rdatatype_a,
+     DNS_DBFIND_STALEOK,
+     0, &node, found,
+     &rdataset, NULL);
+ } while (result == ISC_R_SUCCESS);
+ assert_in_range(count, 1, 10);
+ assert_int_equal(result, ISC_R_NOTFOUND);
+ break;
+ case 2:
+   assert_int_equal(result,
+     ISC_R_NOTFOUND);
+   break;
+ }
+ }
+
+ dns_db_detach(&db);
+ isc_mem_detach(&mymctx);
+}
+
+/* database class */
static void
class_test(void **state) {
@@ -213,6 +405,8 @@ int
main(void) {
const struct CMUnitTest tests[] = {
  cmocka_unit_test(getoriginnode_test),
+ cmocka_unit_test(getsetserverstalettl_test),
+ cmocka_unit_test(dns_dbfind_staleok_test),

```



```

cmocka_unit_test_setup_teardown(class_test,
    _setup, _teardown),
cmocka_unit_test_setup_teardown(dbtype_test,
diff --git a/lib/dns/view.c b/lib/dns/view.c
index a7ba613..a644c5f 100644
--- a/lib/dns/view.c
+++ b/lib/dns/view.c
@@ -229,6 +229,9 @@ dns_view_create(isc_mem_t *mctx, dns_rdataclass_t rdclass,
view->flush = false;
view->dlv = NULL;
view->maxudp = 0;
+ view->staleanswersttl = 1;
+ view->staleanswersok = dns_stale_answer_conf;
+ view->staleanswersenable = false;
view->nocookieudp = 0;
view->maxbits = 0;
view->v4_aaaa = dns_aaaa_ok;
diff --git a/lib/iscconf/namedconf.c b/lib/iscconf/namedconf.c
index
212194e..b562f95 100644
--- a/lib/iscconf/namedconf.c
+++ b/lib/iscconf/namedconf.c
@@ -1778,6 +1778,7 @@ view_clauses[] = {
{ "max-ncache-ttl", &cfg_type_uint32, 0 },
{ "max-recursion-depth", &cfg_type_uint32, 0 },
{ "max-recursion-queries", &cfg_type_uint32, 0 },
+ { "max-stale-ttl", &cfg_type_ttlval, 0 },
{ "max-udp-size", &cfg_type_uint32, 0 },
{ "message-compression", &cfg_type_boolean, 0 },
{ "min-roots", &cfg_type_uint32, CFG_CLAUSEFLAG_NOTIMP },
@@ -1806,7 +1807,9 @@ view_clauses[] = {
{ "request-nsid", &cfg_type_boolean, 0 },
{ "request-sit", &cfg_type_boolean, CFG_CLAUSEFLAG_OBSOLETE },
{ "require-server-cookie", &cfg_type_boolean, 0 },
+ { "resolver-nonbackoff-tries", &cfg_type_uint32, 0 },
{ "resolver-query-timeout", &cfg_type_uint32, 0 },
+ { "resolver-retry-interval", &cfg_type_uint32, 0 },
{ "response-policy", &cfg_type_rpz, 0 },
{ "rfc2308-type1", &cfg_type_boolean, CFG_CLAUSEFLAG_NYI },
{ "root-delegation-only", &cfg_type_optional_exclude,
0 },
@@ -1815,6 +1818,8 @@ view_clauses[] = {
{ "send-cookie", &cfg_type_boolean, 0 },
{ "servfail-ttl", &cfg_type_ttlval, 0 },
{ "sortlist", &cfg_type_bracketed_aaml, 0 },
+ { "stale-answer-enable", &cfg_type_boolean, 0 },
+ { "stale-answer-ttl", &cfg_type_ttlval, 0 },
{ "suppress-initial-notify", &cfg_type_boolean, CFG_CLAUSEFLAG_NYI },

```

```
{ "topology", &cfg_type_bracketed_aml, CFG_CLAUSEFLAG_NOTIMP },
{ "transfer-format", &cfg_type_transferformat, 0 },
```

--

2.26.2

Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/bind-9.11-serve-stale.patch

No license file was found, but licenses were detected in source scan.

From af3b530773231f8cff6548e36962ad1f25e38c5d Mon Sep 17 00:00:00 2001

From: Evan Hunt <each@isc.org>

Date: Thu, 28 Sep 2017 10:09:22 -0700

Subject: [PATCH] completed and corrected the crypto-random change

4724. [func] By default, BIND now uses the random number functions provided by the crypto library (i.e., OpenSSL or a PKCS#11 provider) as a source of randomness rather than /dev/random. This is suitable for virtual machine environments which have limited entropy pools and lack hardware random number generators.

This can be overridden by specifying another entropy source via the "random-device" option in named.conf, or via the -r command line option; however, for functions requiring full cryptographic strength, such as DNSSEC key generation, this cannot be overridden. In particular, the -r command line option no longer has any effect on dnssec-keygen.

This can be disabled by building with "configure --disable-crypto-rand".
[RT #31459] [RT #46047]

| | |
|--|----------------|
| bin/confgen/keygen.c | 12 +++--- |
| bin/dnssec/dnssec-keygen.docbook | 24 ++++++----- |
| bin/dnssec/dnssectool.c | 12 +++--- |
| bin/named/client.c | 3 +- |
| bin/named/config.c | 4 +- |
| bin/named/controlconf.c | 19 +++++--- |
| bin/named/include/named/server.h | 2 + |
| bin/named/interfacemgr.c | 1 + |
| bin/named/query.c | 1 + |
| bin/named/server.c | 52 ++++++----- |
| bin/nsupdate/nsupdate.c | 4 +- |
| bin/tests/system/pipelined/pipequeries.c | 4 +- |

```

bin/tests/system/tkey/keycreate.c      | 4 +-
bin/tests/system/tkey/keydelete.c     | 5 +--
doc/arm/Bv9ARM-book.xml                | 55 ++++++-----
doc/arm/notes-rh-changes.xml          | 42 ++++++
doc/arm/notes.xml                      | 1 +
lib/dns/dst_api.c                      | 4 +-
lib/dns/include/dst/dst.h              | 14 +++++-
lib/dns/openssl_link.c                 | 3 +-
lib/isc/include/isc/entropy.h          | 48 ++++++-----
lib/isc/include/isc/random.h           | 26 ++++++----
lib/iscconf/namedconf.c                | 2 +-
23 files changed, 240 insertions(+), 102 deletions(-)
create mode 100644 doc/arm/notes-rh-changes.xml

```

```

diff --git a/bin/confgen/keygen.c b/bin/confgen/keygen.c
index bd269e7..1ac775f 100644
--- a/bin/confgen/keygen.c
+++ b/bin/confgen/keygen.c
@@ -161,17 +161,15 @@ generate_key(isc_mem_t *mctx, const char *randomfile, dns_secalg_t alg,

```

```

    DO("create entropy context", isc_entropy_create(mctx, &ectx));

- if (randomfile != NULL && strcmp(randomfile, "keyboard") == 0) {
- randomfile = NULL;
- open_keyboard = ISC_ENTROPY_KEYBOARDYES;
- }
#ifdef ISC_PLATFORM_CRYPTORANDOM
- if (randomfile != NULL &&
-     strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM)
== 0) {
- randomfile = NULL;
+ if (randomfile == NULL) {
+     isc_entropy_usehook(ectx, true);
+ }
#endif
+ if (randomfile != NULL && strcmp(randomfile, "keyboard") == 0) {
+ randomfile = NULL;
+ open_keyboard = ISC_ENTROPY_KEYBOARDYES;
+ }
    DO("start entropy source", isc_entropy_usebestsource(ectx,
        &entropy_source,
        randomfile,

```

```

diff --git a/bin/dnssec/dnssec-keygen.docbook b/bin/dnssec/dnssec-keygen.docbook
index bd19e1d..2c09b30 100644
--- a/bin/dnssec/dnssec-keygen.docbook
+++ b/bin/dnssec/dnssec-keygen.docbook
@@ -349,15 +349,23 @@

```

<term>-r <replaceable class="parameter">randomdev</replaceable></term>

<listitem>

<para>

- Specifies the source of randomness. If the operating
- system does not provide a <filename>/dev/random</filename>
- or equivalent device, the default source of randomness
- is keyboard input. <filename>randomdev</filename>
- specifies
- + Specifies a source of randomness. Normally, when generating
- +

DNSSEC keys, this option has no effect; the random number

- + generation function provided by the cryptographic library will
- + be used.

+ </para>

+ <para>

- + If that behavior is disabled at compile time, however,
- + the specified file will be used as entropy source
- + for key generation. <filename>randomdev</filename> is
- + the name of a character device or file containing random
- data to be used instead of the default. The special value
- <filename>keyboard</filename> indicates that keyboard
- input should be used.

- + data to be used. The special value <filename>keyboard</filename>
- + indicates that keyboard input should be used.

+ </para>

+ <para>

- + The default is <filename>/dev/random</filename> if the
- + operating system provides it or an equivalent device;
- + if not, the default source of randomness is keyboard input.

</para>

</listitem>

</varlistentry>

diff --git a/bin/dnssec/dnssectool.c b/bin/dnssec/dnssectool.c

index

2a0f9c6..6fcd411 100644

--- a/bin/dnssec/dnssectool.c

+++ b/bin/dnssec/dnssectool.c

```
@@ -241,18 +241,16 @@ setup_entropy(isc_mem_t *mctx, const char *randomfile, isc_entropy_t **ectx) {
    ISC_LIST_INIT(sources);
}
```

```
+#ifdef ISC_PLATFORM_CRYPTORANDOM
```

```
+ if (randomfile == NULL) {
+   isc_entropy_usehook(*ectx, true);
+ }
```

```
+#endif
```

```
if (randomfile != NULL && strcmp(randomfile, "keyboard") == 0) {
    usekeyboard = ISC_ENTROPY_KEYBOARDYES;
```

```

randomfile = NULL;
}

-#ifndef ISC_PLATFORM_CRYPTORANDOM
- if (randomfile != NULL &&
-   strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
-   randomfile = NULL;
-   isc_entropy_usehook(*ectx, true);
- }
-#endif
result = isc_entropy_usebestsource(*ectx, &source, randomfile,
    usekeyboard);

diff --git a/bin/named/client.c b/bin/named/client.c
index 4a50ad9..4d140e8 100644
--- a/bin/named/client.c
+++ b/bin/named/client.c
@@ -1768,7 +1768,8 @@ ns_client_adopt(ns_client_t *client, dns_message_t *message,

    isc_buffer_init(&buf,
        cookie, sizeof(cookie));
    isc_stdtime_get(&now);
-   isc_random_get(&nonce);
+   nonce = ((isc_rng_random(ns_g_server->rngctx) << 16) |
+   isc_rng_random(ns_g_server->rngctx));

    compute_cookie(client, now, nonce, ns_g_server->secret, &buf);

diff --git a/bin/named/config.c b/bin/named/config.c
index 9b343fa..5e663c6 100644
--- a/bin/named/config.c
+++ b/bin/named/config.c
@@ -98,7 +98,9 @@ options {\n\
# pid-file \"\" NS_LOCALSTATEDIR "/run/named/named.pid\""; /* or /lwresd.pid */\n\
port 53;\n\
prefetch 2 9;\n"
-#ifndef PATH_RANDOMDEV
+#if defined(ISC_PLATFORM_CRYPTORANDOM)
+" random-device none;\n"
+#elif defined(PATH_RANDOMDEV)
" random-device \"\" PATH_RANDOMDEV \"\";\n"
#endif
" recursing-file \"named.recursing\";\n\
diff --git a/bin/named/controlconf.c b/bin/named/controlconf.c
index 9fdf49b..42128dc 100644
--- a/bin/named/controlconf.c
+++ b/bin/named/controlconf.c
@@ -327,9 +327,10 @@ log_invalid(isccc_ccmsg_t *ccmsg, isc_result_t result) {

```

```

static void
control_recvmessage(isc_task_t *task, isc_event_t *event) {
- controlconnection_t *conn;
- controllistener_t *listener;
- controlkey_t *key;
+ controlconnection_t *conn = NULL;
+ controllistener_t *listener = NULL;
+ ns_server_t *server = NULL;
+ controlkey_t *key = NULL;
isc_cc_sexpr_t *request = NULL;
isc_cc_sexpr_t *response = NULL;
uint32_t algorithm;
@@ -340,16 +341,17 @@ control_recvmessage(isc_task_t *task, isc_event_t *event) {
isc_buffer_t *text;
isc_result_t result;
isc_result_t eresult;
- isccc_sexpr_t *_ctrl;
+ isccc_sexpr_t *_ctrl = NULL;
isc_cc_time_t sent;
isc_cc_time_t exp;
uint32_t nonce;
- isccc_sexpr_t *data;
+ isccc_sexpr_t *data = NULL;

    REQUIRE(event->ev_type == ISCCC_EVENT_CCMSG);

    conn = event->ev_arg;
    listener = conn->listener;
+ server = listener->controls->server;
    algorithm = DST_ALG_UNKNOWN;
    secret.rstart = NULL;
    text = NULL;
@@ -462,8 +464,11 @@ control_recvmessage(isc_task_t *task, isc_event_t *event) {
    * Establish nonce.
    */
    if (conn->nonce == 0) {
- while (conn->nonce == 0)
-     isc_random_get(&conn->nonce);
+ while (conn->nonce == 0) {
+     uint16_t r1 = isc_rng_random(server->rngctx);
+     uint16_t r2 = isc_rng_random(server->rngctx);
+     conn->nonce = (r1 << 16) | r2;
+ }
    eresult = ISC_R_SUCCESS;
    } else
    eresult = ns_control_docommand(request, listener->readonly, &text);
diff --git a/bin/named/include/named/server.h b/bin/named/include/named/server.h

```

```

index 4fd0194..0ba2627 100644
--- a/bin/named/include/named/server.h
+++ b/bin/named/include/named/server.h
@@ -20,6 +20,7 @@
#include <isc/log.h>
#include <isc/magic.h>
#include <isc/quota.h>
+#include <isc/random.h>
#include <isc/sockaddr.h>
#include <isc/types.h>
#include <isc/xml.h>
@@ -135,6 +136,7 @@ struct ns_server {
char * lockfile;

uint16_t transfer_tcp_message_size;
+ isc_rng_t * rngctx;
};

struct ns_altsecret {
diff --git a/bin/named/interfacemgr.c b/bin/named/interfacemgr.c
index 93aac31..e12fad9 100644
---
a/bin/named/interfacemgr.c
+++ b/bin/named/interfacemgr.c
@@ -17,6 +17,7 @@
#include <isc/interfaceiter.h>
#include <isc/os.h>
+#include <isc/random.h>
#include <isc/string.h>
#include <isc/task.h>
#include <isc/util.h>
diff --git a/bin/named/query.c b/bin/named/query.c
index 58b5914..edf42d2 100644
--- a/bin/named/query.c
+++ b/bin/named/query.c
@@ -20,6 +20,7 @@
#include <isc/mem.h>
#include <isc/platform.h>
#include <isc/print.h>
+#include <isc/random.h>
#include <isc/rwlock.h>
#include <isc/serial.h>
#include <isc/stats.h>
diff --git a/bin/named/server.c b/bin/named/server.c
index b2ae57c..cca7fe8 100644
--- a/bin/named/server.c
+++ b/bin/named/server.c

```

```

@@ -8279,21 +8279,32 @@ load_configuration(const char *filename, ns_server_t *server,
 * Open the source of entropy.
 */
if (first_time) {
+ const char *randomdev = NULL;
+ int level = ISC_LOG_ERROR;
  obj = NULL;
  result = ns_config_get(maps, "random-device", &obj);
- if (result != ISC_R_SUCCESS) {
+ if (result
  == ISC_R_SUCCESS) {
+ if (!cfg_obj_isvoid(obj)) {
+ level = ISC_LOG_INFO;
+ randomdev = cfg_obj_asstring(obj);
+ }
+ }
+ if (randomdev == NULL) {
+#ifdef ISC_PLATFORM_CRYPTORANDOM
+ isc_entropy_usehook(ns_g_entropy, true);
+#else
+ if ((obj != NULL) && !cfg_obj_isvoid(obj))
+ level = ISC_LOG_INFO;
  isc_log_write(ns_g_lctx, NS_LOGCATEGORY_GENERAL,
- NS_LOGMODULE_SERVER, ISC_LOG_INFO,
+ NS_LOGMODULE_SERVER, level,
  "no source of entropy found");
+ if ((obj == NULL) || cfg_obj_isvoid(obj)) {
+ CHECK(ISC_R_FAILURE);
+ }
+#endif
  } else {
- const char *randomdev = cfg_obj_asstring(obj);
-#ifdef ISC_PLATFORM_CRYPTORANDOM
- if (strcmp(randomdev, ISC_PLATFORM_CRYPTORANDOM) == 0)
- isc_entropy_usehook(ns_g_entropy, true);
-#else
- int level = ISC_LOG_ERROR;
  result = isc_entropy_createfilesource(ns_g_entropy,
- randomdev);
+ randomdev);
#ifdef PATH_RANDOMDEV
  if
  (ns_g_fallbackentropy != NULL) {
  level = ISC_LOG_INFO;
@@ -8304,8 +8315,8 @@ load_configuration(const char *filename, ns_server_t *server,
  NS_LOGCATEGORY_GENERAL,
  NS_LOGMODULE_SERVER,
  level,

```



```

-     "could not open entropy source "
-     "%s: %s",
+     "could not open "
+     "entropy source %s: %s",
    randomdev,
    isc_result_totext(result));
}
@@ -8325,7 +8336,6 @@ load_configuration(const char *filename, ns_server_t *server,
}
isc_entropy_detach(&ns_g_fallbackentropy);
}
#endif
#endif
}

@@ -9097,6 +9107,7 @@ ns_server_create(isc_mem_t *mctx, ns_server_t **serverp) {
server->in_roothints = NULL;
server->blackholeacl = NULL;
server->keepresporder = NULL;
+ server->rngctx = NULL;

/* Must be first. */
CHECKFATAL(dst_lib_init2(ns_g_mctx, ns_g_entropy,
@@ -9123,6 +9134,9 @@ ns_server_create(isc_mem_t *mctx, ns_server_t **serverp) {
CHECKFATAL(dns_tkeyctx_create(ns_g_mctx,
ns_g_entropy,
&server->tkeyctx,
"creating TKEY context");
+ server->rngctx = NULL;
+ CHECKFATAL(isc_rng_create(ns_g_mctx, ns_g_entropy, &server->rngctx),
+ "creating random numbers context");

/*
* Setup the server task, which is responsible for coordinating
@@ -9329,7 +9343,8 @@ ns_server_destroy(ns_server_t **serverp) {

if (server->zonemgr != NULL)
dns_zonemgr_detach(&server->zonemgr);
-
+ if (server->rngctx != NULL)
+ isc_rng_detach(&server->rngctx);
if (server->tkeyctx != NULL)
dns_tkeyctx_destroy(&server->tkeyctx);

@@ -13366,10 +13381,10 @@ newzone_cfgctx_destroy(void **cfgrp) {

static isc_result_t
generate_salt(unsigned char *salt, size_t saltlen) {

```

```

- int i, n;
+ size_t i, n;
  union {
    unsigned char rnd[256];
-   uint32_t rnd32[64];
+   uint16_t rnd16[128];
  } rnd;
  unsigned char text[512 + 1];
  isc_region_t r;
@@ -13379,9 +13394,10 @@ generate_salt(unsigned char *salt, size_t saltlen) {
  if (saltlen > 256U)
    return
  (ISC_R_RANGE);

- n = (int) (saltlen + sizeof(uint32_t) - 1) / sizeof(uint32_t);
- for (i = 0; i < n; i++)
-   isc_random_get(&rnd.rnd32[i]);
+ n = (saltlen + sizeof(uint16_t) - 1) / sizeof(uint16_t);
+ for (i = 0; i < n; i++) {
+   rnd.rnd16[i] = isc_rng_random(ns_g_server->rngctx);
+ }

  memmove(salt, rnd.rnd, saltlen);

diff --git a/bin/nsupdate/nsupdate.c b/bin/nsupdate/nsupdate.c
index 7f15cbc..458aa76 100644
--- a/bin/nsupdate/nsupdate.c
+++ b/bin/nsupdate/nsupdate.c
@@ -289,9 +289,7 @@ setup_entropy(isc_mem_t *mctx, const char *randomfile, isc_entropy_t **ectx) {
}

#ifdef ISC_PLATFORM_CRYPTORANDOM
- if (randomfile != NULL &&
-   strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
-   randomfile = NULL;
+ if (randomfile == NULL) {
+   isc_entropy_usehook(*ectx, true);
+ }
#endif

diff --git a/bin/tests/system/pipelined/pipequeries.c b/bin/tests/system/pipelined/pipequeries.c
index 95b65bf..7a81d4e 100644
--- a/bin/tests/system/pipelined/pipequeries.c
+++ b/bin/tests/system/pipelined/pipequeries.c
@@
-280,9 +280,7 @@ main(int argc, char *argv[]) {
  ectx = NULL;
  RUNCHECK(isc_entropy_create(mctx, &ectx));
#ifdef ISC_PLATFORM_CRYPTORANDOM

```

```

- if (randomfile != NULL &&
-   strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
- randomfile = NULL;
+ if (randomfile == NULL) {
  isc_entropy_usehook(ectx, true);
  }
#endif
diff --git a/bin/tests/system/tkey/keycreate.c b/bin/tests/system/tkey/keycreate.c
index 3236968..4fa77b6 100644
--- a/bin/tests/system/tkey/keycreate.c
+++ b/bin/tests/system/tkey/keycreate.c
@@ -255,9 +255,7 @@ main(int argc, char *argv[]) {
  ectx = NULL;
  RUNCHECK(isc_entropy_create(mctx, &ectx));
#ifdef ISC_PLATFORM_CRYPTORANDOM
- if (randomfile != NULL &&
-   strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
- randomfile = NULL;
+ if (randomfile == NULL) {
  isc_entropy_usehook(ectx, true);
  }
#endif
diff --git a/bin/tests/system/tkey/keydelete.c b/bin/tests/system/tkey/keydelete.c
index 43fb6b0..105e151 100644
--- a/bin/tests/system/tkey/keydelete.c
+++
b/bin/tests/system/tkey/keydelete.c
@@ -171,6 +171,7 @@ main(int argc, char **argv) {
  randomfile = argv[2];
  argv += 2;
  argc -= 2;
+ POST(argc);
  }
  keyname = argv[1];

@@ -182,9 +183,7 @@ main(int argc, char **argv) {
  ectx = NULL;
  RUNCHECK(isc_entropy_create(mctx, &ectx));
#ifdef ISC_PLATFORM_CRYPTORANDOM
- if (randomfile != NULL &&
-   strcmp(randomfile, ISC_PLATFORM_CRYPTORANDOM) == 0) {
- randomfile = NULL;
+ if (randomfile == NULL) {
  isc_entropy_usehook(ectx, true);
  }
#endif
diff --git a/doc/arm/Bv9ARM-book.xml b/doc/arm/Bv9ARM-book.xml
index ca98726..1f9df2c 100644

```

```

--- a/doc/arm/Bv9ARM-book.xml
+++ b/doc/arm/Bv9ARM-book.xml
@@ -5034,22 +5034,45 @@ badresp:1,adberr:0,findfail:0,valfail:0]
    <term><command>random-device</command></term>
    <listitem>
      <para>
- This specifies a source of entropy to be used by the server. Entropy is
- primarily needed
- for DNSSEC operations, such as TKEY transactions
and dynamic
- update of signed
- zones. This option specifies the device (or file) from which
- to read
- entropy. If it is a file, operations requiring entropy will
- fail when the
- file has been exhausted. If <command>random-device</command> is not specified, the default value
- is
- <filename>/dev/random</filename>
- (or equivalent) when present, and none otherwise. The
- <command>random-device</command> option takes
- effect during
- the initial configuration load at server startup time and
- is ignored on subsequent reloads.
+ Specifies a source of entropy to be used by the server.
+ This is a device or file from which to read entropy.
+ If it is a file, operations requiring entropy
+ will fail when the file has been exhausted.
+ </para>
+ <para>
+ Entropy is needed for cryptographic operations such as
+ TKEY transactions, dynamic update of signed zones, and
+ generation of TSIG session keys. It is also used for
+ seeding and stirring the pseudo-random
number generator,
+ which is used for less critical functions requiring
+ randomness such as generation of DNS message transaction
+ ID's.
+ </para>
+ <para>
+ If <command>random-device</command> is not specified, or
+ if it is set to <literal>none</literal>, entropy will be
+ read from the random number generation function supplied
+ by the cryptographic library with which BIND was linked
+ (i.e. OpenSSL or a PKCS#11 provider).
+ </para>
+ <para>
+ The <command>random-device</command> option takes
+ effect during the initial configuration load at server

```

+ startup time and is ignored on subsequent reloads.

+ </para>

+ <para>

+ If BIND is built with

+ <command>configure --disable-crypto-rand</command>, then

+ entropy is <emphasis>not</emphasis> sourced from the

+ cryptographic library. In this case, if

+ <command>random-device</command> is not specified, the

+ default value is the system random device,

+ <filename>/dev/random</filename>

or the equivalent.

+ This default can be overridden with

+ <command>configure --with-randomdev</command>.

+ If no system random device exists, then no entropy source

+ will be configured, and <command>named</command> will only

+ be able to use pseudo-random numbers.

</para>

</listitem>

</varlistentry>

```
diff --git a/doc/arm/notes-rh-changes.xml b/doc/arm/notes-rh-changes.xml
```

```
new file mode 100644
```

```
index 0000000..89a4961
```

```
--- /dev/null
```

```
+++ b/doc/arm/notes-rh-changes.xml
```

```
@@ -0,0 +1,42 @@
```

```
+<!--
```

```
+ - Copyright (C) Internet Systems Consortium, Inc. ("ISC")
```

```
+ -
```

```
+ - This Source Code Form is subject to the terms of the Mozilla Public
```

```
+ - License, v. 2.0. If a copy of the MPL was not distributed with this
```

```
+ - file, You can obtain one at http://mozilla.org/MPL/2.0/.
```

```
+ -
```

```
+ - See the COPYRIGHT file distributed with this work for additional
```

```
+ - information regarding copyright ownership.
```

```
+-->
```

```
+
```

```
+<section xml:id="relnotes_rh_changes"><info><title>Red Hat Specific Changes</title></info>
```

```
+
```

```
<itemizedlist>
```

```
+ <listitem>
```

```
+ <para>
```

```
+ By default, BIND now uses the random number generation functions
```

```
+ in the cryptographic library (i.e., OpenSSL or a PKCS#11
```

```
+ provider) as a source of high-quality randomness rather than
```

```
+ <filename>/dev/random</filename>. This is suitable for virtual
```

```
+ machine environments, which may have limited entropy pools and
```

```
+ lack hardware random number generators.
```

```
+ </para>
```

```

+ <para>
+ This can be overridden by specifying another entropy source via
+ the <command>random-device</command> option in
+ <filename>named.conf</filename>, or via the <command>-r</command>
+ command line option. However, for functions requiring full
+ cryptographic strength, such as DNSSEC key generation, this
+ <emphasis>cannot</emphasis> be overridden. In particular, the
+ <command>-r</command> command line option no longer has any
+ effect on
+ <command>dnssec-keygen</command>.
+ </para>
+ <para>
+ This can be disabled by building with
+ <command>configure --disable-crypto-rand</command>, in which
+ case <filename>/dev/random</filename> will be the default
+ entropy source. [RT #31459] [RT #46047]
+ </para>
+ </listitem>
+ </itemizedlist>
+</section>
+
diff --git a/doc/arm/notes.xml b/doc/arm/notes.xml
index a5e42c0..f8cb1f9 100644
--- a/doc/arm/notes.xml
+++ b/doc/arm/notes.xml
@@ -47,6 +47,7 @@
<xi:include xmlns:xi="http://www.w3.org/2001/XInclude" href="notes-9.11.1.xml"/>
<xi:include xmlns:xi="http://www.w3.org/2001/XInclude" href="notes-9.11.0.xml"/>

+ <xi:include xmlns:xi="http://www.w3.org/2001/XInclude" href="notes-rh-changes.xml"/>
+ <xi:include xmlns:xi="http://www.w3.org/2001/XInclude" href="notes-eol.xml"/>
+ <xi:include xmlns:xi="http://www.w3.org/2001/XInclude" href="notes-thankyou.xml"/>
</section>
diff --git a/lib/dns/dst_api.c b/lib/dns/dst_api.c
index
aa54afc..2156384 100644
--- a/lib/dns/dst_api.c
+++ b/lib/dns/dst_api.c
@@ -2017,10 +2017,12 @@ dst__entropy_getdata(void *buf, unsigned int len, bool pseudo) {
else
flags |= ISC_ENTROPY_BLOCKING;
#ifdef ISC_PLATFORM_CRYPTORANDOM
+ /* get entropy directly from crypto provider */
return (dst_random_getdata(buf, len, NULL, flags));
#else
+ /* get entropy from entropy source or hook function */
return (isc_entropy_getdata(dst_entropy_pool, buf, len, NULL, flags));
#endif

```

```
+#endif /* ISC_PLATFORM_CRYPTORANDOM */
#endif /* PKCS11CRYPTO */
}
```

```
diff --git a/lib/dns/include/dst/dst.h b/lib/dns/include/dst/dst.h
index 3aba028..180c841 100644
```

```
--- a/lib/dns/include/dst/dst.h
```

```
+++ b/lib/dns/include/dst/dst.h
```

```
@@ -163,8 +163,18 @@ isc_result_t
```

```
dst_random_getdata(void *data, unsigned int length,
    unsigned int *returned, unsigned int flags);
```

```
/*%<
```

```
- * \brief Return data from the crypto random generator.
```

```
- * Specialization of isc_entropy_getdata().
```

```
+ * Gets random data from the random
```

```
generator provided by the
```

```
+ * crypto library, if BIND was built with --enable-crypto-rand.
```

```
+ *
```

```
+ * See isc_entropy_getdata() for parameter usage. Normally when
```

```
+ * this function is available, it will be set up as a hook in the
```

```
+ * entropy context, so that isc_entropy_getdata() is a front-end to
```

```
+ * this function.
```

```
+ *
```

```
+ * Returns:
```

```
+ * \li ISC_R_SUCCESS on success
```

```
+ * \li ISC_R_NOTIMPLEMENTED if BIND is built with --disable-crypto-rand
```

```
+ * \li DST_R_OPENSSEFAILURE, DST_R_CRYPTOFailure, or other codes on error
```

```
*/
```

```
bool
```

```
diff --git a/lib/dns/openssl_link.c b/lib/dns/openssl_link.c
```

```
index 3f4f822..cfdc757 100644
```

```
--- a/lib/dns/openssl_link.c
```

```
+++ b/lib/dns/openssl_link.c
```

```
@@ -484,7 +484,8 @@ dst__openssl_getengine(const char *engine) {
```

```
isc_result_t
```

```
dst_random_getdata(void *data, unsigned int length,
```

```
- unsigned int *returned, unsigned int flags) {
```

```
+ unsigned int *returned, unsigned int flags)
```

```
+{
```

```
#ifdef ISC_PLATFORM_CRYPTORANDOM
```

```
#ifndef DONT_REQUIRE_DST_LIB_INIT
```

```
INSIST(dst__memory_pool
```

```
!= NULL);
```

```
diff --git a/lib/isc/include/isc/entropy.h b/lib/isc/include/isc/entropy.h
```

```
index f32c9dc..bed276b 100644
```

```
--- a/lib/isc/include/isc/entropy.h
```

```

+++ b/lib/isc/include/isc/entropy.h
@@ -189,9 +189,8 @@ isc_entropy_createcallbacksource(isc_entropy_t *ent,
/*!<
 * \brief Create an entropy source that is polled via a callback.
 *
- * This would
- * be used when keyboard input is used, or a GUI input method. It can
- * also be used to hook in any external entropy source.
+ * This would be used when keyboard input is used, or a GUI input method.
+ * It can also be used to hook in any external entropy source.
 *
 * Samples are added via isc_entropy_addcallbacksample(), below.
 * _addcallbacksample() is the only function which may be called from
@@ -232,15 +231,32 @@ isc_result_t
isc_entropy_getdata(isc_entropy_t *ent, void *data, unsigned int length,
    unsigned int *returned, unsigned int flags);
/*!<
- * \brief Extract data from the entropy pool. This may load
the pool from various
- * sources.
+ * \brief Get random data from entropy pool 'ent'.
 *
- * Do this by stirring the pool and returning a part of hash as randomness.
- * Note that no secrets are given away here since parts of the hash are
- * xored together before returned.
+ * If a hook has been set up using isc_entropy_sethook() and
+ * isc_entropy_usehook(), then the hook function will be called to get
+ * random data.
 *
- * Honor the request from the caller to only return good data, any data,
- * etc.
+ * Otherwise, randomness is extracted from the entropy pool set up in BIND.
+ * This may cause the pool to be loaded from various sources. This is done
+ * by stirring the pool and returning a part of hash as randomness.
+ * (Note that no secrets are given away here since parts of the hash are
+ * XORed together before returning.)
+ *
+ * 'flags' may contain ISC_ENTROPY_GOODONLY, ISC_ENTROPY_PARTIAL, or
+ * ISC_ENTROPY_BLOCKING. These will be honored if the hook function is
+
 * not in use. If it is, the flags will be passed to the hook function
+ * but it may ignore them.
+ *
+ * Up to 'length' bytes of randomness are retrieved and copied into 'data'.
+ * (If 'returned' is not NULL, and the number of bytes copied is less than
+ * 'length' - which may happen if ISC_ENTROPY_PARTIAL was used - then the
+ * number of bytes copied will be stored in *returned.)
+ *

```



```

+ * Returns:
+ * \li ISC_R_SUCCESS on success
+ * \li ISC_R_NOENTROPY if entropy pool is empty
+ * \li other error codes are possible when a hook is in use
*/

void
@@ -305,13 +321,21 @@ isc_entropy_usebestsource(isc_entropy_t *ectx, isc_entropysource_t **source,
void
isc_entropy_usehook(isc_entropy_t *ectx, bool onoff);
/*!<
- * \brief Mark/unmark the given entropy structure as being hooked.
+ * \brief Configure entropy context 'ectx' to use the hook function
+ *
+ * Sets the entropy context to call the hook function for random number
+ * generation, if such a function has been configured via
+
+ * isc_entropy_sethook(), whenever isc_entropy_getdata() is called.
*/

void
isc_entropy_sethook(isc_entropy_getdata_t myhook);
/*!<
- * \brief Set the getdata hook (e.g., for a crypto random generator).
+ * \brief Set the hook function.
+ *
+ * The hook function is a global value: only one hook function
+ * can be set in the system. Individual entropy contexts may be
+ * configured to use it, or not, by calling isc_entropy_usehook().
*/

ISC_LANG_ENDDECLS
diff --git a/lib/isc/include/isc/random.h b/lib/isc/include/isc/random.h
index f38e80d..3cb1c56 100644
--- a/lib/isc/include/isc/random.h
+++ b/lib/isc/include/isc/random.h
@@ -19,13 +19,23 @@
#include <isc/mutex.h>

/*! \file isc/random.h
- * \brief Implements a random state pool which will let the caller return a
- * series of possibly non-reproducible random values.
+ * \brief Implements pseudo random number generators.
+ *
+ * Note that the
+ * strength of these numbers is not all that high, and should not be
+ * used

```

```

in cryptography functions. It is useful for jittering values
- * a bit here and there, such as timeouts, etc.
+ * Two pseudo-random number generators are implemented, in isc_random_*
+ * and isc_rng_*. Neither one is very strong; they should not be used
+ * in cryptography functions.
+ *
+ * isc_random_* is based on arc4random if it is available on the system.
+ * Otherwise it is based on the posix srand() and rand() functions.
+ * It is useful for jittering values a bit here and there, such as
+ * timeouts, etc, but should not be relied upon to generate
+ * unpredictable sequences (for example, when choosing transaction IDs).
+ *
+ * isc_rng_* is based on ChaCha20, and is seeded and stirred from the
+ * system entropy source. It is stronger than isc_random_* and can
+ * be used for generating unpredictable sequences. It is still not as
+ * good as using system entropy directly (see entropy.h) and should not
+ * be used for cryptographic functions such as key generation.
*/

```

ISC_LANG_BEGINDECLS

```

@@
-113,8 +123,8 @@ isc_rng_random(isc_rng_t *rngctx);
uint16_t
isc_rng_uniformrandom(isc_rng_t *rngctx, uint16_t upper_bound);
/*%<
- * Returns a uniformly distributed pseudo random 16-bit unsigned
- * integer.
+ * Returns a uniformly distributed pseudo-random 16-bit unsigned integer
+ * less than 'upper_bound'.
*/

```

ISC_LANG_ENDDECLS

```

diff --git a/lib/iscconf/namedconf.c b/lib/iscconf/namedconf.c
index e74c93b..212194e 100644
--- a/lib/iscconf/namedconf.c
+++ b/lib/iscconf/namedconf.c
@@ -1109,7 +1109,7 @@ options_clauses[] = {
 { "pid-file", &cfg_type_qstringornone, 0 },
 { "port", &cfg_type_uint32, 0 },
 { "querylog", &cfg_type_boolean, 0 },
- { "random-device", &cfg_type_qstring, 0 },
+ { "random-device", &cfg_type_qstringornone, 0 },
 { "recursing-file", &cfg_type_qstring, 0 },
 { "recursive-clients", &cfg_type_uint32, 0 },
 { "reserved-sockets", &cfg_type_uint32, 0 },
--
2.26.2

```

Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/bind-9.11-rt46047.patch

No license file was found, but licenses were detected in source scan.

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Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/zonetodb.1

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/zone2sqlite.1

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/*

* Copyright (C) 2004, 2005 Stig Venaas <venaas@uninett.no>

* \$Id: ldap2zone.c,v 1.1 2007/07/24 15:18:00 atkac Exp \$

*

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*/

Found in path(s):

* /opt/cola/permits/1701043592_1685703124.6755614/0/bind-zip/bind/SOURCES/ldap2zone.c

1.463 micronaut-inject-java 3.8.8

1.463.1 Available under license :

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<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

* /opt/cola/permits/1701043949_1685472426.070663/0/micronaut-inject-java-3-8-8-jar/META-

INF/maven/io.micronaut/micronaut-inject-java/pom.xml

1.464 micronaut-jackson-databind 3.8.8

1.464.1 Available under license :

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<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

* /opt/cola/permits/1701043735_1685472889.8611712/0/micronaut-jackson-databind-3-8-8-jar/META-

INF/maven/io.micronaut/micronaut-jackson-databind/pom.xml

1.465 antlr 4.10

1.465.1 Available under license :

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2015/05/12, Pursuit92, Josh Chase, jcjoshuachase@gmail.com
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1.466 micronaut-http 3.8.8

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jar/io/micronaut/http/annotation/RequestBean.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/DefaultHttpFactories.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
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*
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jar/io/micronaut/http/hateoas/package-info.java
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* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
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/opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/filter/DefaultFilterEntry.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/context/ClientContextPathProvider.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/bind/package-info.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/bind/binders/RequestArgumentBinder.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/context/ServerContextPathProvider.java

* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/simple/SimpleHttpRequest.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/annotation/Options.java
*
/opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/MutableHttpParameters.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/annotation/PathVariable.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/filter/package-info.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/codec/MediaTypeCodec.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/codec/DefaultMediaTypeCodecRegistry.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/context/event/HttpRequestTerminatedEvent.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/cookie/CookieFactory.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/converters/package-info.java
*
/opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/MutableHttpRequest.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/filter/HttpServerFilterResolver.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/bind/binders/QueryValueArgumentBinder.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/bind/binders/BodyArgumentBinder.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/util/OutgoingHttpRequestProcessorImpl.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/exceptions/HttpStatusException.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/filter/HttpServerFilter.java
*
/opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/HttpRequestFactory.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/simple/SimpleHttpResponse.java
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Found in path(s):

* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/util/HttpHeadersUtil.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/bind/binders/PartAnnotationBinder.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/hateoas/GenericResource.java
*
/opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/ssl/SslConfiguration.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/ssl/ClientSslConfiguration.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/MediaTypeConvertersRegistrar.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/ssl/ServerSslConfiguration.java
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Found in path(s):

* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/util/HttpTypeInformationProvider.java

```

* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/filter/FilterPatternStyle.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/ssl/AbstractClientSslConfiguration.java
*
/opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/cookie/SameSiteConverter.java
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/bind/binders/HttpCoroutineContextFactory.kt
* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-
jar/io/micronaut/http/PushCapableHttpRequest.java
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```

```

# This file maps Internet media types to unique file extension(s).
# Although created for httpd, this file is used by many software systems
# and has been placed in the public domain for unlimited redistribution.
#
# The table below contains both registered and (common) unregistered types.
# A type that has no unique extension can be ignored -- they are listed
# here to guide configurations toward known types and to make it easier to
# identify "new" types. File extensions are also commonly used to indicate
# content languages and encodings, so choose them carefully.
#
# Internet media types should be registered as described in RFC 4288.
# The registry is at <https://www.iana.org/assignments/media-types/>.
#
# https://svn.apache.org/viewvc/httpd/httpd/trunk/docs/conf/mime.types?revision=1810121&view=co
#
# MIME type (lowercased) Extensions
# =====
# application/1d-interleaved-parityfec
#
# application/3gpdash-qoe-report+xml
# application/3gpp-ims+xml
# application/a2l
# application/activemessage
# application/alto-costmap+json
# application/alto-costmapfilter+json
# application/alto-directory+json
# application/alto-endpointcost+json
# application/alto-endpointcostparams+json
# application/alto-endpointprop+json
# application/alto-endpointpropparams+json
# application/alto-error+json
# application/alto-networkmap+json
# application/alto-networkmapfilter+json
# application/aml
application/andrew-inset ez

```

application/applefile
application/applixware aw
application/atf
application/atfx
application/atom+xml atom
application/atomcat+xml atomcat
application/atomdeleted+xml
application/atomicmail
application/atomsvc+xml atomsvc
application/atxml
application/auth-policy+xml
application/bacnet-xdd+zip
application/batch-smtp
application/beep+xml
application/calendar+json
application/calendar+xml
application/call-completion

application/cals-1840
application/cbor
application/ccmp+xml
application/ccxml+xml ccxml
application/cdfx+xml
application/cdmi-capability cdmia
application/cdmi-container cdmic
application/cdmi-domain cdmid
application/cdmi-object cdmio
application/cdmi-queue cdmiq
application/cdni
application/cea
application/cea-2018+xml
application/cellml+xml
application/cfw
application/cms
application/cnrx+xml
application/coap-group+json
application/commonground
application/conference-info+xml
application/cpl+xml
application/csrattrs
application/csta+xml
application/cstadata+xml
application/csvm+json
application/cu-seeme cu
application/cybercash
application/dash+xml
application/dashdelta
application/davmount+xml davmount

application/dca-rft
application/dcd
application/dec-dx
application/dialog-info+xml
application/dicom
application/dii
application/dit
application/dns
application/docbook+xml dbk
application/dskpp+xml
application/dssc+der dssc
application/dssc+xml xdssc

application/dvcs
application/ecmascript ecma
application/edi-consent
application/edi-x12
application/edifact
application/efi
application/emergencycalldata.comment+xml
application/emergencycalldata.deviceinfo+xml
application/emergencycalldata.providerinfo+xml
application/emergencycalldata.serviceinfo+xml
application/emergencycalldata.subscriberinfo+xml
application/emma+xml emma
application/emotionml+xml
application/encaprtsp
application/epp+xml
application/epub+zip epub
application/eshop
application/example
application/exi exi
application/fastinfoset
application/fastsoap
application/fdt+xml
application/fits
application/font-tdpfr pfr
application/framework-attributes+xml
application/geo+json
application/gml+xml gml
application/gpx+xml gpx
application/gxf gxf
application/gzip
application/h224
application/held+xml
application/http
application/hyperstudio stk
#

application/ibe-key-request+xml
application/ibe-pkg-reply+xml
application/ibe-pp-data
application/iges
application/im-iscomposing+xml
application/index
application/index.cmd
application/index.obj
application/index.response
application/index.vnd
application/inkml+xml ink inkml
application/iotp
application/ipfix ipfix
application/ipp
application/isup
application/its+xml
application/java-archive jar
application/java-serialized-object ser
application/java-vm class
application/javascript js
application/javascript mjs
application/jose
application/jose+json
application/jrd+json
application/json json
application/json-patch+json
application/json-seq
application/jsonml+json jsonml
application/jwk+json
application/jwk-set+json
application/jwt
application/kpml-request+xml
application/kpml-response+xml
application/ld+json
application/lgr+xml
application/link-format
application/load-control+xml
application/lost+xml lostxml

application/lostsync+xml
application/lxf
application/mac-binhex40 hqx
application/mac-compactpro cpt
application/macwriteii
application/mads+xml mads
application/marc mrc
application/marcxml+xml mrcx
application/mathematica ma nb mb

application/mathml+xml mathml
application/mathml-content+xml
application/mathml-presentation+xml
application/mbms-associated-procedure-description+xml
application/mbms-deregister+xml
application/mbms-envelope+xml
application/mbms-msk+xml
application/mbms-msk-response+xml
application/mbms-protection-description+xml
application/mbms-reception-report+xml
application/mbms-register+xml
application/mbms-register-response+xml
application/mbms-schedule+xml
application/mbms-user-service-description+xml
application/mbox mbox
application/media-policy-dataset+xml
application/media_control+xml
application/mediaservercontrol+xml mscml
application/merge-patch+json
application/metalink+xml metalink
application/metalink4+xml meta4
application/mets+xml mets

application/mf4
application/mikey
application/mods+xml mods
application/moss-keys
application/moss-signature
application/mosskey-data
application/mosskey-request
application/mp21 m21 mp21
application/mp4 mp4s
application/mpeg4-generic
application/mpeg4-iod
application/mpeg4-iod-xmt
application/mrb-consumer+xml
application/mrb-publish+xml
application/msc-ivr+xml
application/msc-mixer+xml
application/msword doc dot
application/mxf mxf
application/nasdata
application/news-checkgroups
application/news-groupinfo
application/news-transmission
application/nlsm1+xml
application/nss
application/ocsp-request

```
# application/ocsp-response
application/octet-stream bin dms lrf mar so dist distz pkg bpk dump elc deploy
application/oda oda
# application/odx
application/oebps-package+xml opf
application/ogg ogx
application/omdoc+xml omdoc
application/onenote onetoc
onetoc2 onetmp onepkg
application/oxps oxps
# application/p2p-overlay+xml
# application/parityfec
application/patch-ops-error+xml xer
application/pdf pdf
# application/pdx
application/pgp-encrypted pgp
# application/pgp-keys
application/pgp-signature asc sig
application/pics-rules prf
# application/pidf+xml
# application/pidf-diff+xml
application/pkcs10 p10
# application/pkcs12
application/pkcs7-mime p7m p7c
application/pkcs7-signature p7s
application/pkcs8 p8
application/pkix-attr-cert ac
application/pkix-cert cer
application/pkix-crl crl
application/pkix-pkipath pkipath
application/pkixcmp pki
application/pls+xml pls
# application/poc-settings+xml
application/postscript ai eps ps
# application/ppsp-tracker+json
# application/problem+json
# application/problem+xml
# application/provenance+xml
# application/prs.alvestrand.titrax-sheet
application/prs.cww cww
# application/prs.hpub+zip
# application/prs.nprend
# application/prs.plucker
#
application/prs.rdf+xml-crypt
# application/prs.xsf+xml
application/pskc+xml pskcxml
# application/qsig
```

```
# application/raptorfec
# application/rdap+json
application/rdf+xml rdf
application/reginfo+xml rif
application/relax-ng-compact-syntax rnc
# application/remote-printing
# application/reputon+json
application/resource-lists+xml rl
application/resource-lists-diff+xml rld
# application/rfc+xml
# application/riscos
# application/rlmi+xml
application/rls-services+xml rs
application/rpki-ghostbusters gbr
application/rpki-manifest mft
application/rpki-roa roa
# application/rpki-updown
application/rsd+xml rsd
application/rss+xml rss
application/rtf rtf
# application/rtploopback
# application/rtx
# application/samlassertion+xml
# application/samlmetadata+xml
application/sbml+xml sbml
# application/scaip+xml
# application/scim+json
application/scvp-cv-request scq
application/scvp-cv-response scs
application/scvp-vp-request spq
application/scvp-vp-response spp
application/sdp sdp
#
application/sep+xml
# application/sep-exi
# application/session-info
# application/set-payment
application/set-payment-initiation setpay
# application/set-registration
application/set-registration-initiation setreg
# application/sgml
# application/sgml-open-catalog
application/shf+xml shf
# application/sieve
# application/simple-filter+xml
# application/simple-message-summary
# application/simplesymbolcontainer
# application/slate
```

application/smil
application/smil+xml smi smil
application/smpite336m
application/soap+fastinfoset
application/soap+xml
application/sparql-query rq
application/sparql-results+xml srx
application/spirits-event+xml
application/sql
application/srgs gram
application/srgs+xml grxml
application/sru+xml sru
application/ssdl+xml ssdl
application/ssml+xml ssml
application/tamp-apex-update
application/tamp-apex-update-confirm
application/tamp-community-update
application/tamp-community-update-confirm

application/tamp-error
application/tamp-sequence-adjust
application/tamp-sequence-adjust-confirm
application/tamp-status-query
application/tamp-status-response
application/tamp-update
application/tamp-update-confirm
application/tei+xml tei teicorpus
application/thraud+xml tfi
application/timestamp-query
application/timestamp-reply
application/timestamped-data tsd
application/ttml+xml
application/tve-trigger
application/ulpfec
application/urc-grpsheet+xml
application/urc-ressheet+xml
application/urc-targetdesc+xml
application/urc-uisocketdesc+xml
application/vcard+json
application/vcard+xml
application/vemmi
application/vividence.scriptfile
application/vnd.3gpp-prose+xml
application/vnd.3gpp-prose-pc3ch+xml
application/vnd.3gpp.access-transfer-events+xml
application/vnd.3gpp.bsf+xml
application/vnd.3gpp.mid-call+xml
application/vnd.3gpp.pic-bw-large plb

application/vnd.3gpp.pic-bw-small psb
application/vnd.3gpp.pic-bw-var pvb

application/vnd.3gpp.sms
application/vnd.3gpp.sms+xml
application/vnd.3gpp.srvcc-ext+xml
application/vnd.3gpp.srvcc-info+xml
application/vnd.3gpp.state-and-event-info+xml
application/vnd.3gpp.ussd+xml
application/vnd.3gpp2.bcmsg+xml
application/vnd.3gpp2.sms
application/vnd.3gpp2.tcap tcap
application/vnd.3lightssoftware.imagescal
application/vnd.3m.post-it-notes pwn
application/vnd.accpac.simply.aso aso
application/vnd.accpac.simply.imp imp
application/vnd.acucobol acu
application/vnd.acucorp atc acutc
application/vnd.adobe.air-application-installer-package+zip air
application/vnd.adobe.flash.movie
application/vnd.adobe.formscentral.fcdt fcdt
application/vnd.adobe.fxp fxp fxpl
application/vnd.adobe.partial-upload
application/vnd.adobe.xdp+xml xdp
application/vnd.adobe.xfdf xfdf
application/vnd.aether.imp
application/vnd.ah-barcode
application/vnd.ahead.space ahead
application/vnd.airzip.filesecure.azf azf
application/vnd.airzip.filesecure.azs azs
application/vnd.amazon.ebook azw

application/vnd.amazon.mobi8-ebook
application/vnd.americandynamics.acc acc
application/vnd.amiga.ami ami
application/vnd.amundsen.maze+xml
application/vnd.android.package-archive apk
application/vnd.anki
application/vnd.anser-web-certificate-issue-initiation cii
application/vnd.anser-web-funds-transfer-initiation fti
application/vnd.antix.game-component atx
application/vnd.apache.thrift.binary
application/vnd.apache.thrift.compact
application/vnd.apache.thrift.json
application/vnd.api+json
application/vnd.apple.installer+xml mpkg
application/vnd.apple.mpegurl m3u8
application/vnd.arastra.swi

application/vnd.aristanetworks.swi swi
application/vnd.artsquare
application/vnd.astraea-software.iota iota
application/vnd.audiograph aep
application/vnd.autopackage
application/vnd.avistar+xml
application/vnd.balsamiq.bmml+xml
application/vnd.balsamiq.bmpr
application/vnd.bekitzur-stech+json
application/vnd.biopax.rdf+xml
application/vnd.blueice.multipass mpm

application/vnd.bluetooth.ep.oob
application/vnd.bluetooth.le.oob
application/vnd.bmi bmi
application/vnd.businessobjects rep
application/vnd.cab-jscript
application/vnd.canon-cpdl
application/vnd.canon-lips
application/vnd.cendio.thinlinc.clientconf
application/vnd.century-systems.tcp_stream
application/vnd.chemdraw+xml cdxml
application/vnd.chess-pgn
application/vnd.chipnuts.karaoke-mmd mmd
application/vnd.cinderella cdy
application/vnd.cirpack.isdn-ext
application/vnd.citationstyles.style+xml
application/vnd.claymore cla
application/vnd.cloanto.rp9 rp9
application/vnd.clonk.c4group c4g c4d c4f c4p c4u
application/vnd.cluetrust.cartomobile-config c11amc
application/vnd.cluetrust.cartomobile-config-pkg c11amz
application/vnd.coffeescript
application/vnd.collection+json
application/vnd.collection.doc+json
application/vnd.collection.next+json
application/vnd.comicbook+zip

application/vnd.commerce-battelle
application/vnd.commonspace csp
application/vnd.contact.cmsg cdbcmsg
application/vnd.coreos.ignition+json
application/vnd.cosmocaller cmc
application/vnd.crick.clicker clkx
application/vnd.crick.clicker.keyboard clkk
application/vnd.crick.clicker.palette clkp
application/vnd.crick.clicker.template clkt
application/vnd.crick.clicker.wordbank clkw

application/vnd.criticaltools.wbs+xml wbs
application/vnd.ctc-posml pml
application/vnd.ctct.ws+xml
application/vnd.cups-pdf
application/vnd.cups-postscript
application/vnd.cups-ppd ppd
application/vnd.cups-raster
application/vnd.cups-raw
application/vnd.curl
application/vnd.curl.car car
application/vnd.curl.pcurl pcurl
application/vnd.cyan.dean.root+xml
application/vnd.cybank
application/vnd.dart dart
application/vnd.data-vision.rdz rdz
application/vnd.debian.binary-package
application/vnd.dece.data uvf uvvf uvd uvvd
application/vnd.dece.ttml+xml uvt uvvt
application/vnd.dece.unsigned uvx
uvvx
application/vnd.dece.zip uvz uvvz
application/vnd.denovo.fcselayout-link fe_launch
application/vnd.desmume.movie
application/vnd.dir-bi.plate-dl-nosuffix
application/vnd.dm.delegation+xml
application/vnd.dna dna
application/vnd.document+json
application/vnd.dolby.mlp mlp
application/vnd.dolby.mobile.1
application/vnd.dolby.mobile.2
application/vnd.doremir.scorecloud-binary-document
application/vnd.dpgraph dpg
application/vnd.dreamfactory dfac
application/vnd.drive+json
application/vnd.ds-keypoint kpxx
application/vnd.dtg.local
application/vnd.dtg.local.flash
application/vnd.dtg.local.html
application/vnd.dvb.ait ait
application/vnd.dvb.dvbj
application/vnd.dvb.esgcontainer
application/vnd.dvb.ipdcdftnotifaccess
application/vnd.dvb.ipdcesgaccess
application/vnd.dvb.ipdcesgaccess2
application/vnd.dvb.ipdcesgpdd
application/vnd.dvb.ipdcroaming
application/vnd.dvb.iptv.alfec-base
application/vnd.dvb.iptv.alfec-enhancement


```
#
application/vnd.dvb.notif-aggregate-root+xml
# application/vnd.dvb.notif-container+xml
# application/vnd.dvb.notif-generic+xml
# application/vnd.dvb.notif-ia-msglist+xml
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# application/vnd.dvb.notif-ia-registration-response+xml
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# application/vnd.dxr
application/vnd.dynageo geo
# application/vnd.dzr
# application/vnd.easykaraoke.cdgdownload
# application/vnd.ecdis-update
application/vnd.ecowin.chart mag
# application/vnd.ecowin.filerequest
# application/vnd.ecowin.fileupdate
# application/vnd.ecowin.series
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# application/vnd.emclient.accessrequest+xml
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# application/vnd.enphase.envoy
# application/vnd.eprints.data+xml
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# application/vnd.etsi.asic-e+zip
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# application/vnd.etsi.iptvcommand+xml
# application/vnd.etsi.iptvdiscovery+xml
# application/vnd.etsi.iptvprofile+xml
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# application/vnd.etsi.mcid+xml
# application/vnd.etsi.mheg5
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# application/vnd.etsi.timestamp-token
# application/vnd.etsi.tsl+xml
# application/vnd.etsi.tsl.der
# application/vnd.eudora.data
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application/vnd.ezpix-package ez3
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# application/vnd.fastcopy-disk-image
application/vnd.fdf fdf
application/vnd.fdsn.mseed mseed
application/vnd.fdsn.seed seed dataless
# application/vnd.ffmpeg
# application/vnd.filmit.zfc
# application/vnd.fints
# application/vnd.firemonkeys.cloudcell
application/vnd.flographit gph
application/vnd.fluxtime.clip ftc
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# application/vnd.fut-misnet
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# application/vnd.geo+json
# application/vnd.geocube+xml
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application/vnd.hp-hpgl hpgl
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kpt
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application/vnd.ms-asf
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application/vnd.ms-htmlhelp chm
application/vnd.ms-ims ims
application/vnd.ms-lrm lrm
application/vnd.ms-office.activex+xml
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application/vnd.ms-pki.seccat cat
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application/vnd.msa-disk-image
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application/vnd.muvee.style msty
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application/vnd.nitf ntf nitf
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application/vnd.noblenet-web nnw
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# application/vnd.nokia.n-gage.ac+xml
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# application/vnd.nokia.ncd
# application/vnd.nokia.pcd+wxml
# application/vnd.nokia.pcd+xml
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# application/vnd.oipf.contentaccessstreaming+xml
# application/vnd.oipf.cspg-hexbinary
# application/vnd.oipf.dae.svg+xml
# application/vnd.oipf.dae.xhtml+xml
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application/vnd.oipf.mippvcontrolmessage+xml
# application/vnd.oipf.pae.gem
# application/vnd.oipf.spdiscovery+xml
# application/vnd.oipf.spdlist+xml
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application/vnd.oma.bcast.imd+xml
application/vnd.oma.bcast.ltkm
application/vnd.oma.bcast.notification+xml
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application/vnd.oma.poc.groups+xml
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application/vnd.pg.format str
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application/vnd.pwg-xhtml-print+xml
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application/vnd.radisys.msml-audit-conf+xml
application/vnd.radisys.msml-audit-conn+xml
application/vnd.radisys.msml-audit-dialog+xml
application/vnd.radisys.msml-audit-stream+xml
application/vnd.radisys.msml-conf+xml
application/vnd.radisys.msml-dialog+xml
application/vnd.radisys.msml-dialog-base+xml
application/vnd.radisys.msml-dialog-fax-detect+xml
application/vnd.radisys.msml-dialog-fax-sendrecv+xml
application/vnd.radisys.msml-dialog-group+xml
application/vnd.radisys.msml-dialog-speech+xml
application/vnd.radisys.msml-dialog-transform+xml
application/vnd.rainstor.data
application/vnd.rapid
application/vnd.rar
application/vnd.realvnc.bed bed
application/vnd.recordare.musicxml mxl
application/vnd.recordare.musicxml+xml musicxml

```
# application/vnd.renlearn.rlprint
application/vnd.rig.cryptonote cryptonote
application/vnd.rim.cod cod
application/vnd.rn-realmedia rm
application/vnd.rn-realmedia-vbr rmvb
application/vnd.route66.link66+xml link66
#
application/vnd.rs-274x
# application/vnd.ruckus.download
# application/vnd.s3sms
application/vnd.sailingtracker.track st
# application/vnd.sbm.cid
# application/vnd.sbm.mid2
# application/vnd.scribus
# application/vnd.sealed.3df
# application/vnd.sealed.csf
# application/vnd.sealed.doc
# application/vnd.sealed.eml
# application/vnd.sealed.mht
# application/vnd.sealed.net
# application/vnd.sealed.ppt
# application/vnd.sealed.tiff
# application/vnd.sealed.xls
# application/vnd.sealedmedia.softseal.html
# application/vnd.sealedmedia.softseal.pdf
application/vnd.seemail see
application/vnd.sema sema
application/vnd.semd semd
application/vnd.semf semf
application/vnd.shana.informed.formdata ifm
application/vnd.shana.informed.formtemplate itp
application/vnd.shana.informed.interchange iif
application/vnd.shana.informed.package ipk
application/vnd.simtech-mindmapper twd
twds
# application/vnd.siren+json
application/vnd.smf mmf
# application/vnd.smart.notebook
application/vnd.smart.teacher teacher
# application/vnd.software602.filler.form+xml
# application/vnd.software602.filler.form+xml-zip
application/vnd.solent.sdkm+xml sdkm sdkd
application/vnd.spotfire.dxp dxp
application/vnd.spotfire.sfs sfs
# application/vnd.sss-cod
# application/vnd.sss-dtf
# application/vnd.sss-ntf
application/vnd.stardivision.calc sdc
```

application/vnd.stardivision.draw sda
application/vnd.stardivision.impress sdd
application/vnd.stardivision.math smf
application/vnd.stardivision.writer sdw vor
application/vnd.stardivision.writer-global sgl
application/vnd.stepmania.package smzip
application/vnd.stepmania.stepchart sm
application/vnd.street-stream
application/vnd.sun.wadl+xml
application/vnd.sun.xml.calc sxc
application/vnd.sun.xml.calc.template stc
application/vnd.sun.xml.draw sxd
application/vnd.sun.xml.draw.template std
application/vnd.sun.xml.impress sxi
application/vnd.sun.xml.impress.template sti
application/vnd.sun.xml.math sxm
application/vnd.sun.xml.writer sxw
application/vnd.sun.xml.writer.global sxg
application/vnd.sun.xml.writer.template stw
application/vnd.sus-calendar sus
susp
application/vnd.svd svd
application/vnd.swiftview-ics
application/vnd.symbian.install sis six
application/vnd.syncml+xml xsm
application/vnd.syncml.dm+wbxml bdm
application/vnd.syncml.dm+xml xdm
application/vnd.syncml.dm.notification
application/vnd.syncml.dmddf+wbxml
application/vnd.syncml.dmddf+xml
application/vnd.syncml.dmtnds+wbxml
application/vnd.syncml.dmtnds+xml
application/vnd.syncml.ds.notification
application/vnd.tao.intent-module-archive tao
application/vnd.tcpdump.pcap pcap cap dmp
application/vnd.tmd.mediaflex.api+xml
application/vnd.tml
application/vnd.tmobile-livetv tmo
application/vnd.trid.tpt tpt
application/vnd.triscape.mxs mxs
application/vnd.trueapp tra

application/vnd.truedoc
application/vnd.ubisoft.webplayer
application/vnd.ufdl ufd ufdl
application/vnd.uiq.theme utz
application/vnd.umajin umj
application/vnd.unity unityweb

application/vnd.uoml+xml uoml
application/vnd.uplanet.alert
application/vnd.uplanet.alert-wbxml
application/vnd.uplanet.bearer-choice
application/vnd.uplanet.bearer-choice-wbxml
application/vnd.uplanet.cacheop
application/vnd.uplanet.cacheop-wbxml
application/vnd.uplanet.channel
application/vnd.uplanet.channel-wbxml
application/vnd.uplanet.list
application/vnd.uplanet.list-wbxml
application/vnd.uplanet.listcmd
application/vnd.uplanet.listcmd-wbxml
application/vnd.uplanet.signal
application/vnd.uri-map
application/vnd.valve.source.material
application/vnd.vcx vcx
application/vnd.vd-study
application/vnd.vectorworks
application/vnd.vel+json
application/vnd.verimatrix.vcas
application/vnd.vidsoft.vidconference
application/vnd.visio vsd
vst vss vsw
application/vnd.visionary vis
application/vnd.vividence.scriptfile
application/vnd.vsf vsf
application/vnd.wap.sic
application/vnd.wap.slc
application/vnd.wap.wbxml wbxml
application/vnd.wap.wmlc wmlc
application/vnd.wap.wmlscriptc wmlsc
application/vnd.webturbo wtb
application/vnd.wfa.p2p
application/vnd.wfa.wsc
application/vnd.windows.devicepairing
application/vnd.wmc
application/vnd.wmf.bootstrap
application/vnd.wolfram.mathematica
application/vnd.wolfram.mathematica.package
application/vnd.wolfram.player nbp
application/vnd.wordperfect wpd
application/vnd.wqd wqd
application/vnd.wrq-hp3000-labelled
application/vnd.wt.stf stf
application/vnd.wv.csp+wbxml
application/vnd.wv.csp+xml
application/vnd.wv.ssp+xml

```
# application/vnd.xacml+json
application/vnd.xara xar
application/vnd.xfdl xfdl
# application/vnd.xfdl.webform
# application/vnd.xmi+xml
# application/vnd.xmpie.cpkg
#
  application/vnd.xmpie.dpkg
# application/vnd.xmpie.plan
# application/vnd.xmpie.ppkg
# application/vnd.xmpie.xlim
application/vnd.yamaha.hv-dic hvd
application/vnd.yamaha.hv-script hvs
application/vnd.yamaha.hv-voice hvp
application/vnd.yamaha.openscoreformat osf
application/vnd.yamaha.openscoreformat.osfpvg+xml osfpvg
# application/vnd.yamaha.remote-setup
application/vnd.yamaha.smaf-audio saf
application/vnd.yamaha.smaf-phrase spf
# application/vnd.yamaha.through-ngn
# application/vnd.yamaha.tunnel-udpencap
# application/vnd.yaoweme
application/vnd.yellowriver-custom-menu cmp
application/vnd.zul zir zirz
application/vnd.zzazz.deck+xml zaz
application/voicexml+xml vxml
# application/vq-rtcpvr
# application/watcherinfo+xml
# application/whoispp-query
# application/whoispp-response
application/widget wgt
application/winhlp hlp
# application/wita
# application/wordperfect5.1
application/wsdl+xml wsdl
application/wspolicy+xml wspolicy
application/x-7z-compressed 7z
application/x-abiword abw
application/x-ace-compressed ace
#
  application/x-amf
application/x-apple-diskimage dmg
application/x-authorware-bin aab x32 u32 vox
application/x-authorware-map aam
application/x-authorware-seg aas
application/x-bcpio bcpio
application/x-bittorrent torrent
application/x-blorb blb blorb
```


application/x-bzip bz
application/x-bzip2 bz2 boz
application/x-cbr cbr cba cbt cbz cb7
application/x-cdlink vcd
application/x-cfs-compressed cfs
application/x-chat chat
application/x-chess-pgn pgn
application/x-compress
application/x-conference nsc
application/x-cpio cpio
application/x-csh csh
application/x-debian-package deb udeb
application/x-dgc-compressed dgc
application/x-director dir dcr dxr cst cct cxt w3d fgd swa
application/x-doom wad
application/x-dtbncx+xml ncx
application/x-dtbook+xml dtb
application/x-dtbresource+xml res
application/x-dvi dvi
application/x-envoy evy
application/x-eva eva
application/x-font-bdf bdf

application/x-font-dos
application/x-font-framemaker
application/x-font-ghostscript gsf
application/x-font-libgrx
application/x-font-linux-psf psf
application/x-font-pcf pcf
application/x-font-snf snf
application/x-font-speedo
application/x-font-sunos-news
application/x-font-type1 pfa pfb pfm afm
application/x-font-vfont
application/x-freearc arc
application/x-futuresplash spl
application/x-gca-compressed gca
application/x-glulx ulx
application/x-gnumeric gnumeric
application/x-gramps-xml gramps
application/x-gtar gtar
application/x-gzip
application/x-hdf hdf
application/x-install-instructions install
application/x-iso9660-image iso
application/x-java-jnlp-file jnlp
application/x-latex latex
application/x-lzh-compressed lzh lha

application/x-mie mie
application/x-mobipocket-ebook prc mobi
application/x-ms-application application
application/x-ms-shortcut lnk
application/x-ms-wmd wmd
application/x-ms-wmz wmz
application/x-ms-xbap xbap
application/x-msaccess mdb
application/x-msbinder obd
application/x-mscardfile crd
application/x-msclip clp
application/x-msdownload exe
dll com bat msi
application/x-msmediaview mvb m13 m14
application/x-msmetafile wmf wmz emf emz
application/x-msmoney mny
application/x-mspublisher pub
application/x-msschedule scd
application/x-msterminal trm
application/x-mswrite wri
application/x-netcdf nc cdf
application/x-nzb nzb
application/x-pkcs12 p12 pfx
application/x-pkcs7-certificates p7b spc
application/x-pkcs7-certreqresp p7r
application/x-rar-compressed rar
application/x-research-info-systems ris
application/x-sh sh
application/x-shar shar
application/x-shockwave-flash swf
application/x-silverlight-app xap
application/x-sql sql
application/x-stuffit sit
application/x-stuffitx sitx
application/x-subrip srt
application/x-sv4cpio sv4cpio
application/x-sv4crc sv4crc
application/x-t3vm-image t3
application/x-tads gam
application/x-tar tar
application/x-tcl tcl
application/x-tex tex
application/x-tex-tfm tfm
application/x-texinfo texinfo
texi
application/x-tgif obj
application/x-ustar ustar
application/x-wais-source src

```
# application/x-www-form-urlencoded
application/x-x509-ca-cert der crt
application/x-xfig fig
application/x-xliff+xml xlf
application/x-xpinstall xpi
application/x-xz xz
application/x-zmachine z1 z2 z3 z4 z5 z6 z7 z8
# application/x400-bp
# application/xacml+xml
application/xaml+xml xaml
# application/xcap-att+xml
# application/xcap-caps+xml
application/xcap-diff+xml xdf
# application/xcap-el+xml
# application/xcap-error+xml
# application/xcap-ns+xml
# application/xcon-conference-info+xml
# application/xcon-conference-info-diff+xml
application/xenc+xml xenc
application/xhtml+xml xhtml xht
# application/xhtml-voice+xml
application/xml xml xsl
application/xml-dtd dtd
#
application/xml-external-parsed-entity
# application/xml-patch+xml
# application/xmpp+xml
application/xop+xml xop
application/xproc+xml xpl
application/xslt+xml xslt
application/xspf+xml xspf
application/xv+xml mxml xhvm xvml xvm
application/yang yang
application/yin+xml yin
application/zip zip
# application/zlib
# audio/1d-interleaved-parityfec
# audio/32kadpcm
# audio/3gpp
# audio/3gpp2
# audio/ac3
audio/adpcm adp
# audio/amr
# audio/amr-wb
# audio/amr-wb+
# audio/aptx
# audio/asc
# audio/atrac-advanced-lossless
```

audio/atrac-x
audio/atrac3
audio/basic au snd
audio/bv16
audio/bv32
audio/clearmode
audio/cn
audio/dat12
audio/dls
audio/dsr-es201108
audio/dsr-es202050
audio/dsr-es202211
audio/dsr-es202212
audio/dv
audio/dvi4
audio/eac3
audio/encaprtsp
audio/evrc
audio/evrc-qcp
audio/evrc0
audio/evrc1
audio/evrcb
audio/evrcb0
audio/evrcb1
audio/evrcnw
audio/evrcnw0
audio/evrcnw1
audio/evrcwb
audio/evrcwb0

audio/evrcwb1
audio/evs
audio/example
audio/fwdred
audio/g711-0
audio/g719
audio/g722
audio/g7221
audio/g723
audio/g726-16
audio/g726-24
audio/g726-32
audio/g726-40
audio/g728
audio/g729
audio/g7291
audio/g729d
audio/g729e

audio/gsm
audio/gsm-efr
audio/gsm-hr-08
audio/ilbc
audio/ip-mr_v2.5
audio/isac
audio/116
audio/120
audio/124
audio/18
audio/lpc
audio/midi mid midi kar rmi
audio/mobile-xmf
audio/mp4 m4a mp4a
audio/mp4a-latm
audio/mpa
audio/mpa-robust
audio/mpeg mpga mp2 mp2a mp3 m2a m3a
audio/mpeg4-generic
audio/musepack
audio/ogg oga ogg spx
audio/opus
audio/parityfec
audio/pcma
audio/pcma-wb
audio/pcmu
audio/pcmu-wb
audio/prs.sid
audio/qcelp
audio/raptorfec
audio/red
audio/rtp-enc-aescm128
audio/rtp-midi
audio/rtploopback
audio/rtx
audio/s3m s3m
audio/silk sil
audio/smv
audio/smv-qcp
audio/smv0
audio/sp-midi
audio/speex
audio/t140c
audio/t38

audio/telephone-event
audio/tone
audio/uemclip

```
# audio/ulpfec
# audio/vdvi
# audio/vmr-wb
# audio/vnd.3gpp.iufp
# audio/vnd.4sb
# audio/vnd.audiokoz
# audio/vnd.celp
# audio/vnd.cisco.nse
# audio/vnd.cmles.radio-events
# audio/vnd.cns.anp1
# audio/vnd.cns.infl
audio/vnd.dece.audio uva uvva
audio/vnd.digital-winds eol
# audio/vnd.dlna.adts
# audio/vnd.dolby.heaac.1
# audio/vnd.dolby.heaac.2
# audio/vnd.dolby.mlp
# audio/vnd.dolby.mps
# audio/vnd.dolby.pl2
# audio/vnd.dolby.pl2x
# audio/vnd.dolby.pl2z
# audio/vnd.dolby.pulse.1
audio/vnd.dra dra
audio/vnd.dts dts
audio/vnd.dts.hd dtshd
# audio/vnd.dvb.file
# audio/vnd.everad.plj
# audio/vnd.hns.audio
audio/vnd.lucent.voice lvp
audio/vnd.ms-playready.media.pya pya
# audio/vnd.nokia.mobile-xmf
# audio/vnd.nortel.vbk
audio/vnd.nuera.ecelp4800 ecelp4800
audio/vnd.nuera.ecelp7470 ecelp7470
audio/vnd.nuera.ecelp9600 ecelp9600
# audio/vnd.octel.sbc
# audio/vnd.qcelp
# audio/vnd.rhetorex.32kadpcm
audio/vnd.rip rip
#
audio/vnd.sealedmedia.softseal.mpeg
# audio/vnd.vmx.cvsd
# audio/vorbis
# audio/vorbis-config
audio/webm weba
audio/x-aac aac
audio/x-aiff aif aiff aifc
audio/x-caf caf
```

audio/x-flac flac
audio/x-matroska mka
audio/x-mpegurl m3u
audio/x-ms-wax wax
audio/x-ms-wma wma
audio/x-pn-realaudio ram ra
audio/x-pn-realaudio-plugin rmp
audio/x-tta
audio/x-wav wav
audio/xm xm
chemical/x-cdx cdx
chemical/x-cif cif
chemical/x-cmdf cmdf
chemical/x-cml cml
chemical/x-csml csml
chemical/x-pdb
chemical/x-xyz xyz
font/collection ttc
font/otf otf
font/sfnt
font/ttf ttf
font/woff woff
font/woff2 woff2
image/bmp bmp
image/cgm cgm
image/dicom-rle
image/emf
image/example
image/fits
image/g3fax g3
image/gif gif
image/ief ief
image/jls
image/jp2
image/jpeg jpeg jpg jpe
image/jpm
image/jpx
image/ktx ktx
image/naplps
image/png png
image/prs.btif btif
image/prs.pti

image/pwg-raster
image/sgi sgi
image/svg+xml svg svgz
image/t38
image/tiff tiff tif

```
# image/tiff-fx
image/vnd.adobe.photoshop psd
# image/vnd.airzip.accelerator.azv
# image/vnd.cns.inf2
image/vnd.dece.graphic uvi uvvi uvg uvvg
image/vnd.djvu djvu djv
image/vnd.dvb.subtitle sub
image/vnd.dwg dwg
image/vnd.dxf dxf
image/vnd.fastbidsheet fbs
image/vnd.fpx fpx
image/vnd.fst fst
image/vnd.fujixerox.edmics-mmr mmr
image/vnd.fujixerox.edmics-rlc rlc
# image/vnd.globalgraphics.pgb
# image/vnd.microsoft.icon
# image/vnd.mix
# image/vnd.mozilla.apng
image/vnd.ms-modi mdi
image/vnd.ms-photo wdp
image/vnd.net-fpx npx
# image/vnd.radiance
# image/vnd.sealed.png
# image/vnd.sealedmedia.softseal.gif
# image/vnd.sealedmedia.softseal.jpg
# image/vnd.svf
# image/vnd.tencent.tap
# image/vnd.valve.source.texture
image/vnd.wap.wbmp wbmp
image/vnd.xiff xif
# image/vnd.zbrush.pcx
image/webp webp
# image/wmf
image/x-3ds 3ds
image/x-cmu-raster ras
image/x-cmx cmx
image/x-freehand fh
fhc fh4 fh5 fh7
image/x-icon ico
image/x-mrsid-image sid
image/x-pcx pcx
image/x-pict pic pct
image/x-portable-anymap pnm
image/x-portable-bitmap pbm
image/x-portable-graymap pgm
image/x-portable-pixmap ppm
image/x-rgb rgb
image/x-tga tga
```


image/x-xbitmap xbm
image/x-xpixmap xpm
image/x-xwindowdump xwd
message/cpim
message/delivery-status
message/disposition-notification
message/example
message/external-body
message/feedback-report
message/global
message/global-delivery-status
message/global-disposition-notification
message/global-headers
message/http
message/imdn+xml
message/news
message/partial
message/rfc822 eml mime
message/s-http
message/sip
message/sipfrag
message/tracking-status
message/vnd.si.simp
message/vnd.wfa.wsc
model/example
model/gltf+json
model/iges igs iges
model/mesh msh mesh silo
model/vnd.collada+xml dae
model/vnd.dwf dwf

model/vnd.flatland.3dml
model/vnd.gdl gdl
model/vnd.gs-gdl
model/vnd.gs.gdl
model/vnd.gtw gtw
model/vnd.moml+xml
model/vnd.mts mts
model/vnd.opengex
model/vnd.parasolid.transmit.binary
model/vnd.parasolid.transmit.text
model/vnd.rosette.annotated-data-model
model/vnd.valve.source.compiled-map
model/vnd.vtu vtu
model/vrml wrl vrml
model/x3d+binary x3db x3dbz
model/x3d+fastinfoset
model/x3d+vrml x3dv x3dvz

model/x3d+xml x3d x3dz
model/x3d-vrml
multipart/alternative
multipart/appledouble
multipart/byteranges
multipart/digest
multipart/encrypted
multipart/example
multipart/form-data
multipart/header-set
multipart/mixed
multipart/parallel
multipart/related
multipart/report
multipart/signed
multipart/voice-message
multipart/x-mixed-replace
text/1d-interleaved-parityfec
text/cache-manifest appcache
text/calendar ics ifb
text/css css
text/csv csv
text/csv-schema

text/directory
text/dns
text/ecmascript
text/encaprtf
text/enriched
text/example
text/fwdred
text/grammar-ref-list
text/html html htm
text/javascript
text/jcr-cnd
text/markdown
text/mizar
text/n3 n3
text/parameters
text/parityfec
text/plain txt text conf def list log in
text/provenance-notation
text/prs.fallenstein.rst
text/prs.lines.tag dsc
text/prs.prop.logic
text/raptorfec
text/red
text/rfc822-headers

text/richtext rtx
text/rtf
text/rtp-enc-aescm128
text/rtploopback
text/rtx
text/sgml sgml sgm
text/t140
text/tab-separated-values tsv
text/troff t tr roff man me ms
text/turtle ttl
text/ulpfec
text/uri-list uri uris urls
text/vcard vcard
text/vnd.a
text/vnd.abc
text/vnd.curl curl
text/vnd.curl.dcurl dcurl
text/vnd.curl.mcurl mcurl
text/vnd.curl.scurl scurl
text/vnd.debian.copyright
text/vnd.dmclientscript
text/vnd.dvb.subtitle sub
text/vnd.esmertec.theme-descriptor
text/vnd.fly fly
text/vnd.fmi.flexstor flx
text/vnd.graphviz gv
text/vnd.in3d.3dml 3dml
text/vnd.in3d.spot spot

text/vnd.ipc.newsml
text/vnd.ipc.nitf
text/vnd.latex-z
text/vnd.motorola.reflex
text/vnd.ms-mediapackage
text/vnd.net2phone.commcenter.command
text/vnd.radisys.msml-basic-layout
text/vnd.si.uricatalogue
text/vnd.sun.j2me.app-descriptor jad
text/vnd.trolltech.linguist
text/vnd.wap.si
text/vnd.wap.sl
text/vnd.wap.wml wml
text/vnd.wap.wmlscript wmls
text/x-asm s asm
text/x-c c cc cxx cpp h hh dic
text/x-fortran f for f77 f90
text/x-java-source java
text/x-nfo nfo

text/x-opml opml
text/x-pascal p pas
text/x-setext etx
text/x-sfv sfv
text/x-uuencode uu
text/x-vcalendar vcs
text/x-vcard vcf
text/xml
text/xml-external-parsed-entity
video/1d-interleaved-parityfec
video/3gpp 3gp
video/3gpp-tt
video/3gpp2 3g2
video/bmpeg
video/bt656
video/celb
video/dv
video/encaprtsp
video/example
video/h261 h261
video/h263 h263

video/h263-1998
video/h263-2000
video/h264 h264
video/h264-rcdo
video/h264-svc
video/h265
video/iso.segment
video/jpeg jpgv
video/jpeg2000
video/jpm jpm jpgm
video/mj2 mj2 mjp2
video/mp1s
video/mp2p
video/mp2t
video/mp4 mp4 mp4v mpg4
video/mp4v-es
video/mpeg mpeg mpg mpe m1v m2v
video/mpeg4-generic
video/mpv
video/nv
video/ogg ogv
video/parityfec
video/pointer
video/quicktime qt mov
video/raptorfec
video/raw

```
# video/rtp-enc-aescm128
# video/rtploopback
# video/rtx
# video/smppte292m
# video/ulpfec
# video/vc1
# video/vnd.cctv
video/vnd.dece.hd   uvh uvvh
video/vnd.dece.mobile  uvm uvvm
# video/vnd.dece.mp4
video/vnd.dece.pd   uvp uvvp
video/vnd.dece.sd   uvs uvvs
video/vnd.dece.video  uvv uvvv
# video/vnd.directv.mpeg
# video/vnd.directv.mpeg-tts
# video/vnd.dlna.mpeg-tts
video/vnd.dvb.file   dvb
video/vnd.fvt   fvt
# video/vnd.hns.video
# video/vnd.iptvforum.1dparityfec-1010
#
  video/vnd.iptvforum.1dparityfec-2005
# video/vnd.iptvforum.2dparityfec-1010
# video/vnd.iptvforum.2dparityfec-2005
# video/vnd.iptvforum.ttsavc
# video/vnd.iptvforum.ttsmpeg2
# video/vnd.motorola.video
# video/vnd.motorola.videop
video/vnd.mpegurl   mxu m4u
video/vnd.ms-playready.media.pyv pyv
# video/vnd.nokia.interleaved-multimedia
# video/vnd.nokia.videovoip
# video/vnd.objectvideo
# video/vnd.radgamettools.bink
# video/vnd.radgamettools.smacker
# video/vnd.sealed.mpeg1
# video/vnd.sealed.mpeg4
# video/vnd.sealed.swf
# video/vnd.sealedmedia.softseal.mov
video/vnd.uvvu.mp4   uvu uvvu
video/vnd.vivo   viv
# video/vp8
video/webm   webm
video/x-f4v   f4v
video/x-fli   fli
video/x-flv   flv
video/x-m4v   m4v
video/x-matroska  mkv mk3d mks
```

video/x-mng mng
video/x-ms-asf asf asx
video/x-ms-vob vob
video/x-ms-wm wm
video/x-ms-wmv wmv
video/x-ms-wmx wmx
video/x-ms-wvx wvx
video/x-msvideo avi
video/x-sgi-movie movie
video/x-smv smv
x-conference/x-cooltalk ice

Found

in path(s):

* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/META-INF/http/mime.types

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Found in path(s):

* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/META-INF/native-image/io.micronaut.http/micronaut-http/native-image.properties

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* /opt/cola/permits/1701043699_1685472631.4170268/0/micronaut-http-3-8-8-sources-jar/io/micronaut/http/uri/QueryStringDecoder.java

1.467 micronaut-json-core 3.8.8

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```
* /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/codec/JsonStreamMediaTypeCodec.java
* /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/codec/JsonMediaTypeCodec.java
* /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/bind/JsonBeanPropertyBinder.java
*
/opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/convert/JsonNodeConvertibleValues.java
* /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/codec/MapperMediaTypeCodec.java
* /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/JsonObjectSerializer.java
* /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-
jar/io/micronaut/json/bind/package-info.java
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- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/bind/JsonBeanPropertyBinderExceptionHandler.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/JsonFeatures.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonArray.java
- *
- /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonBoolean.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/JsonMapper.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonScalar.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/convert/JsonConverterRegistrar.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonContainer.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonString.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonNode.java
- *
- /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/JsonStreamConfig.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonNumber.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/JsonConfiguration.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonNull.java
- * /opt/cola/permits/1701043805_1685472414.5554533/0/micronaut-json-core-3-8-8-sources-jar/io/micronaut/json/tree/JsonObject.java

1.468 micronaut-http-client-core 3.8.8

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```
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/bind/ClientRequestUriContext.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/StreamingHttpClient.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/HttpClientConfiguration.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/StreamingHttpClientRegistry.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/DefaultLoadBalancerResolver.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/interceptor/configuration/package-info.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/DefaultHttpClientConfiguration.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/loadbalance/ServiceInstanceListLoadBalancerFactory.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/loadbalance/package-info.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/multipart/Part.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/multipart/StringPart.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/filter/DefaultHttpClientFilterResolver.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/LoadBalancerResolver.java
```

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/ProxyHttpClient.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/filters/ClientServerContextFilter.java

*

/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/multipart/MultipartDataFactory.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/HttpClientErrorDecoder.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/annotation/package-info.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/interceptor/configuration/NamedClientVersioningConfiguration.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/LoadBalancer.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/ServiceHttpClientConfiguration.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/EmptyResponseException.java

*

/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/filter/ClientFilterResolutionContext.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/filters/package-info.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/multipart/package-info.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/loadbalance/DiscoveryClientRoundRobinLoadBalancer.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/HttpClientRegistry.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/sse/SseClient.java

*

/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/multipart/MultipartBody.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/bind/TypedClientArgumentRequestBinder.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/HttpClient.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/bind/ClientArgumentRequestBinder.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/annotation/Client.java

* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/HttpClientResponseException.java

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/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/filters/ClientServerRequestTracingPublisher.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/ReactiveClientResultTransformer.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/bind/AnnotatedClientRequestBinder.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/NoHostException.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/interceptor/HttpClientIntroductionAdvice.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/interceptor/configuration/DefaultClientVersioningConfiguration.java
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/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/loadbalance/LoadBalancerConverters.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/loadbalance/DiscoveryClientLoadBalancerFactory.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/HttpClientException.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/loadbalance/AbstractRoundRobinLoadBalancer.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/bind/DefaultHttpClientBinderRegistry.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/package-info.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/interceptor/package-info.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/sse/SseClientRegistry.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/ProxyHttpClientRegistry.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/package-info.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/multipart/FilePart.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/ContentLengthExceededException.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/exceptions/ReadTimeoutException.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/loadbalance/ServiceInstanceListRoundRobinLoadBalancer.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-jar/io/micronaut/http/client/multipart/InputStreamPart.java
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* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-

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jar/io/micronaut/http/client/ServiceHttpClientFactory.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/loadbalance/FixedLoadBalancer.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/BlockingHttpClient.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/bind/HttpClientBinderRegistry.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/multipart/BytePart.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/ServiceHttpClientCondition.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/multipart/AbstractFilePart.java
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jar/io/micronaut/http/client/bind/binders/QueryValueClientArgumentRequestBinder.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/bind/binders/HeaderClientRequestBinder.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/StreamingHttpClientFactoryResolver.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/bind/binders/VersionClientRequestBinder.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/sse/SseClientFactory.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/sse/package-info.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/bind/ClientRequestBinder.java
```

```
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/sse/SseClientFactoryResolver.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/ProxyHttpClientFactory.java
*
/opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/ProxyHttpClientFactoryResolver.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/StreamingHttpClientFactory.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/HttpClientFactory.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/HttpClientFactoryResolver.java
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/bind/binders/AttributeClientRequestBinder.java
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```

Found in path(s):

```
* /opt/cola/permits/1701043668_1685472858.5070913/0/micronaut-http-client-core-3-8-8-sources-
jar/io/micronaut/http/client/ProxyRequestOptions.java
```

1.469 micronaut-router 3.8.8

1.469.1 Available under license :

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* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/resource/StaticResourceResolverFactory.java

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* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/version/RouteVersionFilter.java

* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/Route.java

* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/exceptions/UnsatisfiedPartRouteException.java

*/
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/version/DefaultVersionProvider.java

* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/qualifier/ConsumesMediaTypeQualifier.java

* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/version/resolution/VersionResolver.java

* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/naming/package-info.java

* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/RouteMatchUtils.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/version/resolution/HeaderVersionResolverConfiguration.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/MethodBasedRouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/ErrorMessageRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/GroovyRouteBuilder.groovy
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/MethodBasedRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/RouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/DefaultUriRouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/UriRouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/exceptions/DuplicateRouteException.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/exceptions/RoutingException.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/resource/package-info.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/BasicObjectRouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/DefaultFilterRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/DefaultRouter.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/FilterRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/naming/HyphenatedUriNamingStrategy.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/naming/ConfigurableUriNamingStrategy.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/qualifier/ProducesMediaTypeQualifier.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/BeanDefinitionFilterRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/Router.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-jar/io/micronaut/web/router/exceptions/UnsatisfiedRouteException.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-

jar/io/micronaut/web/router/AnnotatedFilterRouteBuilder.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/UnsatisfiedQueryValueRouteException.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/UnresolvedArgument.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/AbstractRouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/UnsatisfiedBodyRouteException.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/qualifier/package-info.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/resolution/HeaderVersionResolver.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/ResourceRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/AnnotatedMethodRouteBuilder.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/VersionRouteMatchFilter.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/RouteInfo.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/filter/RouteMatchFilter.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/resolution/ParameterVersionResolverConfiguration.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/resource/StaticResourceResolver.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/VersionAwareRouterListener.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/UnsatisfiedHeaderRouteException.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/resource/StaticResourceConfiguration.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/NullArgument.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/DefaultRouteBuilder.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/resolution/package-info.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/StatusRouteMatch.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/package-info.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/RoutesVersioningConfiguration.java


```
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/UriRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/StatusRoute.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/UnsatisfiedPathVariableRouteException.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/filter/FilteredRouter.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/UnsatisfiedRequestAttributeRouteException.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/ConfigurationDefaultVersionProvider.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/UnsatisfiedCookieValueRouteException.java
*
/opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/resolution/ParameterVersionResolver.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/RouteBuilder.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/package-info.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/version/resolution/RequestVersionResolver.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/exceptions/package-info.java
* /opt/cola/permits/1701043876_1685472661.0120518/0/micronaut-router-3-8-8-sources-
jar/io/micronaut/web/router/ErrorResponseMatch.java
```

1.470 antlr-runtime 4.10

1.470.1 Available under license :

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Manifest-Version: 1.0
Created-By: Apache Maven Bundle Plugin
Build-Jdk-Spec: 11
Implementation-Title: ANTLR 4 Runtime
Implementation-Version: 4.10
Implementation-Vendor: ANTLR
Automatic-Module-Name: org.antlr.antlr4.runtime
Bnd-LastModified: 1649697827331
Build-Jdk: 11.0.13
Built-By: parrt
Bundle-Description: The ANTLR 4 Runtime
Bundle-DocURL: <http://www.antlr.org>
Bundle-License: <http://www.antlr.org/license.html>

Bundle-ManifestVersion: 2
Bundle-Name: ANTLR 4 Runtime
Bundle-SymbolicName: org.antlr.antlr4-runtime
Bundle-Vendor: ANTLR
Bundle-Version: 4.10.0
Export-Package: org.antlr.v4.runtime;uses:="org.antlr.v4.runtime.atn,org.antlr.v4.runtime.dfa,org.antlr.v4.runtime.misc,org.antlr.v4.runtime.tree,org.antlr.v4.runtime.tree.pattern";version="4.10.0",org.antlr.v4.runtime.misc;uses:="org.antlr.v4.runtime";version="4.10.0",org.antlr.v4.runtime.tree;uses:="org.antlr.v4.runtime,org.antlr.v4.runtime.misc";version="4.10.0",org.antlr.v4.runtime.tree.xpath;uses:="org.antlr.v4.runtime,org.antlr.v4.runtime.atn,org.antlr.v4.runtime.tree";version="4.10.0",org.antlr.v4.runtime.tree.pattern;uses:="org.antlr.v4.runtime,org.antlr.v4.runtime.misc,org.antlr.v4.runtime.tree";version="4.10.0",org.antlr.v4.runtime.dfa;uses:="org.antlr.v4.runtime,org.antlr.v4.runtime.atn";version="4.10.0",org.antlr.v4.runtime.atn;uses:="org.antlr.v4.runtime,org.antlr.v4.runtime.dfa,org.antlr.v4.runtime.misc";version="4.10.0"
Implementation-URL: <http://www.antlr.org/runtime/antlr4-runtime>
Implementation-Vendor-Id: org.antlr
Import-Package: org.antlr.v4.gui,org.antlr.v4.runtime,org.antlr.v4.runtime.atn,org.antlr.v4.runtime.dfa,org.antlr.v4.runtime.misc,org.antlr.v4.runtime.tree,org.antlr.v4.runtime.tree.pattern,org.antlr.v4.runtime.tree.xpath
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-5.1.1.202006162103

Found in path(s):

* /opt/cola/permits/1701043715_1685472510.8335857/0/antlr4-runtime-4-10-3-jar/META-INF/MANIFEST.MF

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Found in path(s):

* /opt/cola/permits/1701043715_1685472510.8335857/0/antlr4-runtime-4-10-3-jar/META-INF/maven/org.antlr/antlr4-runtime/pom.xml

1.471 micronaut-inject 3.8.8

1.471.1 Available under license :

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* /opt/cola/permits/1701043884_1685472419.2782958/0/micronaut-inject-3-8-8-jar/META-INF/native-image/io.micronaut/micronaut-inject/native-image.properties

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Found in path(s):

* /opt/cola/permits/1701043884_1685472419.2782958/0/micronaut-inject-3-8-8-jar/META-INF/maven/io.micronaut/micronaut-inject/pom.xml

1.472 micronaut-aop 3.8.8

1.472.1 Available under license :

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* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io.micronaut/aop/InterceptorBindingDefinitions.java

* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io.micronaut/aop/chain/AbstractInterceptorChain.java

* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io.micronaut/aop/ConstructorInterceptor.java

*

/opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io.micronaut/aop/kotlin/KotlinInterceptedMethod.java

* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io.micronaut/aop/internal/InterceptorRegistryBean.java

* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/internal/InterceptorBeanMapper.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/AroundConstruct.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/InterceptorKind.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/chain/DefaultInterceptorRegistry.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/InterceptorRegistry.java
*

/opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/InterceptorBean.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/chain/ConstructorInterceptorChain.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/ConstructorInvocationContext.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/InterceptorBinding.java

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* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/exceptions/UnimplementedAdviceException.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/Intercepted.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/chain/package-info.java

*

/opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-jar/io/micronaut/aop/MethodInterceptor.java

* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-

```

jar/io/micronaut/aop/util/KotlinInterceptedMethodHelper.kt
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/internal/intercepted/KotlinInterceptedMethod.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/Introduced.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/Around.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/Adapter.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/util/CompletableFutureContinuation.kt
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/InterceptedMethod.java
*
/opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/Interceptor.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/Introduction.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/writer/AopProxyWriter.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/exceptions/package-info.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/util/DelegatingContextContinuation.kt
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/internal/intercepted/SynchronousInterceptedMethod.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/HotSwappableInterceptedProxy.java
*
/opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/InterceptedProxy.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/chain/MethodInterceptorChain.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/internal/intercepted/InterceptedMethodUtil.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/writer/package-info.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/chain/AdapterIntroduction.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/chain/InterceptorChain.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/internal/intercepted/PublisherInterceptedMethod.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/package-info.java
*
/opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/internal/intercepted/CompletionStageInterceptedMethod.java

```

```
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/InterceptPhase.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/MethodInvocationContext.java
* /opt/cola/permits/1701043636_1685472619.6557014/0/micronaut-aop-3-8-8-sources-
jar/io/micronaut/aop/InvocationContext.java
```

1.473 micronaut-jackson-core 3.8.8

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```
* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-
jar/io/micronaut/jackson/core/env/CloudFoundryVcapApplicationPropertySourceLoader.java
* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-
jar/io/micronaut/jackson/core/env/package-info.java
*
/opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-
jar/io/micronaut/jackson/core/parser/JacksonCoreProcessor.java
* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-
jar/io/micronaut/jackson/core/env/EnvJsonPropertySourceLoader.java
* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-
jar/io/micronaut/jackson/core/env/JsonPropertySourceLoader.java
* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-
jar/io/micronaut/jackson/core/env/CloudFoundryVcapServicesPropertySourceLoader.java
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* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-jar/META-INF/native-image/io.micronaut/micronaut-jackson-core/native-image.properties
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* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-jar/io/micronaut/jackson/core/tree/JsonNodeTreeCodec.java

* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-jar/io/micronaut/jackson/core/tree/JsonStreamTransfer.java

* /opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-jar/io/micronaut/jackson/core/tree/TreeGenerator.java

*

/opt/cola/permits/1701043759_1685472447.735827/0/micronaut-jackson-core-3-8-8-sources-jar/io/micronaut/jackson/core/tree/JsonNodeTraversingParser.java

1.474 micronaut-management 3.8.8

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Found in path(s):

* /opt/cola/permits/1701043892_1685472602.1125991/0/micronaut-management-3-8-8-jar/META-INF/maven/io.micronaut/micronaut-management/pom.xml

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* /opt/cola/permits/1701043892_1685472602.1125991/0/micronaut-management-3-8-8-jar/META-INF/native-image/io.micronaut.management/micronaut-management/native-image.properties

1.475 micronaut-core 3.8.8

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1.476 javax-el 3.0.1-b11

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* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionEncoder.java
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/opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdySettingsFrame.java
* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/multipart/package-info.java
* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/multipart/HttpPostStandardRequestDecoder.java
* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/package-info.java
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* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/TextWebSocketFrame.java
* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/multipart/DiskFileUpload.java
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* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionFilterProvider.java

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/opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker.java

* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker08.java

* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker07.java


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* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-
jar/io/netty/handler/codec/http/websocketx/CorruptedWebSocketFrameException.java
* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-
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jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker00.java
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jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker13.java
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/opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-
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* /opt/cola/permits/1701365421_1685520292.4651008/0/netty-codec-http-4-1-81-final-sources-
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jar/io/netty/handler/codec/http/ReadOnlyHttpHeaders.java
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*  
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jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshakeException.java
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* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-jar/com/amazonaws/services/kms/model/transform/EnableKeyRotationRequestMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-jar/com/amazonaws/services/kms/model/TagResourceRequest.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-jar/com/amazonaws/services/kms/model/transform/GenerateDataKeyWithoutPlaintextRequestMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-

jar/com/amazonaws/services/kms/model/transform/DescribeCustomKeyStoresRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/DecryptRequestMarshaller.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/ExpiredImportTokenException.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/TagException.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/ImportKeyMaterialRequestMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GetKeyPolicyResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/CreateKeyRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/KeyMetadataJsonUnmarshaller.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/CloudHsmClusterNotFoundExceptionUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/CreateCustomKeyStoreRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GetKeyRotationStatusResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GetParametersForImportRequestMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/GrantConstraints.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/TagResourceRequestMarshaller.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/ConnectionErrorCodeType.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/GenerateDataKeyWithoutPlaintextRequest.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/EnableKeyRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GetPublicKeyRequestMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/DeleteCustomKeyStoreRequest.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/InvalidMarkerException.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/SignRequest.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/CustomKeyStoreNotFoundExceptionUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-

jar/com/amazonaws/services/kms/model/transform/CustomKeyStoreInvalidStateExceptionUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/InvalidAliasNameExceptionUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/ListKeysRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/AbstractAWSKMSAsync.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/DeleteCustomKeyStoreRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/GenerateDataKeyRequest.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/ListAliasesResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/TagMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/ImportKeyMaterialResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GrantConstraintsMarshaller.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GetKeyPolicyRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/UpdateKeyDescriptionRequestMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/EncryptRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GenerateDataKeyWithoutPlaintextResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/ListResourceTagsResult.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/GenerateDataKeyPairWithoutPlaintextRequest.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/ScheduleKeyDeletionResult.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/GenerateDataKeyResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/DisableKeyRequest.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/ListKeyPoliciesRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/WrappingKeySpec.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/UpdateKeyDescriptionRequestProtocolMarshaller.java
*

```
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/IncorrectTrustAnchorException.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/ListAliasesResult.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/AWSKMSAsync.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/UpdateCustomKeyStoreRequestProtocolMarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/UpdateCustomKeyStoreResultJsonUnmarshaller.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/ListKeysRequest.java
*
/opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/AWSKMSAsyncClient.java
* /opt/cola/permits/1701365405_1685520296.5555165/0/aws-java-sdk-kms-1-11-942-sources-1-
jar/com/amazonaws/services/kms/model/transform/KeyListEntryMarshaller.java
```

1.480 jmespath-java 1.11.942

1.480.1 Available under license :

No license file was found, but licenses were detected in source scan.

<name>Apache License, Version 2.0</name>

Found in path(s):

```
* /opt/cola/permits/1701365413_1685520290.4240794/0/jmespath-java-1-11-942-jar/META-
INF/maven/com.amazonaws/jmespath-java/pom.xml
```

1.481 aws-java-sdk 1.11.942

1.481.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
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*
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* the License. A copy of the License is located at
*
* http://aws.amazon.com/apache2.0
*
* or in the "license" file accompanying this file. This file is distributed on an "AS IS" BASIS, WITHOUT
WARRANTIES OR
* CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing
```

permissions

* and limitations under the License.

*/

/**

* <p>

* Creates a new secret. A secret in Secrets Manager consists of both the protected secret data and the important information needed to manage the secret.

* </p>

* <p>

* Secrets Manager stores the encrypted secret data in one of a collection of "versions" associated with the secret.

* Each version contains

a copy of the encrypted secret data. Each version is associated with one or more

* "staging labels" that identify where the version is in the rotation cycle. The

* `SecretVersionsToStages` field of the secret contains the mapping of staging labels to the active versions of the secret. Versions without a staging label are considered deprecated and not included in the list.

* </p>

* <p>

* You provide the secret data to be encrypted by putting text in either the `SecretString` parameter

or

* binary data in the `SecretBinary` parameter, but not both. If you include

`SecretString` or

* `SecretBinary` then Secrets Manager also creates an initial secret version and automatically

attaches

* the staging label `AWSCURRENT` to the new version.

* </p>

* <note>

*

*

* <p>

* If you call an operation to encrypt or decrypt the `SecretString`

or `SecretBinary` for a

* secret in the same account as the calling user and that secret doesn't specify a AWS KMS encryption key,

Secrets

* Manager uses the account's default AWS managed customer master key (CMK) with the alias

* `aws/secretsmanager`. If this key doesn't already exist in your account then Secrets Manager

creates

* it for you automatically. All users and roles in the same AWS account automatically have access to use the

* default CMK. Note that if an Secrets Manager API call results in AWS creating the account's AWS-managed

CMK, it

* can result in a one-time significant delay in returning the result.

* </p>

*

*

* <p>

* If the secret resides in a different AWS account from the credentials calling an API that requires encryption or

* decryption of the secret value then you must create and use a custom AWS KMS CMK because you can't access

the

* default CMK for the account

using credentials from a different AWS account. Store the ARN of the CMK in the

* secret when you create the secret or when you update it by including it in the `KMSKeyId`. If you call

* an API that must encrypt or decrypt `SecretString` or `SecretBinary` using credentials from

* a different account then the AWS KMS key policy must grant cross-account access to that other account's user or

* role for both the `kms:GenerateDataKey` and `kms:Decrypt` operations.

* `</p>`

* ``

* ``

* `</note>`

* `<p>`

* `</p>`

* `<p>`

* **Minimum permissions**

* `</p>`

* `<p>`

* To run this command, you must have the following permissions:

* `</p>`

* ``

* ``

* `<p>`

* `secretsmanager:CreateSecret`

* `</p>`

* ``

* ``

* `<p>`

* `kms:GenerateDataKey` - needed only if you use a customer-managed AWS KMS key to encrypt the secret. You do not

* need this permission

to use the account default AWS managed CMK for Secrets Manager.

* `</p>`

* ``

* ``

* `<p>`

* `kms:Decrypt` - needed only if you use a customer-managed AWS KMS key to encrypt the secret. You do not need this

* permission to use the account default AWS managed CMK for Secrets Manager.

* `</p>`

* ``

* ``

* `<p>`

* `secretsmanager:TagResource` - needed only if you include the `Tags` parameter.

* `</p>`

* ``

* ``

* `<p>`

```

* <b>Related operations</b>
* </p>
* <ul>
* <li>
* <p>
* To delete a secret, use <a>DeleteSecret</a>.
* </p>
* </li>
* <li>
* <p>
* To modify an existing secret, use <a>UpdateSecret</a>.
* </p>
* </li>
* <li>
* <p>
* To create a new version of a secret, use <a>PutSecretValue</a>.
* </p>
* </li>
* <li>
* <p>
* To retrieve the encrypted secure string and secure binary values, use <a>GetSecretValue</a>.
* </p>
* </li>
* <li>
* <p>
* To retrieve all other details for a secret, use <a>DescribeSecret</a>. This does not include the encrypted secure
* string and secure binary values.
* </p>
* </li>
* <li>
* <p>
* To retrieve the list of secret versions associated with the current secret, use <a>DescribeSecret</a> and examine
* the <code>SecretVersionsToStages</code> response value.
* </p>
* </li>
* </ul>
*
* @param createSecretRequest
* @return A Java Future containing the result of the CreateSecret operation returned by the service.
* @sample AWSSecretsManagerAsync.CreateSecret
* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/CreateSecret"
target="_top">AWS
*   API Documentation</a>
*/
/**
* <p>
* Retrieves the contents of the encrypted fields <code>SecretString</code> or <code>SecretBinary</code> from
the

```

```

* specified
version of a secret, whichever contains content.
* </p>
* <p>
* <b>Minimum permissions</b>
* </p>
* <p>
* To run this command, you must have the following permissions:
* </p>
* <ul>
* <li>
* <p>
* secretsmanager:GetSecretValue
* </p>
* </li>
* <li>
* <p>
* kms:Decrypt - required only if you use a customer-managed AWS KMS key to encrypt the secret. You do not
need this
* permission to use the account's default AWS managed CMK for Secrets Manager.
* </p>
* </li>
* </ul>
* <p>
* <b>Related operations</b>
* </p>
* <ul>
* <li>
* <p>
* To create a new version of the secret with different encrypted information, use <a>PutSecretValue</a>.
* </p>
* </li>
* <li>
* <p>
* To retrieve the non-encrypted details for the secret, use <a>DescribeSecret</a>.
* </p>
* </li>
* </ul>
*
* @param getSecretValueRequest
* @return A Java Future containing the result of the GetSecretValue operation returned by the service.
* @sample AWSSecretsManagerAsync.GetSecretValue
* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/GetSecretValue"
target="_top">AWS
* API Documentation</a>
*/
/**
* <p>

```


* Stores a new encrypted secret value in the specified secret. To do this, the operation creates a new version and attaches it to the secret. The version can contain a new `SecretString` value or a new `SecretBinary` value. You can also specify the staging labels that are initially attached to the new version.

Note

The Secrets Manager console uses only the `SecretString` field. To add binary data to a secret with the `SecretBinary` field you must use the AWS CLI or one of the AWS SDKs.

-

- If this operation creates the first version for the secret then Secrets Manager automatically attaches the staging label `AWSCURRENT` to the new version.

- If another version of this secret already exists, then this operation does not automatically move any staging labels other than those that you explicitly specify in the `VersionStages` parameter.

- If this operation moves the staging label `AWSCURRENT` from another version to this version (because you included it in the `StagingLabels` parameter) then Secrets Manager also automatically moves the staging label `AWSPREVIOUS` to the version that `AWSCURRENT` was removed from.

- This operation is idempotent. If a version with a `VersionId` with the same value as the `ClientRequestToken` parameter already exists and you specify the same secret data, the operation succeeds but does nothing. However, if the secret data is different, then the operation fails because you cannot modify an existing version; you can only create new ones.

- * ``
- * `<p>`
- * If you call an operation to encrypt or decrypt the `<code>SecretString</code>` or `<code>SecretBinary</code>` for a
 - * secret in the same account as the calling user and that secret doesn't specify a AWS KMS encryption key, Secrets Manager uses the account's default AWS managed customer master key (CMK) with the alias `<code>aws/secretsmanager</code>`. If this key doesn't already exist in your account then Secrets Manager creates
 - * it for you automatically. All users and roles in the same AWS account automatically have access to use the default CMK. Note that if an Secrets Manager API call results in AWS creating the account's AWS-managed CMK, it
 - * can result in a one-time significant delay in returning the result.
 - * `</p>`
 - * ``
 - * ``
 - * `<p>`
 - * If the secret resides in a different AWS account from the credentials calling an API that requires encryption or decryption of the secret value then you must create and use a custom AWS KMS CMK because you can't access the
 - * default CMK for the account using credentials from a different AWS account. Store the ARN of the CMK in the secret when you create the secret or when you update it by including it in the `<code>KMSKeyId</code>`. If you call
 - * an API that must encrypt or decrypt `<code>SecretString</code>` or `<code>SecretBinary</code>` using credentials from
 - * a different account then the AWS KMS key policy must grant cross-account access to that other account's user or
 - * role for both the `kms:GenerateDataKey` and `kms:Decrypt` operations.
 - * `</p>`
 - * ``
 - * ``
 - * `</note>`
 - * `<p>`
 - * **Minimum permissions**
 - * `</p>`
 - * `<p>`
 - * To run this command, you must have the following permissions:
 - * `</p>`
 - * ``
 - * ``
 - * `<p>`
 - * `secretsmanager:PutSecretValue`
 - * `</p>`
 - * ``
 - * ``
 - * `<p>`
 - * `kms:GenerateDataKey` - needed only if you use a customer-managed AWS KMS key to encrypt the secret. You

do not

- * need this permission to use the account's default AWS managed CMK for Secrets Manager.

- * </p>

- *

- *

- * <p>

- * Related operations

- * </p>

- *

- *

- * <p>

- * To retrieve the encrypted value you store in the version of a secret, use <a>GetSecretValue.

- * </p>

- *

- *

- * <p>

- * To create a secret, use <a>CreateSecret.

- * </p>

- *

- *

- * <p>

- * To get the details for a secret, use <a>DescribeSecret.

- * </p>

- *

- *

- * <p>

- * To list the versions attached to a secret, use <a>ListSecretVersionIds.

- * </p>

- *

- *

- *

- * @param putSecretValueRequest

- * @return A Java Future containing the result of the PutSecretValue operation returned by the service.

- * @sample AWSSecretsManagerAsync.PutSecretValue

- * @see AWS

- *

- * API Documentation

- * /

- /**

- * <p>

- * Modifies many of the details of the specified secret. If you include a <code>ClientRequestToken</code> and

- * <i>either</i> <code>SecretString</code> or <code>SecretBinary</code> then it also creates a new version

- attached

- * to the secret.

- * </p>

- * <p>

- * To modify the rotation configuration of a secret, use <a>RotateSecret instead.

- * </p>

* <note>

* <p>

* The Secrets Manager console uses only the <code>SecretString</code> parameter and therefore limits you to

- * encrypting and storing only a text string. To encrypt and store binary data as part of the version of a secret,
- * you must use either the AWS CLI or one of the AWS SDKs.

* </p>

* </note>

*

*

* <p>

* If a version with a <code>VersionId</code> with the same value as the <code>ClientRequestToken</code> parameter

- * already exists, the operation results in an error. You cannot modify an existing version, you can only create a
- * new version.

* </p>

*

*

* <p>

* If you include <code>SecretString</code> or <code>SecretBinary</code> to create a new secret version,

Secrets

- * Manager automatically attaches the staging label <code>AWSCURRENT</code> to the new version.

* </p>

*

*

* <note>

*

*

* <p>

* If you call an operation to encrypt or decrypt the <code>SecretString</code> or <code>SecretBinary</code> for a

- * secret in the same account as the calling user and that secret doesn't specify a AWS KMS encryption key,

Secrets

- * Manager uses the account's default AWS managed customer master key (CMK) with the alias
- * <code>aws/secretsmanager</code>. If this key doesn't already exist in your account then Secrets Manager creates
- * it for you automatically. All users and roles in the same AWS account automatically have access to use the
- * default CMK. Note that if an Secrets Manager API call results in AWS creating the account's AWS-managed CMK, it
- * can result in a one-time significant delay in returning the result.

* </p>

*

*

* <p>

* If the secret resides in a different AWS account from the credentials calling an API that requires encryption or

- * decryption of the secret value then you must create and use a custom AWS KMS CMK because you can't access the
- * default CMK for the account using credentials from a different

AWS account. Store the ARN of the CMK in the

* secret when you create the secret or when you update it by including it in the `KMSKeyId`. If you call

* an API that must encrypt or decrypt `SecretString` or `SecretBinary` using credentials from

* a different account then the AWS KMS key policy must grant cross-account access to that other account's user or

* role for both the `kms:GenerateDataKey` and `kms:Decrypt` operations.

* `</p>`

* ``

* ``

* `</note>`

* `<p>`

* **Minimum permissions**

* `</p>`

* `<p>`

* To run this command, you must have the following permissions:

* `</p>`

* ``

* ``

* `<p>`

* `secretsmanager:UpdateSecret`

* `</p>`

* ``

* ``

* `<p>`

* `kms:GenerateDataKey` - needed only if you use a custom AWS KMS key to encrypt the secret. You do not need this

* permission to use the account's AWS managed CMK for Secrets Manager.

* `</p>`

* ``

* ``

* `<p>`

* `kms:Decrypt` - needed only if you use a custom AWS KMS key to encrypt the secret. You do not need this permission

* to use the account's AWS managed CMK for Secrets Manager.

* `</p>`

* ``

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* `<p>`

* **Related operations**

* `</p>`

* ``

* ``

* `<p>`

* To create a new secret, use `CreateSecret`.

* `</p>`

* ``

```

* <li>
* <p>
* To add only a new version to an existing secret, use <a>PutSecretValue</a>.
* </p>
* </li>
* <li>
* <p>
* To get the details for a secret, use <a>DescribeSecret</a>.
* </p>
* </li>
* <li>
* <p>
* To list the versions contained in a secret, use <a>ListSecretVersionIds</a>.
* </p>
* </li>
* </ul>
*
* @param updateSecretRequest
* @return A Java Future containing the result of the UpdateSecret operation returned by the service.
* @sample AWSSecretsManagerAsync.UpdateSecret
* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/UpdateSecret"
target="_top">AWS
*   API Documentation</a>
*/

```

Found in path(s):

```

* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
jar/com/amazonaws/services/secretsmanager/AWSSecretsManagerAsync.java

```

No license file was found, but licenses were detected in source scan.

```

/*

```

```

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```

Found in path(s):

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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-

```

jar/com/amazonaws/services/secretsmanager/model/transform/PutSecretValueResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
jar/com/amazonaws/services/secretsmanager/model/CancelRotateSecretResult.java
*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
jar/com/amazonaws/services/secretsmanager/model/transform/CreateSecretResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
jar/com/amazonaws/services/secretsmanager/model/ListSecretsResult.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
jar/com/amazonaws/services/secretsmanager/model/RestoreSecretResult.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
jar/com/amazonaws/services/secretsmanager/model/UntagResourceResult.java
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/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-
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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/ListSecretVersionIdsRequestMarshaller.java

* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/MalformedPolicyDocumentException.java

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* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/RotateSecretResult.java

* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/AbstractAWSSecretsManagerAsync.java

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*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/PutSecretValueRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/GetSecretValueResult.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/GetRandomPasswordRequestMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/UpdateSecretRequestMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/LimitExceededException.java
*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/ValidateResourcePolicyResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/UpdateSecretResult.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/SecretVersionsListEntryMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/PutSecretValueResult.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/CreateSecretRequest.java
*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/RotateSecretResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/AbstractAWSSecretsManager.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/PreconditionNotMetException.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/GetSecretValueRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/SecretVersionsListEntry.java

* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/LimitExceededExceptionUnmarshaller.java
*

/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/PutResourcePolicyRequestMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/DeleteSecretResult.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/InvalidParameterExceptionUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/RotateSecretRequestMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/ListSecretVersionIdsRequest.java
*

/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/DecryptionFailureException.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/FilterJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/TagResourceRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/RotationRulesType.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/CreateSecretRequestMarshaller.java
*

/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/RotationRulesTypeJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/ListSecretVersionIdsRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/SecretListEntryMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/DeleteSecretRequestMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/GetSecretValueRequest.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/AWSSecretsManagerAsyncClient.java
*

/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/ResourceExistsExceptionUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/ListSecretsRequest.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/GetRandomPasswordRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/DeleteResourcePolicyRequest.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/ListSecretVersionIdsResult.java

*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/UpdateSecretVersionStageRequest.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/FilterMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/InvalidNextTokenExceptionUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/UpdateSecretRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/PublicPolicyException.java
*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/package-info.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/GetResourcePolicyResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/UpdateSecretVersionStageRequestMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/TagResourceResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/GetResourcePolicyRequestProtocolMarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/UpdateSecretRequest.java
*
/opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/RotateSecretRequest.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/DescribeSecretResultJsonUnmarshaller.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/GetRandomPasswordRequest.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/ResourceNotFoundException.java
* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/model/transform/PutResourcePolicyResultJsonUnmarshaller.java
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*/

/**

* <p>

* Creates a new secret. A secret in Secrets Manager consists of both the protected secret data and the important

* information needed to manage the secret.

* </p>

* <p>

* Secrets Manager stores the encrypted secret data in one of a collection of "versions" associated with the secret.

* Each version contains

a copy of the encrypted secret data. Each version is associated with one or more

* "staging labels" that identify where the version is in the rotation cycle. The

* <code>SecretVersionsToStages</code> field of the secret contains the mapping of staging labels to the active

* versions of the secret. Versions without a staging label are considered deprecated and not included in the list.

* </p>

* <p>

* You provide the secret data to be encrypted by putting text in either the <code>SecretString</code> parameter

or

* binary data in the <code>SecretBinary</code> parameter, but not both. If you include

<code>SecretString</code> or

* <code>SecretBinary</code> then Secrets Manager also creates an initial secret version and automatically

attaches

* the staging label <code>AWSCURRENT</code> to the new version.

* </p>

* <note>

*

*

* <p>

* If you call an operation to encrypt or decrypt the <code>SecretString</code>

or <code>SecretBinary</code> for a

* secret in the same account as the calling user and that secret doesn't specify a AWS KMS encryption key,

Secrets

* Manager uses the account's default AWS managed customer master key (CMK) with the alias

* <code>aws/secretsmanager</code>. If this key doesn't already exist in your account then Secrets Manager

creates

* it for you automatically. All users and roles in the same AWS account automatically have access to use the

* default CMK. Note that if an Secrets Manager API call results in AWS creating the account's AWS-managed

CMK, it

* can result in a one-time significant delay in returning the result.

* </p>

*

*

* <p>

* If the secret resides in a different AWS account from the credentials calling an API that requires encryption or

* decryption of the secret value then you must create and use a custom AWS KMS CMK because you can't access

the

- * default CMK for the account

using credentials from a different AWS account. Store the ARN of the CMK in the

- * secret when you create the secret or when you update it by including it in the `KMSKeyId`. If you call
- * an API that must encrypt or decrypt `SecretString` or `SecretBinary` using credentials from
- * a different account then the AWS KMS key policy must grant cross-account access to that other account's user

or

- * role for both the `kms:GenerateDataKey` and `kms:Decrypt` operations.

</p>

</note>

<p>

</p>

<p>

Minimum permissions

</p>

<p>

* To run this command, you must have the following permissions:

</p>

<p>

* `secretsmanager:CreateSecret`

</p>

<p>

* `kms:GenerateDataKey` - needed only if you use a customer-managed AWS KMS key to encrypt the secret. You do not

do not

- * need this permission

to use the account default AWS managed CMK for Secrets Manager.

</p>

<p>

* `kms:Decrypt` - needed only if you use a customer-managed AWS KMS key to encrypt the secret. You do not

need this

- * permission to use the account default AWS managed CMK for Secrets Manager.

</p>

<p>

* `secretsmanager:TagResource` - needed only if you include the `Tags` parameter.

</p>


```

* <p>
* <b>Related operations</b>
* </p>
* <ul>
* <li>
* <p>
* To delete a secret, use <a>DeleteSecret</a>.
* </p>
* </li>
* <li>
* <p>
* To modify an existing secret, use <a>UpdateSecret</a>.
* </p>
* </li>
* <li>
* <p>
* To create a new version of a secret, use <a>PutSecretValue</a>.
* </p>
* </li>
* <li>
* <p>
* To retrieve the encrypted secure string and secure binary values, use <a>GetSecretValue</a>.
* </p>
* </li>
* <li>
* <p>
* To retrieve all other details for a secret, use <a>DescribeSecret</a>. This does not include the encrypted secure
* string and secure binary values.
* </p>
* </li>
* <li>
* <p>
* To retrieve the list of secret versions associated with the current secret, use <a>DescribeSecret</a> and examine
* the <code>SecretVersionsToStages</code> response value.
* </p>
* </li>
* </ul>
*
* @param createSecretRequest
* @return Result of the CreateSecret operation returned by the service.
* @throws InvalidParameterException
*     You provided an invalid value for a parameter.
* @throws InvalidRequestException
*     You provided a parameter value that is not valid for the current state of the resource.</p>
* <p>
* Possible causes:
* </p>
* <ul>

```



```

* <li>
* <p>

* You tried to perform the operation on a secret that's currently marked deleted.
* </p>
* </li>
* <li>
* <p>
* You tried to enable rotation on a secret that doesn't already have a Lambda function ARN configured and
* you didn't include such an ARN as a parameter in this call.
* </p>
* </li>
* @throws LimitExceededException
* The request failed because it would exceed one of the Secrets Manager internal limits.
* @throws EncryptionFailureException
* Secrets Manager can't encrypt the protected secret text using the provided KMS key. Check that the
* customer master key (CMK) is available, enabled, and not in an invalid state. For more information, see
* <a href="http://docs.aws.amazon.com/kms/latest/developerguide/key-state.html">How Key State Affects
Use
* of a Customer Master Key</a>.
* @throws
ResourceExistsException
* A resource with the ID you requested already exists.
* @throws ResourceNotFoundException
* We can't find the resource that you asked for.
* @throws MalformedPolicyDocumentException
* The policy document that you provided isn't valid.
* @throws InternalServiceErrorException
* An error occurred on the server side.
* @throws PreconditionNotMetException
* The request failed because you did not complete all the prerequisite steps.
* @sample AWSSecretsManager.CreateSecret
* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/CreateSecret"
target="_top">AWS
* API Documentation</a>
*/
/**
* <p>
* Retrieves the contents of the encrypted fields <code>SecretString</code> or <code>SecretBinary</code> from
the
* specified version of a secret, whichever contains content.
* </p>
* <p>
* <b>Minimum permissions</b>
* </p>
* <p>
* To run this command, you must have the following permissions:
* </p>

```

- *
- *
- * <p>
- * secretsmanager:GetSecretValue
- * </p>
- *
- *
- * <p>
- * kms:Decrypt - required only if you use a customer-managed AWS KMS key to encrypt the secret. You do not need this
- * permission to use the account's default AWS managed CMK for Secrets Manager.
- * </p>
- *
- *
- * <p>
- * Related operations
- * </p>
- *
- *
- * <p>
- * To create a new version of the secret with different encrypted information, use <a>PutSecretValue.
- * </p>
- *
- *
- * <p>
- * To retrieve the non-encrypted details for the secret, use <a>DescribeSecret.
- * </p>
- *
- *
- *
- * @param getSecretValueRequest
- * @return Result of the GetSecretValue operation returned by the service.
- * @throws ResourceNotFoundException
- * We can't find the resource that you asked for.
- * @throws InvalidParameterException
- * You provided an invalid value for a parameter.
- * @throws InvalidRequestException
- * You provided a parameter value that is not valid for the current state of the resource.</p>
- * <p>
- * Possible causes:
- * </p>
- *
- *
- * <p>
- * You tried to perform the operation on a secret that's currently marked deleted.
- * </p>
- *
- *

```

* <p>
* You tried to enable rotation on a secret that doesn't already have a Lambda function ARN configured and
* you didn't include such an ARN as a parameter in this call.
* </p>
* </li>
* @throws DecryptionFailureException
* Secrets Manager can't decrypt the protected secret text using the provided KMS key.
* @throws InternalServiceErrorException
* An error occurred on the server side.
* @sample AWSSecretsManager.GetSecretValue
* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/GetSecretValue"
target="_top">AWS
* API Documentation</a>
*/
/**
* <p>
* Stores a new encrypted secret value in the specified secret. To do this, the operation creates a new version and
* attaches it to the secret. The version can contain a new <code>SecretString</code> value or a new
* <code>SecretBinary</code> value. You can also specify the staging labels that are initially attached to the new
* version.
* </p>
* <note>
* <p>
* The Secrets Manager console uses only the <code>SecretString</code> field. To add binary data to a secret
with
* the <code>SecretBinary</code> field you must use the AWS CLI or one of the AWS SDKs.
* </p>
* </note>
* <ul>
* <li>
* <p>
*
If this operation creates the first version for the secret then Secrets Manager automatically attaches the
* staging label <code>AWSCURRENT</code> to the new version.
* </p>
* </li>
* <li>
* <p>
* If another version of this secret already exists, then this operation does not automatically move any staging
* labels other than those that you explicitly specify in the <code>VersionStages</code> parameter.
* </p>
* </li>
* <li>
* <p>
* If this operation moves the staging label <code>AWSCURRENT</code> from another version to this version
(because
* you included it in the <code>StagingLabels</code> parameter) then Secrets Manager also automatically moves the
the

```

- * staging label `AWSPREVIOUS` to the version that `AWSCURRENT` was removed from.
- *
- * -
- * -
- *
- * This operation is idempotent. If a version with a `VersionId` with the same value as the `ClientRequestToken` parameter already exists and you specify the same secret data, the operation succeeds but does nothing. However, if the secret data is different, then the operation fails because you cannot modify an existing version; you can only create new ones.
- *
- * -
- *
- *
- *
- * -
- *
- * If you call an operation to encrypt or decrypt the `SecretString` or `SecretBinary` for a secret in the same account as the calling user and that secret doesn't specify a AWS KMS encryption key, Secrets Manager uses the account's default AWS managed customer master key (CMK) with the alias `aws/secretsmanager`. If this key doesn't already exist in your account then Secrets Manager creates it for you automatically. All users and roles in the same AWS account automatically have access to use the default CMK. Note that if an Secrets Manager API call results in AWS creating the account's AWS-managed CMK, it can result in a one-time significant delay in returning the result.
- *
- * -
- * -
- *
- * If the secret resides in a different AWS account from the credentials calling an API that requires encryption or decryption of the secret value then you must create and use a custom AWS KMS CMK because you can't access the default CMK for the account using credentials from a different AWS account. Store the ARN of the CMK in the secret when you create the secret or when you update it by including it in the `KMSKeyId`. If you call an API that must encrypt or decrypt `SecretString` or `SecretBinary` using credentials from a different account then the AWS KMS key policy must grant cross-account access to that other account's user or role for both the `kms:GenerateDataKey` and `kms:Decrypt` operations.
- *
- * -

*

* </note>

* <p>

* Minimum permissions

* </p>

* <p>

* To run this command, you must have the following permissions:

* </p>

*

*

* <p>

* secretsmanager:PutSecretValue

* </p>

*

*

* <p>

* kms:GenerateDataKey - needed only if you use a customer-managed AWS KMS key to encrypt the secret. You do not

* need this permission to use the account's default AWS managed CMK for Secrets Manager.

* </p>

*

*

* <p>

* Related operations

* </p>

*

*

* <p>

* To retrieve the encrypted value you store in the version of a secret, use <a>GetSecretValue.

* </p>

*

*

* <p>

* To create a secret, use <a>CreateSecret.

* </p>

*

*

* <p>

* To get the details for a secret, use <a>DescribeSecret.

* </p>

*

*

* <p>

* To list the versions attached to a secret, use <a>ListSecretVersionIds.

* </p>

*

*

*

```

* @param putSecretValueRequest
* @return Result of the PutSecretValue operation returned by the service.
* @throws InvalidParameterException
*     You provided an invalid value for a parameter.
* @throws InvalidRequestException
*     You provided a parameter value that is not valid for the current state of the resource.</p>
*     <p>
*     Possible causes:
*     </p>
*     <ul>
*     <li>
*     <p>
*     You tried to perform the operation on a secret that's currently marked deleted.
*     </p>
*     </li>
*     <li>
*     <p>
*     You tried to enable rotation on a secret that doesn't already have a Lambda function ARN configured and
*     you didn't include such an ARN as a parameter in this call.
*
*     </p>
*     </li>
* @throws LimitExceededException
*     The request failed because it would exceed one of the Secrets Manager internal limits.
* @throws EncryptionFailureException
*     Secrets Manager can't encrypt the protected secret text using the provided KMS key. Check that the
*     customer master key (CMK) is available, enabled, and not in an invalid state. For more information, see
*     <a href="http://docs.aws.amazon.com/kms/latest/developerguide/key-state.html">How Key State Affects
Use
*     of a Customer Master Key</a>.
* @throws ResourceExistsException
*     A resource with the ID you requested already exists.
* @throws ResourceNotFoundException
*     We can't find the resource that you asked for.
* @throws InternalServiceErrorException
*     An error occurred on the server side.
* @sample AWSSecretsManager.PutSecretValue
* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/PutSecretValue"
target="_top">AWS
*     API Documentation</a>
*/
/**
* <p>
* Modifies many of the details of the specified secret. If you include a <code>ClientRequestToken</code> and
* <i>either</i> <code>SecretString</code> or <code>SecretBinary</code> then it also creates a new version
attached
* to the secret.
* </p>

```

* <p>

* To modify the rotation configuration of a secret, use <a>RotateSecret instead.

* </p>

* <note>

* <p>

* The Secrets Manager console uses only the <code>SecretString</code> parameter and therefore limits you to

* encrypting and storing only a text string. To encrypt and store binary data as part of the version of a secret,

* you must use either the AWS CLI or one of the AWS SDKs.

* </p>

* </note>

*

*

* <p>

* If a version with a <code>VersionId</code> with the same value as the <code>ClientRequestToken</code> parameter

* already exists, the operation results in an error. You cannot modify an existing version, you can only create a new version.

* </p>

*

*

* <p>

* If you include <code>SecretString</code> or <code>SecretBinary</code> to create a new secret version,

Secrets

* Manager automatically attaches the staging label <code>AWSCURRENT</code> to the new version.

* </p>

*

*

* <note>

*

*

* <p>

* If you call an operation to encrypt or decrypt the <code>SecretString</code> or <code>SecretBinary</code> for a

* secret in the same account as the calling user and that secret doesn't specify a AWS KMS encryption key,

Secrets

* Manager uses the account's default AWS managed customer master key (CMK) with the alias

* <code>aws/secretsmanager</code>. If this key doesn't already exist in your account then Secrets Manager creates

* it for you automatically.

All users and roles in the same AWS account automatically have access to use the

* default CMK. Note that if an Secrets Manager API call results in AWS creating the account's AWS-managed CMK, it

* can result in a one-time significant delay in returning the result.

* </p>

*

*

* <p>

* If the secret resides in a different AWS account from the credentials calling an API that requires encryption or

- * decryption of the secret value then you must create and use a custom AWS KMS CMK because you can't access the
- * default CMK for the account using credentials from a different AWS account. Store the ARN of the CMK in the
- * secret when you create the secret or when you update it by including it in the `KMSKeyId`. If you call
- * an API that must encrypt or decrypt `SecretString` or `SecretBinary` using credentials from
- * a different account then the AWS KMS key policy must grant cross-account access to that other account's user or
- * role for both the `kms:GenerateDataKey` and `kms:Decrypt` operations.

- *
- *
- *
- *

- * **Minimum permissions**

- *

* To run this command, you must have the following permissions:

- *
- *
- *
- *

* `secretsmanager:UpdateSecret`

- *
- *
- *

* `kms:GenerateDataKey` - needed only if you use a custom AWS KMS key to encrypt the secret. You do not need this

- * permission to use the account's AWS managed CMK for Secrets Manager.
- *
- *
- *

* `kms:Decrypt` - needed only if you use a custom AWS KMS key to encrypt the secret. You do not need this permission

- * to use the account's AWS managed CMK for Secrets Manager.
- *
- *
- *

* **Related operations**

- *
- *
- *
- *

* To

create a new secret, use `<a>CreateSecret`.

* `</p>`

* ``

* ``

* `<p>`

* To add only a new version to an existing secret, use `<a>PutSecretValue`.

* `</p>`

* ``

* ``

* `<p>`

* To get the details for a secret, use `<a>DescribeSecret`.

* `</p>`

* ``

* ``

* `<p>`

* To list the versions contained in a secret, use `<a>ListSecretVersionIds`.

* `</p>`

* ``

* ``

*

* `@param` updateSecretRequest

* `@return` Result of the UpdateSecret operation returned by the service.

* `@throws` InvalidParameterException

* You provided an invalid value for a parameter.

* `@throws` InvalidRequestException

* You provided a parameter value that is not valid for the current state of the resource.

* `<p>`

* Possible causes:

* `</p>`

* ``

* ``

* `<p>`

* You tried to perform the

operation on a secret that's currently marked deleted.

* `</p>`

* ``

* ``

* `<p>`

* You tried to enable rotation on a secret that doesn't already have a Lambda function ARN configured and you didn't include such an ARN as a parameter in this call.

* `</p>`

* ``

* `@throws` LimitExceededException

* The request failed because it would exceed one of the Secrets Manager internal limits.

* `@throws` EncryptionFailureException

* Secrets Manager can't encrypt the protected secret text using the provided KMS key. Check that the

* customer master key (CMK) is available, enabled, and not in an invalid state. For more information, see

* `How Key State Affects`

Use

* of a Customer Master Key.

* @throws ResourceExistsException

*

A resource with the ID you requested already exists.

* @throws ResourceNotFoundException

* We can't find the resource that you asked for.

* @throws MalformedPolicyDocumentException

* The policy document that you provided isn't valid.

* @throws InternalServiceErrorException

* An error occurred on the server side.

* @throws PreconditionNotMetException

* The request failed because you did not complete all the prerequisite steps.

* @sample AWSecretsManager.UpdateSecret

* @see <a href="http://docs.aws.amazon.com/goto/WebAPI/secretsmanager-2017-10-17/UpdateSecret"

target="_top">AWS

* API Documentation

*/

Found in path(s):

* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/AWSecretsManagerClient.java

* /opt/cola/permits/1701365397_1685520294.5569222/0/aws-java-sdk-secretsmanager-1-11-942-sources-1-jar/com/amazonaws/services/secretsmanager/AWSecretsManager.java

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1.483 libnss-nis 2.17

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@subheading END OF TERMS AND CONDITIONS

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That's all there is to it!

1.484 libnss-nisplus 2.17

1.484.1 Available under license :

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Version 2, June 1991

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[This is the first released version of the library GPL. It is
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Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

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this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must

be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library,

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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<one line to give the library's name and a brief idea of what it does.>

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We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

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will not be affected by problems that might be introduced by others.

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When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating

system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former

contains code derived from the library, whereas the latter must be combined with the library in order to run.

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@enumerate 0

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You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

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If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any

application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)
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under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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jar/commonMain/okio/internal/ByteString.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/-Platform.kt
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Utf8.kt
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```

* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/PeekSource.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/-DeprecatedOkio.kt
*
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* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/SegmentedByteString.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/SegmentedByteString.kt
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* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/ByteString.kt

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* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/HashingSource.kt

* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/Pipe.kt

*

/* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Options.kt

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* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/BufferedSink.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/SegmentPool.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/GzipSink.kt
*
/opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/JvmOkio.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/RealBufferedSource.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/Buffer.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/Source.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/Timeout.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/AsyncTimeout.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/InflaterSource.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/ForwardingSink.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/SegmentPool.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/GzipSource.kt
*
/opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/Sink.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/BufferedSource.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/ForwardingSource.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Segment.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/DeflaterSink.kt
* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/jvmMain/okio/RealBufferedSink.kt
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* /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/internal/Buffer.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Source.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/RealBufferedSink.kt
 *
 /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Timeout.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/BufferedSink.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/BufferedSource.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Sink.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Buffer.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/RealBufferedSource.kt
 * /opt/cola/permits/1779853517_1693237794.7730844/0/okio-2-8-0-sources-4-jar/commonMain/okio/Okio.kt

1.486 libpkit 0.23.5-3.el7

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